

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)

**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:05

**First Dose M/F:** NA / NA

**Lab:** BAT

**C Number:**

C53634B

**Lock Date:**

Not Entered.

**Cage Range:**

All

**Date Range:**

All

**Reasons For Removal:**

All

**Removal Date Range:**

All

**Treatment Groups:**

All

**Study Gender:**

Both

**PWG Approval Date**

01/24/1990

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:05

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8001

TRT#: 1

DOSE: 0 PPM 0-0

SEX: Male

DISP: Natural Death

DAY ON TEST: 714

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Brain	Epididymis
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Lung
Lymph Node	Nose	Pancreas	Parathyroid Gland
Pituitary Gland	Prostate	Salivary Glands	Skin
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder			

AUTO PRECLUDES DIAG.

Intestine Small - Duodenum

OBSERVATIONS

Adrenal Gland	Medulla	Hyperplasia	Mild
	Cortex	Hypertrophy	Mild
Heart		Degeneration	Chronic, Moderate
Kidney		Nephropathy	Chronic, Moderate
Liver		Basophilic Focus	Minimal
		Clear Cell Focus	Minimal
		Degeneration	Cystic, Mild
		Eosinophilic Focus	Mild
	Bile Duct	Hyperplasia	Marked
		Inflammation	Chronic Active, Moderate
		Leukemia Mononuclear	
Note: [ LEUKEMIA MONUC ] TGLs = 2-4,2-12			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Preputial Gland		Inflammation	Chronic Active, Mild
Spleen		Leukemia Mononuclear	
Note: [ LEUKEMIA MONUC ] TGLs = 1-11			
Testes	Bilateral, Interstit Cell	Adenoma	
Note: [ ADENOMA ] TGLs = 3-10			
Thyroid Gland	C Cell	Hyperplasia	Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:05

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8001

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:** 714

**DOSE:** 0 PPM 0-0

**DISP:** Natural Death

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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PRIMARY CAUSE OF DEATH

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Animal Note: PROBABLE COD LEUKEMIA MONONUCLEAR

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:05

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8002

TRT#: 1

SEX: Male

DAY ON TEST: 727

DOSE: 0 PPM 0-0

DISP: Terminal Sacrifice

HISTO:

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Lung
Lymph Node	Salivary Glands	Skin	Spleen
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder			

**MISSING**

Parathyroid Gland

**OBSERVATIONS**

Adrenal Gland	Cortex	Hyperplasia	Mild
Heart		Degeneration	Chronic, Moderate
Intestine Large	Rectum	Parasite Metazoan	
Islets, Pancreatic		Carcinoma	
Note: [ CARCINOMA ] TGLs = 1-11			
Kidney		Nephropathy	Chronic, Mild
Liver		Basophilic Focus	Mild
	Bile Duct	Hyperplasia	Mild
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Nose	Nasolacrim Dct	Inflammation	Chronic Active, Mild
Pancreas	Acinus	Atrophy	Mild
Pituitary Gland	Pars Distalis	Adenoma	
Note: [ ADENOMA ] TGLs = 3-7			
Preputial Gland		Inflammation	Chronic Active, Mild
Prostate		Inflammation	Chronic Active, Mild
		Metaplasia	Squamous, Mild
Testes	Bilateral, Interstit Cell	Adenoma	
Note: [ ADENOMA ] TGLs = 2-10			
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

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\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:05

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8002

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:** 727

**DOSE:** 0 PPM 0-0

**DISP:** Terminal Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Animal Note: TGL1-11, PANCREATIC MASS IS ISLET CELL CARCINOMA

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:05

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8003

TRT#: 1

SEX: Male

DAY ON TEST: 713

DOSE: 0 PPM 0-0

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Brain	Epididymis
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Nose	Parathyroid Gland	Prostate	Salivary Glands
Skin	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder		

OBSERVATIONS

Adrenal Gland	Medulla	Hyperplasia	Mild
	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
	Medulla	Pheochromocytoma Benign	
Heart		Degeneration	Chronic, Moderate
Kidney		Leukemia Mononuclear	
		Nephropathy	Chronic, Moderate
[ Nephropathy TGLS = 2-1,2-12 ]			
Liver		Basophilic Focus	Mild
		Degeneration	Cystic, Mild
	Bile Duct	Hyperplasia	Moderate
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Mild
Pituitary Gland	Pars Distalis	Leukemia Mononuclear	
Preputial Gland		Hyperplasia	Mild
		Inflammation	Chronic Active, Moderate
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-11 ]			
Testes	Bilateral, Interstit Cell	Adenoma	
Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:05

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8003

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:** 713

**DOSE:** 0 PPM 0-0

**DISP:** Moribund Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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PRIMARY CAUSE OF DEATH

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Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:05

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8004

TRT#: 1

SEX: Male

DAY ON TEST: 651

DOSE: 0 PPM 0-0

DISP: Moribund Sacrifice

HISTO:

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Bone	Brain	Epididymis	Esophagus
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Lymph Node
Nose	Pancreas	Parathyroid Gland	Pituitary Gland
Prostate	Salivary Glands	Skin	Spleen
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder			

**OBSERVATIONS**

Adrenal Gland	Bilateral, Medulla Cortex	Pheochromocytoma Benign Vacuolization Cytoplasmic Degeneration	Marked Chronic, Moderate
Heart		Nephropathy	Chronic, Marked
Kidney		Degeneration	Moderate
Liver	Centrilobular Bile Duct	Hyperplasia Vacuolization Cytoplasmic	Marked Marked
Lung	Interstitialium	Inflammation	Chronic Active, Moderate
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Preputial Gland		Inflammation	Chronic Active, Mild
Testes	Interstit Cell Interstit Cell	Adenoma Hyperplasia	Mild
Thyroid Gland	C Cell C Cell	Adenoma Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

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Animal Note: TGL1-11,2-4, LIVER IS SWOLLEN, NO MASSES PRESENT

Animal Note: MORIBUND SACRIFICE DUE TO LIVER AND KIDNEY LESIONS

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:05

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8005

TRT#: 1

SEX: Male

DAY ON TEST: 727

DOSE: 0 PPM 0-0

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Brain	Epididymis
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Lymph Node	Nose	Pituitary Gland	Prostate
Salivary Glands	Skin	Stomach - Forestomach	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	

MISSING

Parathyroid Gland

OBSERVATIONS

Adrenal Gland	Medulla	Hyperplasia	Mild
	Cortex	Hypertrophy	Mild
	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
Heart		Degeneration	Chronic, Moderate
Kidney		Nephropathy	Chronic, Mild
Liver	Bile Duct	Hyperplasia	Moderate
		Leukemia Mononuclear	
		Leukemia Mononuclear	
Lung			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas		Leukemia Mononuclear	
Preputial Gland		Inflammation	Chronic Active, Moderate
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 2-11 ]			
Testes	Bilateral, Interstit Cell	Adenoma	
Note: [ ADENOMA ] TGLs = 1-10			
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:05

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8006

TRT#: 1

SEX: Male

DAY ON TEST: 727

DOSE: 0 PPM 0-0

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Lung	Lymph Node	Nose	Parathyroid Gland
Salivary Glands	Spleen	Stomach - Forestomach	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Moderate
Heart		Degeneration	Chronic, Mild
Islets, Pancreatic		Adenoma	
Kidney		Nephropathy	Chronic, Moderate
Liver		Basophilic Focus	Moderate
		Eosinophilic Focus	Minimal
	Bile Duct	Hyperplasia	Mild
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Adenoma	
Pituitary Gland	Pars Distalis	Adenoma	
Note: [ ADENOMA ] TGLs = 2-7			
Preputial Gland		Inflammation	Chronic Active, Mild
Prostate		Inflammation	Chronic Active, Mild
		Metaplasia	Squamous, Mild
Skin	Subcut Tiss	Fibroma	
[ Fibroma TGLS = 1-11 ]			
Testes	Interstit Cell	Adenoma	
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL1-11, SKIN MASS WAS RECORDED AS BODY DORSAL ON CLIN OBS

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:05

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8007

TRT#: 1

SEX: Male

DAY ON TEST: 675

DOSE: 0 PPM 0-0

DISP: Moribund Sacrifice

HISTO:

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Adrenal Gland - Medulla	Bone	Bone Marrow	Epididymis
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Lung	Lymph Node	Nose	Pancreas
Parathyroid Gland	Preputial Gland	Salivary Glands	Skin
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder			

**OBSERVATIONS**

Adrenal Gland	Cortex	Vacuolization Cytoplasmic	Mild
Brain		Compression	
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Moderate
Liver	Bile Duct	Hyperplasia	Moderate
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Pituitary Gland	Pars Distalis	Adenoma	
Note: [ ADENOMA ] TGLs = 1-7			
Prostate		Inflammation	Chronic Active, Moderate
		Metaplasia	Squamous, Mild
Spleen		Leukemia Mononuclear	
Testes	Bilateral, Interstit Cell	Adenoma	
	Interstit Cell	Hyperplasia	Mild
Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

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Animal Note: MORIBUND SACRIFICE DUE TO PITUITARY TUMOR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:05

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8008

TRT#: 1

SEX: Male

DAY ON TEST: 555

DOSE: 0 PPM 0-0

DISP: Natural Death

HISTO:

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Epididymis	Esophagus	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Lymph Node	Nose
Pancreas	Parathyroid Gland	Preputial Gland	Prostate
Salivary Glands	Skin	Spleen	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	Urinary Bladder

**AUTO PRECLUDES DIAG.**

Thyroid Gland

**OBSERVATIONS**

Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Mild
Liver	Bile Duct	Hyperplasia	Mild
Lung	Interstitium	Inflammation	Chronic Active, Moderate
Note: [ INFLAMMATION ] TGLs = 2-3			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Pituitary Gland	Pars Distalis	Hyperplasia	Mild
Testes	Bilateral, Interstit Cell	Adenoma	
Note: [ ADENOMA ] TGLs = 1-10			

PRIMARY CAUSE OF DEATH

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Animal Note: CAUSE OF DEATH UNDETERMINED

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:05

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8009

TRT#: 1

SEX: Male

DAY ON TEST: 728

DOSE: 0 PPM 0-0

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Brain	Epididymis
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Lung	Lymph Node	Nose	Parathyroid Gland
Prostate	Skin	Spleen	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	Urinary Bladder

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Medulla	Hyperplasia	Mild
	Cortex	Hypertrophy	Mild
Blood			
Note: Schwannoma Mal Mild			
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Moderate
Liver		Basophilic Focus	Mild
		Degeneration	Cystic, Mild
		Eosinophilic Focus	Minimal
	Bile Duct	Hyperplasia	Moderate
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Mild
Pituitary Gland	Pars Distalis	Adenoma	
Preputial Gland		Inflammation	Chronic Active, Mild
Salivary Glands		Schwannoma Malignant	
Testes	Bilateral, Interstit Cell	Adenoma	
Note: [ ADENOMA ] TGLs = 2-11			
Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Mild
	Follicular Cel	Hypertrophy	Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:05

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8009

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:** 728

**DOSE:** 0 PPM 0-0

**DISP:** Terminal Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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PRIMARY CAUSE OF DEATH

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Animal Note: TGL1-10, TESTIS WITHIN NORMAL LIMITS

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:05

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8010

TRT#: 1

SEX: Male

DAY ON TEST: 706

DOSE: 0 PPM 0-0

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Brain	Epididymis	Esophagus
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Nose
Pancreas	Parathyroid Gland	Prostate	Salivary Glands
Skin	Stomach - Glandular	Thymus	Trachea

OBSERVATIONS

Adrenal Gland	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
	Medulla	Pheochromocytoma Benign	
	Medulla	Pheochromocytoma Malignant	
Note: [ PHEOCHROM MAL ] TGLs = 2-12			
Bone Marrow	Femoral	Leukemia Mononuclear	
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Moderate
Liver	Bile Duct	Hyperplasia	Moderate
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Moderate
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Mild
Pituitary Gland	Pars Distalis	Adenoma	
	Pars Distalis	Hyperplasia	Mild
Spleen		Leukemia Mononuclear	
Note: [ LEUKEMIA MONUC ] TGLs = 1-11			
Stomach	Forestomach	Cyst Epithelial Inclusion	
Testes	Bilateral, Interstit Cell	Adenoma	
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

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Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:05

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8011

TRT#: 1

SEX: Male

DAY ON TEST: 694

DOSE: 0 PPM 0-0

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Brain	Epididymis	Esophagus
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Nose
Pancreas	Parathyroid Gland	Prostate	Salivary Glands
Skin	Stomach - Glandular	Trachea	Urinary Bladder

OBSERVATIONS

Adrenal Gland	Medulla	Hyperplasia	Moderate
	Cortex	Vacuolization Cytoplasmic	Moderate
Bone Marrow	Femoral	Leukemia Mononuclear	
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Moderate
Liver	Bile Duct	Hyperplasia	Marked
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Moderate
Note: [ LEUKEMIA MONUC ] TGLs = 3-4			
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Pituitary Gland	Pars Distalis	Leukemia Mononuclear	
Preputial Gland		Inflammation	Chronic Active, Mild
Spleen		Leukemia Mononuclear	
Note: [ LEUKEMIA MONUC ] TGLs = 2-11			
Stomach	Forestomach	Foreign Body	Minimal
Testes	Bilateral, Interstit Cell	Adenoma	
Note: [ ADENOMA ] TGLs = 1-12			
Thymus		Leukemia Mononuclear	
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:05

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8012

TRT#: 1

SEX: Male

DAY ON TEST: 728

DOSE: 0 PPM 0-0

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Nose	Parathyroid Gland	Pituitary Gland	Prostate
Salivary Glands	Skin	Stomach - Forestomach	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
Epididymis		Mesothelioma Malignant	
Heart		Degeneration	Chronic, Moderate
Kidney		Nephropathy	Chronic, Mild
Liver		Degeneration	Cystic, Mild
		Eosinophilic Focus	Moderate
	Bile Duct	Hyperplasia	Moderate
		Hyperplasia	Multifocal, Moderate
		Leukemia Mononuclear	
Note: [ LEUKEMIA MONUC ] TGLs = 3-4			
Note: [ DEGEN ] TGLs = 4-12			
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
	Mediastinal	Leukemia Mononuclear	
Note: [ LEUKEMIA MONUC ] TGLs = 2-2			
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Mild
Preputial Gland		Inflammation	Chronic Active, Mild
Spleen		Leukemia Mononuclear	
Note: [ LEUKEMIA MONUC ] TGLs = 1-11			
Testes	Bilateral, Interstit Cell	Adenoma	
Note: [ ADENOMA ] TGLs = 5-10			
Thyroid Gland	C Cell	Adenoma	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:05

**First Dose M/F:** NA / NA

**Lab:** BAT

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<b>ANIMAL ID:</b> 8012	<b>TRT#:</b> 1 <b>DOSE:</b> 0 PPM 0-0	<b>SEX:</b> Male <b>DISP:</b> Terminal Sacrifice	<b>DAY ON TEST:</b> 728 <b>HISTO:</b>
<b>ORGAN AND ACCOUNTABLE SITE STATUS</b>			
	C Cell	Hyperplasia	Mild
<b>PRIMARY CAUSE OF DEATH</b>	-		

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:05

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8013

TRT#: 1

SEX: Male

DAY ON TEST: 710

DOSE: 0 PPM 0-0

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Brain	Epididymis	Esophagus
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Nose
Parathyroid Gland	Prostate	Salivary Glands	Skin
Stomach - Forestomach	Stomach - Glandular	Trachea	Urinary Bladder

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
Bone Marrow	Femoral	Leukemia Mononuclear	
Heart		Degeneration	Chronic, Moderate
Kidney		Leukemia Mononuclear	
		Nephropathy	Chronic, Moderate
Liver	Bile Duct	Hyperplasia	Marked
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Moderate
Note: [ LEUKEMIA MONUC ] TGLs = 4-4,5-4			
Lung		Leukemia Mononuclear	
Lymph Node	Inguinal	Leukemia Mononuclear	
	Mandibular	Leukemia Mononuclear	
	Mediastinal	Leukemia Mononuclear	
Note: [ LEUKEMIA MONUC ] TGLs = 6-7,7-12			
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Mild
Pituitary Gland	Pars Distalis	Hyperplasia	Mild
	Pars Distalis	Leukemia Mononuclear	
Preputial Gland		Adenoma	
		Inflammation	Chronic Active, Moderate
Note: [ ADENOMA ] TGLs = 1-14			
Spleen		Leukemia Mononuclear	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:05

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8013

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:** 710

**DOSE:** 0 PPM 0-0

**DISP:** Moribund Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

Note: [ LEUKEMIA MONUC ] TGLs = 3-11

Testes  
Bilateral, Interstit Cell  
Interstit Cell

Adenoma  
Hyperplasia

Mild

Note: [ ADENOMA ] TGLs = 2-13

Thymus  
Thyroid Gland  
Follicular Cel  
C Cell

Leukemia Mononuclear  
Adenoma  
Hyperplasia

Mild

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**PRIMARY CAUSE OF DEATH**

-

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA

Animal Note: TGL1-14, SKIN LESION IS PREPUTIAL GLAND TUMOR

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:05

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8014

TRT#: 1

SEX: Male

DAY ON TEST: 728

DOSE: 0 PPM 0-0

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Epididymis	Esophagus	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Lung	Lymph Node
Nose	Parathyroid Gland	Prostate	Salivary Glands
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder			

OBSERVATIONS

Heart		Degeneration	Chronic, Moderate
Kidney		Nephropathy	Chronic, Mild
Liver		Basophilic Focus	Minimal
		Degeneration	Cystic, Mild
	Bile Duct	Hyperplasia	Mild
		Leukemia Mononuclear	
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Mild
Pituitary Gland	Pars Distalis	Cyst	
Note: [ CYST ] TGLs = 4-7			
Preputial Gland		Inflammation	Chronic Active, Mild
Skin	Subcut Tiss	Fibroma	
Note: [ FIBROMA ] TGLs = 1-11			
Spleen		Leukemia Mononuclear	
Testes	Bilateral, Interstit Cell	Adenoma	
Note: [ ADENOMA ] TGLs = 2-10			
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: TISSUE MASS BODY DORSAL IS AXILLARY SKIN MASS

Animal Note: TGL3-10, TESTIS WITHIN NORMAL LIMITS

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:05

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8014

**TRT#:** 1

**DOSE:** 0 PPM 0-0

**SEX:** Male

**DISP:** Terminal Sacrifice

**DAY ON TEST:** 728

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:05

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8015

TRT#: 1

DOSE: 0 PPM 0-0

SEX: Male

DISP: Terminal Sacrifice

DAY ON TEST: 728

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Nose	Pancreas	Parathyroid Gland
Pituitary Gland	Prostate	Salivary Glands	Skin
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder			

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
Heart		Degeneration	Chronic, Moderate
Kidney		Hydronephrosis	Marked
	Medulla	Nephropathy	Chronic, Mild
		Sarcoma	
Note: [ SARCOMA ] TGLs = 4-13 [ Nephropathy TGLS = 4-13 ]			
Liver	Bile Duct	Basophilic Focus	Moderate
		Hyperplasia	Moderate
		Leukemia Mononuclear	
Lung		Alveolar/Bronchiolar Adenoma	
[ Alveolar/Bronchiolar Adenoma TGLS = 5-2 ]			
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Mild
Preputial Gland		Carcinoma	
		Inflammation	Chronic Active, Mild
Note: [ CARCINOMA ] TGLs = 1-11			
Spleen		Leukemia Mononuclear	
Note: [ LEUKEMIA MONUC ] TGLs = 3-12			
Testes	Bilateral, Interstit Cell	Adenoma	
Note: [ ADENOMA ] TGLs = 2-10			
Thyroid Gland	C Cell	Adenoma	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:05

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8015

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:** 728

**DOSE:** 0 PPM 0-0

**DISP:** Terminal Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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C Cell

Hyperplasia

Mild

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**PRIMARY CAUSE OF DEATH**

-

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Animal Note: TGL6-14, NOT A SIGNIFICANT LESION AT GASTRIC JUNCTION

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\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:05

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8016

TRT#: 1

SEX: Male

DAY ON TEST: 651

DOSE: 0 PPM 0-0

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Epididymis	Esophagus	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Lung	Lymph Node
Nose	Pancreas	Parathyroid Gland	Pituitary Gland
Preputial Gland	Prostate	Salivary Glands	Spleen
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder			

OBSERVATIONS

Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Mild
Liver		Basophilic Focus	Moderate
	Bile Duct	Hyperplasia	Mild
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Skin	Subcut Tiss	Fibroma	
Note: [ FIBROMA ] TGLs = 2-12			
Testes	Interstit Cell	Adenoma	
	Interstit Cell	Hyperplasia	Mild
Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Mild
Zymbal's Gland		Carcinoma	
Note: [ CARCINOMA ] TGLs = 1-11			

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO ZYMBALS GLAND TUMOR

Animal Note: TGL1-11, SKIN MASS FROM FACE IS ZYMBALS GLAND TUMOR

Animal Note: TGL2-12, MASS RECORDED AS MAMMARY TUMOR IS SKIN MASS

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:05

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8017

TRT#: 1

SEX: Male

DAY ON TEST: 671

DOSE: 0 PPM 0-0

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Brain	Epididymis	Esophagus
Intestine Large - Cecum	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Lymph Node	Nose
Pancreas	Parathyroid Gland	Pituitary Gland	Salivary Glands
Skin	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder		

OBSERVATIONS

Adrenal Gland	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
	Medulla	Pheochromocytoma Benign	
	Cortex	Vacuolization Cytoplasmic	Mild
Note: [ PHEOCHROM BGN ] TGLs = 4-7			
Bone Marrow	Femoral	Leukemia Mononuclear	
Heart		Degeneration	Chronic, Mild
Intestine Large	Colon	Parasite Metazoan	
Kidney		Nephropathy	Chronic, Moderate
Liver		Degeneration	Cystic, Mild
	Bile Duct	Hyperplasia	Marked
		Leukemia Mononuclear	
Note: [ LEUKEMIA MONUC ] TGLs = 2-4,3-4			
Lung		Leukemia Mononuclear	
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Preputial Gland		Inflammation	Chronic Active, Mild
Prostate		Inflammation	Chronic Active, Moderate
		Metaplasia	Squamous, Mild
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-11 ]			
Testes	Bilateral, Interstit Cell	Adenoma	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:05

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8017

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:** 671

**DOSE:** 0 PPM 0-0

**DISP:** Moribund Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

Thyroid Gland

C Cell

Hyperplasia

Mild

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**PRIMARY CAUSE OF DEATH**

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Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:05

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8018

TRT#: 1

SEX: Male

DAY ON TEST: 729

DOSE: 0 PPM 0-0

DISP: Terminal Sacrifice

HISTO:

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lung	Lymph Node	Nose
Pituitary Gland	Prostate	Salivary Glands	Skin
Spleen	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder		

**MISSING**

Parathyroid Gland

**OBSERVATIONS**

Adrenal Gland	Cortex	Hyperplasia	Mild
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Marked
Liver		Basophilic Focus	Mild
	Bile Duct	Hyperplasia	Mild
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Mild
Preputial Gland		Inflammation	Chronic Active, Mild
Testes	Bilateral, Interstit Cell	Adenoma	
Note: [ ADENOMA ] TGLs = 1-10			
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:05

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8019

TRT#: 1

SEX: Male

DAY ON TEST: 699

DOSE: 0 PPM 0-0

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Intestine Large	Intestine Small
Islets, Pancreatic	Nose	Parathyroid Gland	Salivary Glands
Skin	Stomach - Forestomach	Stomach - Glandular	Trachea
Urinary Bladder			

OBSERVATIONS

Adrenal Gland	Cortex	Hypertrophy	Mild
	Cortex	Vacuolization Cytoplasmic	Mild
Heart		Degeneration	Chronic, Moderate
Kidney		Nephropathy	Chronic, Marked
Liver	Bile Duct	Hyperplasia	Moderate
		Leukemia Mononuclear	
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Moderate
Pancreas	Acinus	Atrophy	Mild
Pituitary Gland	Pars Distalis	Adenoma	
	Pars Distalis	Leukemia Mononuclear	
Note: [ ADENOMA ] TGLs = 2-7			
Preputial Gland		Inflammation	Chronic Active, Mild
Prostate		Inflammation	Chronic Active, Marked
		Metaplasia	Squamous, Mild
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-11 ]			
Testes	Interstit Cell	Hyperplasia	Minimal
Thymus		Leukemia Mononuclear	
Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:05

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8019

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:** 699

**DOSE:** 0 PPM 0-0

**DISP:** Moribund Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:05

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8020

TRT#: 1

SEX: Male

DAY ON TEST: 729

DOSE: 0 PPM 0-0

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Epididymis	Esophagus	Intestine Large - Cecum
Intestine Large - Colon	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lung	Lymph Node	Nose
Pancreas	Prostate	Salivary Glands	Skin
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder			

MISSING

Parathyroid Gland

OBSERVATIONS

Heart		Degeneration	Chronic, Moderate
Intestine Large	Rectum	Parasite Metazoan	
Kidney		Leukemia Mononuclear	
		Nephropathy	Chronic, Marked
Liver		Basophilic Focus	Minimal
		Degeneration	Cystic, Mild
		Eosinophilic Focus	Minimal
	Bile Duct	Hyperplasia	Mild
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Pituitary Gland	Pars Distalis	Adenoma	
Preputial Gland		Inflammation	Chronic Active, Mild
Spleen		Leukemia Mononuclear	
Testes	Bilateral, Interstit Cell	Adenoma	
Note: [ ADENOMA ] TGLs = 1-10,2-11,1-11			
Thyroid Gland	C Cell	Adenoma	
	C Cell	Carcinoma	
	C Cell	Hyperplasia	Mild
Note: [ ADENOMA ] TGLs = 3-7			

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:05

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8020

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** 0 PPM 0-0

**DISP:** Terminal Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:05

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8021

TRT#: 1

SEX: Male

DAY ON TEST: 729

DOSE: 0 PPM 0-0

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lung	Lymph Node	Nose
Pancreas	Parathyroid Gland	Prostate	Salivary Glands
Skin	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder		

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Moderate
Liver		Basophilic Focus	Minimal
		Eosinophilic Focus	Minimal
	Bile Duct	Hyperplasia	Moderate
		Leukemia Mononuclear	
Note: [ LEUKEMIA MONUC ] TGLs = 4-4			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Fibroadenoma	
Note: [ FIBROADENOMA ] TGLs = 5-11			
Pituitary Gland	Pars Distalis	Cyst	
Preputial Gland		Hyperplasia	Mild
		Inflammation	Chronic Active, Mild
Spleen		Fibrosis	Mild
		Leukemia Mononuclear	
[ Fibrosis TGLS = 3-12 ]			
[ Leukemia Mononuclear TGLS = 2-12 ]			
Testes	Bilateral, Interstit Cell	Adenoma	
Note: [ ADENOMA ] TGLs = 1-10			
Thyroid Gland	Bilateral, C Cell	Adenoma	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:05

**First Dose M/F:** NA / NA

**Lab:** BAT

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<b>ANIMAL ID:</b> 8021	<b>TRT#:</b> 1 <b>DOSE:</b> 0 PPM 0-0	<b>SEX:</b> Male <b>DISP:</b> Terminal Sacrifice	<b>DAY ON TEST:</b> 729 <b>HISTO:</b>
<b>ORGAN AND ACCOUNTABLE SITE STATUS</b>			
	C Cell	Hyperplasia	Mild
<b>PRIMARY CAUSE OF DEATH</b>	-		
Animal Note: TGL5-11, SKIN MASS IS MAMMARY GLAND TUMOR			

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:05

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8022

TRT#: 1

SEX: Male

DAY ON TEST: 729

DOSE: 0 PPM 0-0

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Epididymis	Esophagus	Intestine Large - Cecum
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Nose	Pituitary Gland	Prostate
Salivary Glands	Skin	Stomach - Forestomach	Stomach - Glandular
Trachea	Urinary Bladder		

MISSING

Parathyroid Gland	Thymus
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OBSERVATIONS

Heart		Degeneration	Chronic, Mild
Intestine Large	Colon	Parasite Metazoan	
Kidney		Nephropathy	Chronic, Mild
Liver		Basophilic Focus	Marked
		Degeneration	Cystic, Mild
		Eosinophilic Focus	Mild
	Bile Duct	Hyperplasia	Mild
		Hyperplasia	Multifocal, Moderate
		Leukemia Mononuclear	
Note: [ LEUKEMIA MONUC ] TGLs = 5-14			
Lung		Leukemia Mononuclear	
Lymph Node	Inguinal	Leukemia Mononuclear	
Note: MANDIBULAR LN NORMAL			
Note: [ LEUKEMIA MONUC ] TGLs = 2-12			
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Mild
Preputial Gland		Carcinoma	
Note: [ CARCINOMA ] TGLs = 1-11			
Spleen		Leukemia Mononuclear	
Note: [ LEUKEMIA MONUC ] TGLs = 4-13			
Testes	Bilateral, Interstit Cell	Adenoma	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:05

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8022

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** 0 PPM 0-0

**DISP:** Terminal Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

Note: [ ADENOMA ] TGLs = 3-10

Thyroid Gland

C Cell

Adenoma

C Cell

Hyperplasia

Mild

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**PRIMARY CAUSE OF DEATH**

-

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Animal Note: TGL2-12, SKIN MASS IS INGUINAL LN ND WITH LEUKEMIA

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:05

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8023

TRT#: 1

SEX: Male

DAY ON TEST: 730

DOSE: 0 PPM 0-0

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Brain	Epididymis
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Lung
Lymph Node	Nose	Pancreas	Parathyroid Gland
Pituitary Gland	Prostate	Salivary Glands	Skin
Spleen	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder		

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Cortex	Hypertrophy	Mild
Heart		Degeneration	Chronic, Moderate
Intestine Large	Rectum	Parasite Metazoan	
Kidney		Nephropathy	Chronic, Moderate
Liver		Eosinophilic Focus	Minimal
	Bile Duct	Hyperplasia	Moderate
		Hyperplasia	Focal, Mild
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Preputial Gland		Inflammation	Chronic Active, Mild
Testes	Bilateral, Interstit Cell	Adenoma	
Note: [ ADENOMA ] TGLs = 1-10			
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:05

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8024

TRT#: 1

SEX: Male

DAY ON TEST: 576

DOSE: 0 PPM 0-0

DISP: Natural Death

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Nose	Pancreas	Parathyroid Gland
Pituitary Gland	Prostate	Salivary Glands	Skin
Spleen	Stomach - Forestomach	Stomach - Glandular	Thymus
Thyroid Gland	Trachea	Urinary Bladder	

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
Heart		Degeneration	Chronic, Moderate
Kidney		Nephropathy	Chronic, Mild
Liver		Degeneration	Cystic, Mild
	Bile Duct	Hyperplasia	Mild
Lung		Osteosarcoma	Metastatic (Uncertain Primary Site)
Note: [ OSTEOSARC ] TGLs = 3-2,3-3			
Lymph Node	Mesenteric	Osteosarcoma	Metastatic (Uncertain Primary Site)
Note: [ OSTEOSARC ] TGLs = 2-11,2-12			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Preputial Gland		Inflammation	Chronic Active, Mild
Testes	Interstit Cell	Adenoma	
	Seminif Tub	Atrophy	Marked
	Seminif Tub	Mineralization	Moderate
Note: [ ATROPHY ] TGLs = 1-10			

PRIMARY CAUSE OF DEATH -

Animal Note: PRIMARY NOT FOUND IN WET TISSUE

Animal Note: CAUSE OF DEATH, OSTEOSARCOMA, METASTATIC

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:05

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8025

TRT#: 1

DOSE: 0 PPM 0-0

SEX: Male

DISP: Terminal Sacrifice

DAY ON TEST: 730

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Brain	Epididymis
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Lung	Lymph Node	Nose	Pancreas
Parathyroid Gland	Pituitary Gland	Prostate	Salivary Glands
Skin	Spleen	Stomach - Forestomach	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Medulla	Hyperplasia	Mild
	Cortex	Vacuolization Cytoplasmic	Minimal
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Mild
Liver		Basophilic Focus	Mild
		Degeneration	Cystic, Mild
		Eosinophilic Focus	Minimal
		Hepatocellular Adenoma	
	Bile Duct	Hyperplasia	Moderate
Note: [ HEPATOCLR ADEN ] TGLs = 4-11			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Preputial Gland		Inflammation	Chronic Active, Mild
Testes	Bilateral, Interstit Cell	Adenoma	
Note: [ ADENOMA ] TGLs = 1-10,2-10			
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL3-10, TESTIS WITHIN NORMAL LIMITS

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:05

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8026

TRT#: 1

SEX: Male

DAY ON TEST: 730

DOSE: 0 PPM 0-0

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Brain
Epididymis	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lung	Lymph Node	Nose
Pancreas	Parathyroid Gland	Pituitary Gland	Prostate
Salivary Glands	Spleen	Stomach - Forestomach	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	

OBSERVATIONS

Bone Marrow	Femoral	Hyperplasia	Reticulum Cell, Marked
Heart		Degeneration	Chronic, Moderate
Kidney	Renal Tubule	Carcinoma	
		Nephropathy	Chronic, Mild
Liver		Basophilic Focus	Mild
		Eosinophilic Focus	Minimal
	Bile Duct	Hyperplasia	Mild
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Preputial Gland		Inflammation	Chronic Active, Mild
Skin		Keratoacanthoma	
Note: [ KERATOACANTHOMA ] TGLs = 1-11			
Testes	Bilateral, Interstit Cell	Adenoma	
Note: [ ADENOMA ] TGLs = 2-10			
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL1-11, PREPUTIAL LESION IS REALLY A SKIN LESION

Animal Note: TGL3-10, TESTIS WITHIN NORMAL LIMITS

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:05

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8027

TRT#: 1

SEX: Male

DAY ON TEST: 686

DOSE: 0 PPM 0-0

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Brain	Epididymis
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Lung	Nose	Parathyroid Gland	Prostate
Salivary Glands	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder		

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Cortex	Hypertrophy	Mild
	Medulla	Pheochromocytoma Benign	
Heart		Degeneration	Chronic, Mild
	Kidney	Nephropathy	Chronic, Minimal
Liver		Degeneration	Cystic, Mild
	Bile Duct	Hyperplasia	Moderate
		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Pancreas	Acinus	Atrophy	Mild
Pituitary Gland	Pars Distalis	Cyst	
	Pars Distalis	Hyperplasia	Moderate
Preputial Gland		Inflammation	Chronic Active, Mild
Skin	Subcut Tiss	Leukemia Mononuclear	
		Necrosis	Marked
Note: [ LEUKEMIA MONUC ] TGLs = 2-11			
Note: [ NECROSIS ] TGLs = 2-11			
Spleen		Leukemia Mononuclear	
Note: [ LEUKEMIA MONUC ] TGLs = 1-12			
Testes	Bilateral, Interstit Cell	Adenoma	
Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:05

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8027

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:** 686

**DOSE:** 0 PPM 0-0

**DISP:** Moribund Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

Animal Note: HAIR LOSS DUE TO UNTHRIFTY CONDITION FROM LEUKEMIA

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:05

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8028

TRT#: 1

SEX: Male

DAY ON TEST: 693

DOSE: 0 PPM 0-0

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Brain	Epididymis
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Nose	Parathyroid Gland	Salivary Glands	Skin
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder			

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Mild
Liver	Bile Duct	Hyperplasia	Marked
		Leukemia Mononuclear	
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Pancreas	Acinus	Atrophy	Mild
Pituitary Gland	Pars Distalis	Leukemia Mononuclear	
Preputial Gland		Inflammation	Chronic Active, Mild
Prostate		Inflammation	Chronic Active, Mild
		Metaplasia	Squamous, Mild
Spleen		Leukemia Mononuclear	
		[ Leukemia Mononuclear TGLS = 1-11 ]	
Testes	Bilateral, Interstit Cell	Adenoma	
		Note: [ ADENOMA ] TGLs = 2-10	
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:05

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8029

TRT#: 1

SEX: Male

DAY ON TEST: 730

DOSE: 0 PPM 0-0

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Brain	Epididymis
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Lung	Lymph Node	Nose	Pancreas
Parathyroid Gland	Pituitary Gland	Prostate	Salivary Glands
Skin	Spleen	Stomach - Forestomach	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Medulla	Hyperplasia	Mild
	Cortex	Hypertrophy	Mild
	Medulla	Pheochromocytoma Benign	
Heart		Degeneration	Chronic, Moderate
Kidney		Nephropathy	Chronic, Moderate
Liver		Basophilic Focus	
	Bile Duct	Hyperplasia	Moderate
		Hyperplasia	Focal, Mild
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Moderate
Testes	Bilateral, Interstit Cell	Adenoma	
Note: [ ADENOMA ] TGLs = 1-10			
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL2-11, SPLEEN WITHIN NORMAL LIMITS ON MICRO

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:05

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8030

TRT#: 1

SEX: Male

DAY ON TEST: 702

DOSE: 0 PPM 0-0

DISP: Natural Death

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Epididymis	Esophagus	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Nose	Pancreas
Parathyroid Gland	Pituitary Gland	Prostate	Salivary Glands
Skin	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder		

OBSERVATIONS

Adrenal Gland	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
Bone Marrow	Femoral	Leukemia Mononuclear	
Brain		Hemorrhage	Moderate
Note: [ HEMORRHAGE ] TGLs = 3-5			
Heart		Degeneration	Chronic, Moderate
Kidney		Nephropathy	Chronic, Mild
Liver		Degeneration	Cystic, Mild
	Bile Duct	Hyperplasia	Marked
		Leukemia Mononuclear	
Note: [ LEUKEMIA MONUC ] TGLs = 2-4			
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Preputial Gland		Inflammation	Chronic Active, Mild
Spleen		Leukemia Mononuclear	
Note: [ LEUKEMIA MONUC ] TGLs = 1-11			
Testes	Bilateral, Interstit Cell	Adenoma	
	Interstit Cell	Hyperplasia	Mild
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: CAUSE OF DEATH LEUKEMIA MONONUCLEAR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8031

TRT#: 1

DOSE: 0 PPM 0-0

SEX: Male

DISP: Terminal Sacrifice

DAY ON TEST: 731

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Lung	Lymph Node	Nose	Parathyroid Gland
Prostate	Salivary Glands	Skin	Spleen
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder			

OBSERVATIONS

Adrenal Gland	Medulla	Pheochromocytoma Benign	
Heart		Degeneration	Chronic, Mild
Islets, Pancreatic		Adenoma	
Kidney		Nephropathy	Chronic, Mild
Liver		Basophilic Focus	Minimal
		Eosinophilic Focus	Minimal
	Bile Duct	Hyperplasia	Moderate
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Mild
Pituitary Gland	Pars Distalis	Adenoma	
Note: [ ADENOMA ] TGLs = 5-7			
Preputial Gland		Inflammation	Chronic Active, Marked
Note: [ INFLAMMATION ] TGLs = 4-11			
Testes	Bilateral, Interstit Cell	Adenoma	
Note: [ ADENOMA ] TGLs = 1-10,3-10			
Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL4-11, BODY MASS VENTRAL IS PREPUTIAL GLAND

Animal Note: TGL2-10, TESTIS WITHIN NORMAL LIMITS

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:06

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8031

**TRT#:** 1

**DOSE:** 0 PPM 0-0

**SEX:** Male

**DISP:** Terminal Sacrifice

**DAY ON TEST:** 731

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8032

TRT#: 1

DOSE: 0 PPM 0-0

SEX: Male

DISP: Terminal Sacrifice

DAY ON TEST: 731

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Epididymis	Esophagus	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Jejunum
Islets, Pancreatic	Lung	Lymph Node	Pancreas
Parathyroid Gland	Pituitary Gland	Prostate	Salivary Glands
Spleen	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder		

OBSERVATIONS

Heart		Degeneration	Chronic, Mild
Intestine Small	Ileum	Adenocarcinoma	
Note: [ ADENOCARC ] TGLs = 5-13			
Kidney		Nephropathy	Chronic, Mild
Liver		Degeneration	Cystic, Mild
	Bile Duct	Hyperplasia	Moderate
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Nose	Mucosa	Inflammation	Chronic Active, Moderate
Preputial Gland		Inflammation	Chronic Active, Mild
Skin		Keratoacanthoma	
[ Keratoacanthoma TGLS = 1-11 ]			
Testes	Bilateral, Interstit Cell	Adenoma	
Note: [ ADENOMA ] TGLs = 2-10,2-12,4-12			
Thyroid Gland	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL3-10, TESTIS WITHIN NORMAL LIMITS

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8033

TRT#: 1

SEX: Male

DAY ON TEST: 507

DOSE: 0 PPM 0-0

DISP: Moribund Sacrifice

HISTO:

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Epididymis	Esophagus	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Lung	Lymph Node	Nose
Parathyroid Gland	Peripheral Nerve	Pituitary Gland	Prostate
Salivary Glands	Skin	Spleen	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	

**OBSERVATIONS**

Heart		Degeneration	Chronic, Mild
Islets, Pancreatic		Adenoma	
Kidney		Nephropathy	Chronic, Mild
Liver	Bile Duct	Hyperplasia	Mild
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Pancreas	Acinus	Atrophy	Mild
Spinal Cord	Nerve	Demyelination	Mild
Testes	Bilateral, Interstit Cell	Adenoma	
Thyroid Gland	C Cell	Hyperplasia	Mild
Urinary Bladder		Hemorrhage	Marked
	Mucosa	Ulcer	Moderate

Note: [ HEMORRHAGE ] TGLs = 1-12

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO PARALYZED HIND LEGS

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8034

TRT#: 1

SEX: Male

DAY ON TEST: 731

DOSE: 0 PPM 0-0

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Brain	Epididymis
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Lung	Lymph Node	Nose	Parathyroid Gland
Pituitary Gland	Prostate	Salivary Glands	Skin
Spleen	Stomach - Forestomach	Stomach - Glandular	Trachea
Urinary Bladder			

MISSING

Thymus

OBSERVATIONS

Adrenal Gland	Medulla	Hyperplasia	Mild
	Medulla	Pheochromocytoma Benign	
	Cortex	Vacuolization Cytoplasmic	Minimal
Heart		Degeneration	Chronic, Minimal
Kidney		Nephropathy	Chronic, Mild
Liver		Basophilic Focus	Minimal
		Degeneration	Cystic, Mild
		Eosinophilic Focus	Minimal
	Bile Duct	Hyperplasia	Mild
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Pancreas	Acinus	Atrophy	Mild
Preputial Gland		Adenoma	
Note: [ ADENOMA ] TGLs = 1-10			
Testes	Bilateral, Interstit Cell	Adenoma	
Note: [ ADENOMA ] TGLs = 3-10,3-12,4-12			
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL2-11, 1MM SKIN LESION LOST IN CUTTING

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8035

TRT#: 1

SEX: Male

DAY ON TEST: 731

DOSE: 0 PPM 0-0

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Epididymis	Esophagus	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Lymph Node	Nose	Parathyroid Gland
Pituitary Gland	Prostate	Salivary Glands	Skin
Spleen	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder		

OBSERVATIONS

Heart		Degeneration	Chronic, Mild
Islets, Pancreatic		Hyperplasia	Moderate
Note: [ HYPERPLASIA ] TGLs = 2-11			
Kidney		Nephropathy	Chronic, Mild
Liver		Eosinophilic Focus	Minimal
	Bile Duct	Hyperplasia	Moderate
Lung		Alveolar/Bronchiolar Adenoma	
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Mild
	Acinus	Hyperplasia	Moderate
Note: [ HYPERPLASIA ] TGLs = 2-11			
Preputial Gland		Adenoma	
		Inflammation	Chronic Active, Moderate
Testes	Bilateral, Interstit Cell	Adenoma	
Note: [ ADENOMA ] TGLs = 1-12			
Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL2-11, THIS IS NOT PANCREATIC LN, BUT LESION OF PANCREAS

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8036

TRT#: 1

SEX: Male

DAY ON TEST: 734

DOSE: 0 PPM 0-0

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Brain	Epididymis
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Lung
Lymph Node	Nose	Pancreas	Parathyroid Gland
Pituitary Gland	Prostate	Salivary Glands	Skin
Spleen	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder		

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Medulla	Hyperplasia	Mild
Heart		Degeneration	Chronic, Moderate
Islets, Pancreatic		Carcinoma	
Note: [ CARCINOMA ] TGLs = 2-12			
Kidney		Nephropathy	Chronic, Moderate
Liver		Eosinophilic Focus	Minimal
	Bile Duct	Hyperplasia	Moderate
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Preputial Gland		Inflammation	Chronic Active, Marked
	Duct	Squamous Cell Papilloma	
Note: [ PAPILLOMA SQUA ] TGLs = 1-11			
Testes	Bilateral, Interstit Cell	Adenoma	
Note: [ ADENOMA ] TGLs = 3-10			
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL1-11, TISSUE MASS VENTRAL IS PREPUTIAL GLAND LESION

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8037

TRT#: 1

SEX: Male

DAY ON TEST: 734

DOSE: 0 PPM 0-0

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Esophagus	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Lung	Lymph Node	Nose
Parathyroid Gland	Salivary Glands	Skin	Spleen
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder			

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Medulla	Pheochromocytoma Benign	
	Cortex	Vacuolization Cytoplasmic	Mild
Brain		Compression	
Epididymis	Serosa	Mesothelioma Benign	
Heart		Degeneration	Chronic, Mild
Islets, Pancreatic		Carcinoma	
Kidney		Nephropathy	Chronic, Mild
Liver		Basophilic Focus	Mild
	Bile Duct	Hyperplasia	Mild
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Mild
Pituitary Gland	Pars Distalis	Adenoma	
Note: [ ADENOMA ] TGLs = 4-7			
Preputial Gland		Inflammation	Chronic Active, Moderate
Prostate		Inflammation	Chronic Active, Mild
		Metaplasia	Squamous, Mild
Testes	Interstitial Cell	Adenoma	
	Seminif Tub	Atrophy	Moderate
	Tunic	Mesothelioma Benign	
Note: [ MESOTHELIO BGN ] TGLs = 82			

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:06

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8037

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:** 734

**DOSE:** 0 PPM 0-0

**DISP:** Terminal Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

Note: [ ATROPHY ] TGLs = 2-10

Note: [ MESOTHELIO BGN ] TGLs = 3-10,3-11

Note: [ ADENOMA ] TGLs = 1-11

Thyroid Gland

C Cell

Adenoma

C Cell

Hyperplasia

Mild

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**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8038

TRT#: 1

SEX: Male

DAY ON TEST: 734

DOSE: 0 PPM 0-0

DISP: Terminal Sacrifice

HISTO:

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Epididymis	Esophagus	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Lung	Lymph Node
Nose	Parathyroid Gland	Pituitary Gland	Prostate
Salivary Glands	Skin	Spleen	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	Urinary Bladder

**OBSERVATIONS**

Heart		Degeneration	Chronic, Moderate
Kidney		Nephropathy	Chronic, Mild
Liver		Basophilic Focus	Minimal
		Degeneration	Cystic, Mild
		Eosinophilic Focus	Minimal
	Bile Duct	Hyperplasia	Mild
Note: [ DEGEN ] TGLs = 3-11			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Mild
Preputial Gland		Inflammation	Chronic Active, Mild
Testes	Bilateral, Interstit Cell	Adenoma	
Note: [ ADENOMA ] TGLs = 1-10,2-10			
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8039

TRT#: 1

SEX: Male

DAY ON TEST: 657

DOSE: 0 PPM 0-0

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Epididymis	Esophagus	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Lung	Lymph Node
Nose	Pancreas	Parathyroid Gland	Peripheral Nerve
Preputial Gland	Salivary Glands	Stomach - Forestomach	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	

OBSERVATIONS

Heart		Degeneration	Chronic, Moderate
Kidney		Nephropathy	Chronic, Minimal
Liver		Basophilic Focus	Mild
	Bile Duct	Hyperplasia	Mild
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Pituitary Gland	Pars Distalis	Adenoma	
Prostate		Inflammation	Chronic Active, Mild
		Metaplasia	Squamous, Mild
Skin	Subcut Tiss	Fibrosarcoma	
[ Fibrosarcoma TGLS = 2-13,2-14 ]			
Spinal Cord	Nerve	Demyelination	Mild
Spleen		Hematopoietic Cell Proliferation	Moderate
Note: [ HEMA CELL PROL ] TGLs = 1-12			
Testes	Bilateral, Interstit Cell	Adenoma	
Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO LARGE FIBROSARCOMA ON LEG

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8040

TRT#: 1

SEX: Male

DAY ON TEST: 676

DOSE: 0 PPM 0-0

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Epididymis	Esophagus
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Lung
Lymph Node	Nose	Pancreas	Parathyroid Gland
Salivary Glands	Skin	Spleen	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	Urinary Bladder

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Medulla	Hyperplasia	Mild
Brain		Compression	
Heart		Degeneration	Chronic, Moderate
Kidney		Nephropathy	Chronic, Marked
Liver		Basophilic Focus	Mild
		Degeneration	Cystic, Mild
	Bile Duct	Hyperplasia	Mild
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Moderate
Pituitary Gland	Pars Distalis	Adenoma	
	Pars Distalis	Hyperplasia	Mild
Note: [ ADENOMA ] TGLs = 1-7			
Preputial Gland		Inflammation	Chronic Active, Mild
Prostate		Inflammation	Chronic Active, Mild
		Metaplasia	Squamous, Mild
Testes	Bilateral, Interstit Cell	Adenoma	
	Interstit Cell	Hyperplasia	Mild
Note: [ ADENOMA ] TGLs = 3-10			
Thyroid Gland	C Cell	Hyperplasia	Mild
	Follicular Cel	Hypertrophy	Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:06

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8040

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:** 676

**DOSE:** 0 PPM 0-0

**DISP:** Moribund Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

Animal Note: TGL2-10, NO NODULE PRESENT ON PREPUTIAL GLAND

Animal Note: MORIBUND SACRIFICE DUE TO PITUITARY TUMOR

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8041

TRT#: 1

SEX: Male

DAY ON TEST: 734

DOSE: 0 PPM 0-0

DISP: Terminal Sacrifice

HISTO:

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lung	Lymph Node	Nose
Parathyroid Gland	Pituitary Gland	Prostate	Salivary Glands
Spleen	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder		

**OBSERVATIONS**

Adrenal Gland	Cortex	Hyperplasia	Mild
Heart		Degeneration	Chronic, Moderate
Kidney		Nephropathy	Chronic, Moderate
Liver		Basophilic Focus	Minimal
		Eosinophilic Focus	Minimal
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Mild
	Acinus	Hyperplasia	Mild
Preputial Gland		Inflammation	Chronic Active, Mild
Skin	Subcut Tiss	Fibroma	Multiple
Note: [ FIBROMA ] TGLs = 1-11,2-12,5-13			
Testes	Bilateral, Interstit Cell	Adenoma	
	Interstit Cell	Hyperplasia	Mild
Note: [ ADENOMA ] TGLs = 3-10,4-10			
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL4-10, TESTIS WITHIN NORMAL LIMITS

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8042

TRT#: 1

DOSE: 0 PPM 0-0

SEX: Male

DISP: Terminal Sacrifice

DAY ON TEST: 735

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Brain	Epididymis	Esophagus
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Lung
Nose	Pituitary Gland	Prostate	Salivary Glands
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder			

MISSING

Parathyroid Gland

OBSERVATIONS

Adrenal Gland	Cortex	Hypertrophy	Moderate
	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
Bone Marrow	Femoral	Leukemia Mononuclear	
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Moderate
Liver		Basophilic Focus	Minimal
	Bile Duct	Hyperplasia	Mild
		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Minimal
Preputial Gland		Carcinoma	
Note: [ CARCINOMA ] TGLs = 2-13			
Skin	Subcut Tiss	Fibroma	
Note: [ FIBROMA ] TGLs = 1-11			
Spleen		Leukemia Mononuclear	
Note: [ LEUKEMIA MONUC ] TGLs = 4-12			
Testes	Bilateral, Interstit Cell	Adenoma	
Note: [ ADENOMA ] TGLs = 3-10			
Thyroid Gland	C Cell	Adenoma	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:06

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8042

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:** 735

**DOSE:** 0 PPM 0-0

**DISP:** Terminal Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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C Cell

Hyperplasia

Mild

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**PRIMARY CAUSE OF DEATH**

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Animal Note: TGL2-13, SKIN MASS PENIS, IS PREPUTIAL GLAND LESION

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8043

TRT#: 1

SEX: Male

DAY ON TEST: 735

DOSE: 0 PPM 0-0

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Brain	Epididymis
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Nose	Pancreas	Prostate	Salivary Glands
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder			

MISSING

Parathyroid Gland

OBSERVATIONS

Adrenal Gland	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
	Medulla	Pheochromocytoma Benign	
	Cortex	Vacuolization Cytoplasmic	Minimal
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Moderate
Liver		Basophilic Focus	Minimal
		Degeneration	Cystic, Moderate
	Bile Duct	Hyperplasia	Moderate
		Leukemia Mononuclear	
Note: [ LEUKEMIA MONUC ]			TGLs = 6-4
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Moderate
Pituitary Gland	Pars Distalis	Adenoma	
Note: [ ADENOMA ]			TGLs = 7-7
Preputial Gland		Hyperplasia	Mild
Note: [ HYPERPLASIA ]			TGLs = 4-12
Skin	Subcut Tiss	Fibrosis	Mild
Note: [ FIBROSIS ]			TGLs = 4-12
Spleen		Leukemia Mononuclear	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:06

**First Dose M/F:** NA / NA

**Lab:** BAT

---

**ANIMAL ID:** 8043

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:** 735

**DOSE:** 0 PPM 0-0

**DISP:** Terminal Sacrifice

**HISTO:**

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

Note: [ LEUKEMIA MONUC ] TGLs = 5-11

Testes Bilateral, Interstit Cell

Adenoma

Note: [ ADENOMA ] TGLs = 1-10,2-10,3-10

Thyroid Gland C Cell

Hyperplasia

Mild

---

**PRIMARY CAUSE OF DEATH**

-

Animal Note: TGL4-12, LESION BODY VENTRAL IS PREPUTIAL GLAND LESION

Animal Note: TGL2-10, CYSTS ARE PART OF ADENOMA

Animal Note: TGL4-12, LESION BODY VENTRAL IS PREPUTIAL LESION

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8044

TRT#: 1

SEX: Male

DAY ON TEST: 505

DOSE: 0 PPM 0-0

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Brain	Epididymis	Esophagus
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Nose
Pancreas	Parathyroid Gland	Prostate	Salivary Glands
Skin	Stomach - Glandular	Trachea	Urinary Bladder

MISSING

Thymus

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Medulla	Hyperplasia	Moderate
Bone Marrow	Femoral	Leukemia Mononuclear	
Heart		Degeneration	Chronic, Mild
Kidney		Leukemia Mononuclear	
		Nephropathy	Chronic, Mild
Liver	Bile Duct	Hyperplasia	Moderate
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Moderate
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Hemorrhage	Marked
	Mandibular	Leukemia Mononuclear	
Note: [ HEMORRHAGE ] TGLs = 1-11			
Pituitary Gland	Pars Distalis	Hyperplasia	Moderate
Preputial Gland		Inflammation	Chronic Active, Mild
Spleen		Leukemia Mononuclear	
Stomach	Forestomach	Leukemia Mononuclear	
Testes	Bilateral, Interstit Cell	Adenoma	
Note: [ ADENOMA ] TGLs = 2-12			
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)

**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:06

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8044

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:** 505

**DOSE:** 0 PPM 0-0

**DISP:** Moribund Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

Animal Note: TGL1-11, SALIVARY GLAND IS REALLY MANDIBULAR LYMPH NODE

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8045

TRT#: 1

SEX: Male

DAY ON TEST: 735

DOSE: 0 PPM 0-0

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Brain	Epididymis
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Lymph Node	Nose	Parathyroid Gland	Prostate
Salivary Glands	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder		

OBSERVATIONS

Adrenal Gland	Medulla	Hyperplasia	Mild
	Cortex	Vacuolization Cytoplasmic	Mild
Heart		Degeneration	Chronic, Minimal
Kidney		Nephropathy	Chronic, Mild
Liver	Bile Duct	Hyperplasia	Moderate
		Leukemia Mononuclear	
Lung		Leukemia Mononuclear	
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Moderate
Pancreas	Acinus	Atrophy	Mild
Pituitary Gland	Pars Distalis	Leukemia Mononuclear	
Preputial Gland		Inflammation	Chronic Active, Mild
Skin	Subcut Tiss	Fibroma	
Note: [ FIBROMA ] TGLs = 1-13			
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 3-12 ]			
Testes	Bilateral, Interstit Cell	Adenoma	
Note: [ ADENOMA ] TGLs = 2-11			
Thyroid Gland	C Cell	Hyperplasia	Minimal

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8046

TRT#: 1

SEX: Male

DAY ON TEST: 736

DOSE: 0 PPM 0-0

DISP: Terminal Sacrifice

HISTO:

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Epididymis	Esophagus	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Lung	Nose
Pancreas	Parathyroid Gland	Preputial Gland	Prostate
Salivary Glands	Skin	Stomach - Forestomach	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	

**OBSERVATIONS**

Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Mild
Liver		Basophilic Focus	Minimal
		Eosinophilic Focus	Minimal
	Bile Duct	Hyperplasia	Moderate
		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Mild
Pituitary Gland	Pars Distalis	Hyperplasia	Mild
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 2-11 ]			
Testes	Bilateral, Interstit Cell	Adenoma	
Note: [ ADENOMA ] TGLs = 1-10			
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8047

TRT#: 1

SEX: Male

DAY ON TEST: 736

DOSE: 0 PPM 0-0

DISP: Terminal Sacrifice

HISTO:

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Bone	Bone Marrow	Brain	Epididymis
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Nose
Parathyroid Gland	Salivary Glands	Skin	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	Urinary Bladder

**OBSERVATIONS**

Adrenal Gland	Medulla	Pheochromocytoma Benign	
	Cortex	Vacuolization Cytoplasmic	Mild
Heart		Degeneration	Chronic, Moderate
Intestine Large	Colon	Parasite Metazoan	
Islets, Pancreatic		Adenoma	
Kidney		Nephropathy	Chronic, Mild
Liver		Basophilic Focus	Minimal
		Degeneration	Cystic, Mild
	Bile Duct	Hyperplasia	Moderate
		Leukemia Mononuclear	
Note: [ LEUKEMIA MONUC ] TGLs = 6-4			
Lung	Alveolar Epith	Hyperplasia	Moderate
	Interstitial	Inflammation	Chronic Active, Moderate
Note: [ HYPERPLASIA ] TGLs = 7-2			
[ Hyperplasia TGLS = 7-2 ]			
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Moderate
Pancreas	Acinus	Atrophy	Mild
Pituitary Gland	Pars Distalis	Hyperplasia	Moderate
Note: [ HYPERPLASIA ] TGLs = 5-7			
Preputial Gland		Adenoma	
		Inflammation	Chronic Active, Mild
Note: [ ADENOMA ] TGLs = 1-11			
Prostate		Inflammation	Chronic Active, Moderate

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8047

TRT#: 1

SEX: Male

DAY ON TEST: 736

DOSE: 0 PPM 0-0

DISP: Terminal Sacrifice

HISTO:

**ORGAN AND ACCOUNTABLE SITE STATUS**

Spleen		Metaplasia	Squamous, Mild
[ Leukemia Mononuclear TGLS = 2-12 ]		Leukemia Mononuclear	
Testes	Interstit Cell	Adenoma	
Note: [ ADENOMA ] TGLs = 3-10	Seminif Tub	Atrophy	Moderate
Note: [ ATROPHY ] TGLs = 4-10			
Thyroid Gland	C Cell	Hyperplasia	Mild
PRIMARY CAUSE OF DEATH	-		

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8048

TRT#: 1

SEX: Male

DAY ON TEST: 736

DOSE: 0 PPM 0-0

DISP: Terminal Sacrifice

HISTO:

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Adrenal Gland - Cortex	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lung	Lymph Node	Nose
Parathyroid Gland	Prostate	Salivary Glands	Spleen
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder			

**OBSERVATIONS**

Adrenal Gland	Medulla	Hyperplasia	Mild
Heart		Degeneration	Chronic, Moderate
Kidney		Nephropathy	Chronic, Mild
Liver		Basophilic Focus	Minimal
		Eosinophilic Focus	Minimal
	Bile Duct	Hyperplasia	Mild
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Pancreas	Acinus	Atrophy	Mild
Pituitary Gland	Pars Distalis	Hyperplasia	Mild
Note: [ HYPERPLASIA ] TGLs = 4-7			
Preputial Gland	Duct	Dilatation	Moderate
Note: [ DILATATION ] TGLs = 2-10			
Skin		Squamous Cell Papilloma	
Note: [ PAPILOMA SQUA ] TGLs = 1-11			
Testes	Bilateral, Interstit Cell	Adenoma	
Note: [ ADENOMA ] TGLs = 3-10			
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL2-10, TISSUE MASS BODY VENTRAL IS PREPUTIAL LESION

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8049

TRT#: 1

SEX: Male

DAY ON TEST: 694

DOSE: 0 PPM 0-0

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Brain	Epididymis
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Nose	Parathyroid Gland	Salivary Glands	Skin
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder			

OBSERVATIONS

Adrenal Gland	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
	Medulla	Pheochromocytoma Benign	
Note: [ PHEOCHROM BGN ] TGLs = 4-7			
Heart		Degeneration	Chronic, Moderate
Kidney		Leukemia Mononuclear	
		Nephropathy	Chronic, Moderate
Liver	Bile Duct	Hyperplasia	Marked
		Leukemia Mononuclear	
Note: [ LEUKEMIA MONUC ] TGLs = 2-4			
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
	Mediastinal	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Moderate
Pancreas	Acinus	Atrophy	Mild
Pituitary Gland	Pars Distalis	Adenoma	
Note: [ ADENOMA ] TGLs = 3-7			
Preputial Gland		Inflammation	Chronic Active, Mild
Prostate		Inflammation	Chronic Active, Mild
		Metaplasia	Squamous, Mild
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLs = 1-11 ]			
Testes	Bilateral, Interstit Cell	Adenoma	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:06

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8049

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:** 694

**DOSE:** 0 PPM 0-0

**DISP:** Moribund Sacrifice

**HISTO:**

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

Thyroid Gland

C Cell

Hyperplasia

Mild

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**PRIMARY CAUSE OF DEATH**

-

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Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

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\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8050

TRT#: 1

SEX: Male

DAY ON TEST: 571

DOSE: 0 PPM 0-0

DISP: Natural Death

HISTO:

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Epididymis	Esophagus	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Lung	Nose	Parathyroid Gland	Pituitary Gland
Prostate	Salivary Glands	Stomach - Forestomach	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	

**AUTO PRECLUDES DIAG.**

Intestine Large - Cecum	Islets, Pancreatic	Pancreas
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**OBSERVATIONS**

Heart		Degeneration	Chronic, Moderate
Kidney		Nephropathy	Chronic, Mild
Liver		Fibrosarcoma	Metastatic (Skin)
Note: [ FIBROSARC ] TGLs = 81			
Lymph Node	Mesenteric	Fibrosarcoma	Metastatic (Skin)
Note: MANDIBULAR LN NORMAL			
Note: [ FIBROSARC ] TGLs = 1-11			
Preputial Gland		Inflammation	Chronic Active, Moderate
Skin	Subcut Tiss	Fibrosarcoma	
Note: [ FIBROSARC ] TGLs = 3-12			
Spleen		Hematopoietic Cell Proliferation	Mild
Testes	Bilateral, Interstit Cell	Adenoma	
Note: [ ADENOMA ] TGLs = 2-10			
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: CAUSE OF DEATH, LARGE TUMOR ON HIP

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01  
**Test Type:** CHRONIC  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 08:38:06  
**First Dose M/F:** NA / NA  
**Lab:** BAT

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<b>ANIMAL ID:</b> 8051	<b>TRT#:</b> 2	<b>SEX:</b> Male	<b>DAY ON TEST:</b> 727
	<b>DOSE:</b> 0 PPM 10-0	<b>DISP:</b> Terminal Sacrifice	<b>HISTO:</b> 851981

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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**NORMAL**

Stomach - Forestomach	Stomach - Glandular
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**OBSERVATIONS**

Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	
	Bile Duct	Hyperplasia	Moderate
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Minimal
Note: HEPATOCLR ADEN	TGLs = 1-2		
Spleen		Leukemia Mononuclear	
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA	TGLs = 2-3		

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**PRIMARY CAUSE OF DEATH**

-

Animal Note: TGL3-3, TESITS SIZE WITHIN NORMAL LIMITS

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8052

TRT#: 2

SEX: Male

DAY ON TEST: 727

DOSE: 0 PPM 10-0

DISP: Terminal Sacrifice

HISTO: 851982

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Bile Duct

Eosinophilic Focus

Mild

Hyperplasia

Mild

Hypertrophy

Minimal

Leukemia Mononuclear

Vacuolization Cytoplasmic

Mild

Testes

Bilateral, Interstit Cell

Adenoma

Interstit Cell

Hyperplasia

Mild

Note: ADENOMA TGLs = 1-2,2-2

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL3-2, TESTIS SIZE WITHIN NORMAL LIMITS

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01  
**Test Type:** CHRONIC  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 08:38:06  
**First Dose M/F:** NA / NA  
**Lab:** BAT

**ANIMAL ID:** 8053

**TRT#:** 2

**SEX:** Male

**DAY ON TEST:** 727

**DOSE:** 0 PPM 10-0

**DISP:** Terminal Sacrifice

**HISTO:** 851983

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

**OBSERVATIONS**

Liver

Degeneration

Cystic, Mild

Eosinophilic Focus

Mild

Bile Duct

Hyperplasia

Mild

Vacuolization Cytoplasmic

Moderate

Pituitary Gland

Pars Distalis

Adenoma

Note: ADENOMA TGLs = 3-4

Preputial Gland

Adenoma

Note: ADENOMA TGLs = 1-2

Stomach

Glandular

Carcinoid Tumor Malignant

Note: CARCIND TM MAL TGLs = 4-4

Testes

Bilateral, Interstit Cell

Adenoma

Note: ADENOMA TGLs = 2-3

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8054

TRT#: 2

SEX: Male

DAY ON TEST: 728

DOSE: 0 PPM 10-0

DISP: Terminal Sacrifice

HISTO: 851984

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Minimal

Degeneration

Cystic, Mild

Eosinophilic Focus

Mild

Bile Duct

Hyperplasia

Moderate

Vacuolization Cytoplasmic

Mild

Testes

Bilateral, Interstit Cell

Adenoma

Note: ADENOMA

TGLs = 1-2

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL2-2, TESTIS SIZE WITHIN NORMAL LIMITS

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8055

TRT#: 2

SEX: Male

DAY ON TEST: 668

DOSE: 0 PPM 10-0

DISP: Moribund Sacrifice

HISTO: 851985

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Brain	Esophagus
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Lymph Node
Nose	Parathyroid Gland	Salivary Glands	Skin
Spleen	Stomach - Glandular	Thymus	Trachea
Urinary Bladder			

OBSERVATIONS

Adrenal Gland Note: PHEOCHROM CPLX TGLs = 2-12	Medulla	Pheochromocytoma Complex	
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Marked
Liver		Basophilic Focus	Minimal
		Vacuolization Cytoplasmic	Minimal
Lung	Interstitialium	Inflammation	Chronic Active, Moderate
Lymph Node Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Moderate
Mesentery Note: [ MESOTHELIO MAL ] TGLs = 4-11		Mesothelioma Malignant	
Pancreas	Acinus	Atrophy	Moderate
Pituitary Gland Note: ADENOMA TGLs = 3-7	Pars Distalis	Adenoma	
Preputial Gland		Inflammation	Chronic Active, Mild
Prostate		Inflammation	Chronic Active, Mild
Stomach	Forestomach	Acanthosis	Moderate
Testes	Bilateral, Interstit Cell	Adenoma	
	Tunic	Mesothelioma Malignant	Metastatic (Uncertain Primary Site)
Thyroid Gland	C Cell	Hyperplasia	Marked

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO PANCREATIC TUMOR

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)

**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:06

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8055

**TRT#:** 2

**SEX:** Male

**DAY ON TEST:** 668

**DOSE:** 0 PPM 10-0

**DISP:** Moribund Sacrifice

**HISTO:** 851985

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8056

TRT#: 2

SEX: Male

DAY ON TEST: 728

DOSE: 0 PPM 10-0

DISP: Terminal Sacrifice

HISTO: 851986

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Minimal

Eosinophilic Focus

Mild

Bile Duct

Hyperplasia

Marked

Oval Cell

Hyperplasia

Minimal

Leukemia Mononuclear

Note: LEUKEMIA MONUC TGLs = 4-5

Skin

Subcut Tiss

Fibrosarcoma

Note: FIBROSARC TGLs = 1-2

Spleen

Leukemia Mononuclear

[ Leukemia Mononuclear TGLS = 3-3 ]

Testes

Bilateral, Interstit Cell

Adenoma

Note: ADENOMA TGLs = 2-4

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8057

TRT#: 2

SEX: Male

DAY ON TEST: 584

DOSE: 0 PPM 10-0

DISP: Natural Death

HISTO: 851987

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Adrenal Gland - Medulla	Bone Marrow	Brain	Epididymis
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Jejunum	Islets, Pancreatic	Lymph Node
Nose	Pancreas	Parathyroid Gland	Prostate
Salivary Glands	Skin	Spleen	Stomach - Forestomach
Stomach - Glandular	Thymus	Thyroid Gland	Trachea
Urinary Bladder			

**MISSING**

Intestine Small - Ileum

**OBSERVATIONS**

Adrenal Gland	Cortex	Hyperplasia	Mild
Bone	Rib	Osteosarcoma	
Note: OSTEOSARC TGLs = 1-11			
Heart		Degeneration	Chronic, Moderate
Kidney		Nephropathy	Chronic, Mild
Liver		Basophilic Focus	Minimal
	Bile Duct	Hyperplasia	Mild
Lung	Interstitialium	Inflammation	Chronic Active, Moderate
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Pituitary Gland	Pars Distalis	Adenoma	
Preputial Gland		Inflammation	Chronic Active, Mild
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA TGLs = 2-10			

PRIMARY CAUSE OF DEATH

-

Animal Note: CAUSE OF DEATH, BONE TUMOR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8058

TRT#: 2

SEX: Male

DAY ON TEST: 728

DOSE: 0 PPM 10-0

DISP: Terminal Sacrifice

HISTO: 851988

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Kidney

Cortex

Cyst

Nephropathy

Chronic, Marked

Note: NEPHROPATHY TGLs = 4-4

Note: CYST TGLs = 7-4.1

Liver

Basophilic Focus

Minimal

Hepatocellular Adenoma

Bile Duct

Hyperplasia

Moderate

Leukemia Mononuclear

Note: LEUKEMIA MONUC TGLs = 2-6

Note: HEPATOCLR ADEN TGLs = 1-5

Spleen

Leukemia Mononuclear

[ Leukemia Mononuclear TGLS = 3-2 ]

Testes

Bilateral, Interstit Cell

Adenoma

Note: ADENOMA TGLs = 5-3

**PRIMARY CAUSE OF DEATH**

-

Animal Note: TGL5-3, TESTIS SIZE WITHIN NORMAL LIMITS

Animal Note: TGL6-3, TESTIS SIZE WITHIN NORMAL LIMITS. NCL

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8059

TRT#: 2

SEX: Male

DAY ON TEST: 728

DOSE: 0 PPM 10-0

DISP: Terminal Sacrifice

HISTO: 851989

**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Mild

Bile Duct

Hyperplasia

Moderate

Hypertrophy

Minimal

Leukemia Mononuclear

[ Hyperplasia TGLS = 3-3 ]

Spleen

Leukemia Mononuclear

[ Leukemia Mononuclear TGLS = 4-4 ]

Stomach

Forestomach

Squamous Cell Papilloma

[ Squamous Cell Papilloma TGLS = 5-1 ]

Testes

Bilateral, Interstit Cell

Adenoma

[ Adenoma TGLS = 1-2 ]

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL2-2, TESTIS SIZE WITHIN NORMAL LIMITS

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8060

TRT#: 2

SEX: Male

DAY ON TEST: 689

DOSE: 0 PPM 10-0

DISP: Moribund Sacrifice

HISTO: 851990

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Epididymis
Esophagus	Heart	Intestine Large - Colon	Intestine Large - Rectum
Islets, Pancreatic	Lymph Node	Parathyroid Gland	Salivary Glands
Skin	Trachea	Urinary Bladder	

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Cortex	Vacuolization Cytoplasmic	Marked
Brain		Leukemia Mononuclear	
Intestine Large	Cecum	Leukemia Mononuclear	
Intestine Small	Duodenum	Leukemia Mononuclear	
	Ileum	Leukemia Mononuclear	
	Jejunum	Leukemia Mononuclear	
Kidney		Leukemia Mononuclear	
		Nephropathy	Chronic, Mild
Liver		Eosinophilic Focus	
	Bile Duct	Hyperplasia	Moderate
		Hyperplasia	Focal, Moderate
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
		Leukemia Mononuclear	
Lung			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Nose	Mucosa	Inflammation	Chronic Active, Mild
Pancreas		Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 1-11			
Pituitary Gland	Pars Distalis	Cyst	
Preputial Gland		Inflammation	Chronic Active, Mild
Prostate		Leukemia Mononuclear	
Spleen		Leukemia Mononuclear	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:06

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8060

**TRT#:** 2

**SEX:** Male

**DAY ON TEST:** 689

**DOSE:** 0 PPM 10-0

**DISP:** Moribund Sacrifice

**HISTO:** 851990

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Leukemia Mononuclear TGLS = 2-1 ]

Stomach	Forestomach	Leukemia Mononuclear	
	Glandular	Leukemia Mononuclear	
Testes	Bilateral, Interstit Cell	Adenoma	
Thymus		Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 3-12		
Thyroid Gland	C Cell	Hyperplasia	Moderate

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**PRIMARY CAUSE OF DEATH**

-

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8061

TRT#: 2

SEX: Male

DAY ON TEST: 577

DOSE: 0 PPM 10-0

DISP: Moribund Sacrifice

HISTO: 851991

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Epididymis	Esophagus	Heart
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Lung
Lymph Node	Pancreas	Parathyroid Gland	Pituitary Gland
Prostate	Salivary Glands	Skin	Spleen
Stomach - Forestomach	Stomach - Glandular	Trachea	Urinary Bladder

MISSING

Thymus

OBSERVATIONS

Kidney		Nephropathy	Chronic, Mild
Liver		Basophilic Focus	Minimal
	Bile Duct	Hyperplasia	Mild
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Nose	Glands, Submucosa	Adenocarcinoma	
Note: ADENOCARC TGLs = 1-11			
Preputial Gland		Inflammation	Chronic Active, Mild
Testes	Interstit Cell	Adenoma	
Thyroid Gland	Follicular Cel	Carcinoma	
	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SAC DUE TO MALOCLUSION FROM TUMOR IN NOSE

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8062

TRT#: 2

SEX: Male

DAY ON TEST: 729

DOSE: 0 PPM 10-0

DISP: Terminal Sacrifice

HISTO: 851992

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Angiectasis

Mild

Basophilic Focus

Mild

Eosinophilic Focus

Mild

Bile Duct

Hyperplasia

Moderate

Inflammation

Chronic, Multifocal, Mild

Spleen

Leukemia Mononuclear

Testes

Bilateral, Interstit Cell

Adenoma

Note: ADENOMA TGLs = 2-3,3-3

Thyroid Gland

C Cell

Carcinoma

Note: [ CARCINOMA ] TGLs = 1-2

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01  
Test Type: CHRONIC  
Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014  
Time Report Requested: 08:38:06  
First Dose M/F: NA / NA  
Lab: BAT

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ANIMAL ID: 8063	TRT#: 2	SEX: Male	DAY ON TEST: 729
	DOSE: 0 PPM 10-0	DISP: Terminal Sacrifice	HISTO: 851993

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ORGAN AND ACCOUNTABLE SITE STATUS

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NORMAL

Stomach - Forestomach	Stomach - Glandular
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OBSERVATIONS

Liver		Basophilic Focus	Mild
		Clear Cell Focus	Mild
		Degeneration	Cystic, Mild
		Eosinophilic Focus	Mild
	Bile Duct	Hyperplasia	Moderate
		Hypertrophy	Minimal
		Leukemia Mononuclear	
Note: CLEAR CL FOCUS TGLs = 3-4			
Mesentery		Mesothelioma Malignant	
Spleen		Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 1-3			
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA TGLs = 2-2			

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PRIMARY CAUSE OF DEATH

-

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\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8064

TRT#: 2

SEX: Male

DAY ON TEST: 729

DOSE: 0 PPM 10-0

DISP: Terminal Sacrifice

HISTO: 851994

**OBSERVATIONS**

Liver

Eosinophilic Focus  
Hepatocellular Adenoma  
Hyperplasia  
Leukemia Mononuclear

Mild  
Multiple  
Marked

Bile Duct

Note: [ HEPATOCLR ADEN ] TGLs = 5-6,4-7  
[ Hyperplasia TGLS = 6-1 ]

Skin

Face  
Subcut Tiss

Cyst Epithelial Inclusion  
Fibrosarcoma

Note: CYST EPITH INC TGLs = 7-2  
Note: FIBROSARC TGLs = 3-3

Spleen

Leukemia Mononuclear

[ Leukemia Mononuclear TGLS = 2-4 ]

Testes

Bilateral, Interstit Cell

Adenoma

Note: ADENOMA TGLs = 1-5

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8065

TRT#: 2

SEX: Male

DAY ON TEST: 593

DOSE: 0 PPM 10-0

DISP: Natural Death

HISTO: 851995

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Nose	Parathyroid Gland	Salivary Glands
Skin	Spleen	Stomach - Forestomach	Stomach - Glandular
Trachea	Urinary Bladder		

OBSERVATIONS

Adrenal Gland	Cortex	Vacuolization Cytoplasmic	Mild
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Mild
Liver	Bile Duct	Hyperplasia	Moderate
		Lymphoma Malignant Lymphocytic	
		Vacuolization Cytoplasmic	Minimal
Lung		Lymphoma Malignant Lymphocytic	
Lymph Node	Mandibular	Lymphoma Malignant Lymphocytic	
Pancreas	Acinus	Atrophy	Minimal
Pituitary Gland	Pars Distalis	Cyst	
Preputial Gland		Inflammation	Chronic Active, Mild
Prostate		Inflammation	Chronic Active, Minimal
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA	TGLs = 2-11		
Thymus		Lymphoma Malignant Lymphocytic	
Note: LYMPH MAL LYMP	TGLs = 1-2		
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: CAUSE OF DEATH, MALIGNANT LYMPHOMA LYMPHOCYTIC

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8066

TRT#: 2

SEX: Male

DAY ON TEST: 584

DOSE: 0 PPM 10-0

DISP: Moribund Sacrifice

HISTO: 851996

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Epididymis	Esophagus	Heart
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Lung
Lymph Node	Nose	Pancreas	Parathyroid Gland
Pituitary Gland	Prostate	Salivary Glands	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	Urinary Bladder

OBSERVATIONS

Kidney		Nephropathy	Chronic, Mild
Liver	Bile Duct	Hyperplasia Leukemia Mononuclear	Mild
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Preputial Gland		Inflammation	Chronic Active, Moderate
Skin	Subcut Tiss	Fibrosarcoma	
Note: FIBROSARC TGLs = 1-13			
Spleen		Leukemia Mononuclear	
Testes	Interstit Cell	Adenoma	
Note: ADENOMA TGLs = 2-11			
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO SKIN TUMOR

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01  
**Test Type:** CHRONIC  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 08:38:06  
**First Dose M/F:** NA / NA  
**Lab:** BAT

**ANIMAL ID:** 8067

**TRT#:** 2

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** 0 PPM 10-0

**DISP:** Terminal Sacrifice

**HISTO:** 851997

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver		Eosinophilic Focus	Mild
	Bile Duct	Hyperplasia	Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Pituitary Gland	Pars Distalis	Adenoma	
Note: ADENOMA	TGLs = 1-3		
Spleen		Leukemia Mononuclear	
Testes	Seminif Tub	Atrophy	Mild
Note: ATROPHY	TGLs = 2-2		

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8068

TRT#: 2

SEX: Male

DAY ON TEST: 730

DOSE: 0 PPM 10-0

DISP: Terminal Sacrifice

HISTO: 851998

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Minimal

Eosinophilic Focus

Mild

Bile Duct

Hyperplasia

Moderate

Leukemia Mononuclear

Vacuolization Cytoplasmic

Mild

Inflammation

Chronic Active, Moderate

Preputial Gland

Note: INFLAMMATION TGLs = 1-2

Spleen

Leukemia Mononuclear

Testes

Bilateral, Interstit Cell

Adenoma

Tunic

Mesothelioma Malignant

Note: ADENOMA TGLs = 2-3,3-3

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8069

TRT#: 2

SEX: Male

DAY ON TEST: 730

DOSE: 0 PPM 10-0

DISP: Terminal Sacrifice

HISTO: 851999

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Stomach - Forestomach

Stomach - Glandular

OBSERVATIONS

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Moderate

Hepatodiaphragmatic Nodule

Bile Duct

Hyperplasia

Moderate

Inflammation

Chronic, Mild

Leukemia Mononuclear

Vacuolization Cytoplasmic

Mild

Note: TGL5-5 ANOM HEPAT LOB USED FOR HDN

[ Vacuolization Cytoplasmic TGLs = 5-5 ]

Spleen

Leukemia Mononuclear

Note: LEUKEMIA MONUC TGLs = 1-2,2-2

Testes

Bilateral, Interstit Cell

Adenoma

Note: ADENOMA TGLs = 3-3

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL 4-3, TESTIS SIZE WITHIN NORMAL LIMITS

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8070

TRT#: 2

SEX: Male

DAY ON TEST: 632

DOSE: 0 PPM 10-0

DISP: Moribund Sacrifice

HISTO: 852000

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Brain	Esophagus
Heart	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Nose	Pancreas	Parathyroid Gland	Preputial Gland
Salivary Glands	Skin	Stomach - Glandular	Trachea

INSUFFICIENT TISSUE

Thymus

OBSERVATIONS

Adrenal Gland	Medulla Cortex	Hyperplasia Vacuolization Cytoplasmic Adenocarcinoma	Mild Moderate Metastatic (Prostate)
Epididymis		Hydronephrosis	Moderate
Kidney		Nephropathy	Chronic, Moderate
[ Nephropathy TGLS = 6-1 ]			
Liver		Adenocarcinoma Infarct	Metastatic (Prostate) Marked
Note: ADENOCARC TGLs = 5-13			
Note: INFARCT TGLs = 5-13,4-4			
Lung		Adenocarcinoma	Metastatic (Prostate)
Lymph Node	Mediastinal Mesenteric	Adenocarcinoma Adenocarcinoma	Metastatic (Prostate) Metastatic (Prostate)
Note: MANDIBULAR LN NORMAL			
Note: ADENOCARC TGLs = 2-15			
Mammary Gland		Hyperplasia	Cystic, Moderate
Mesentery		Adenocarcinoma	Metastatic (Prostate)
Note: ADENOCARC TGLs = 1-14			
Pituitary Gland	Pars Distalis	Hyperplasia	Mild
Prostate		Adenocarcinoma	
Note: ADENOCARC TGLs = 3-12			
Spleen		Hematopoietic Cell Proliferation	Marked

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:06

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8070

**TRT#:** 2

**SEX:** Male

**DAY ON TEST:** 632

**DOSE:** 0 PPM 10-0

**DISP:** Moribund Sacrifice

**HISTO:** 852000

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Note: HEMA CELL PROL TGLs = 7-11

Stomach	Forestomach	Acanthosis	Moderate
Thyroid Gland	C Cell	Carcinoma	
	C Cell	Hyperplasia	Moderate

Note: [ CARCINOMA ] TGLs = 8-7

Urinary Bladder		Adenocarcinoma	Metastatic (Prostate)
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PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO PROSTATIC TUMOR

Animal Note: TGL3-12, MESENTERY TISSUE IS PROSTATE AND BLADDER

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\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8071

TRT#: 2

SEX: Male

DAY ON TEST: 646

DOSE: 0 PPM 10-0

DISP: Moribund Sacrifice

HISTO: 852001

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Brain	Epididymis
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Lymph Node	Nose	Parathyroid Gland	Pituitary Gland
Salivary Glands	Skin	Stomach - Forestomach	Stomach - Glandular
Trachea	Urinary Bladder		

MISSING

Thymus

OBSERVATIONS

Adrenal Gland	Medulla Cortex	Pheochromocytoma Benign Vacuolization Cytoplasmic Degeneration	Moderate Chronic, Mild
Heart		Nephropathy	Chronic, Minimal
Kidney		Hyperplasia	Marked
Liver	Bile Duct Oval Cell	Hyperplasia Leukemia Mononuclear Vacuolization Cytoplasmic Leukemia Mononuclear	Mild Marked
Lung			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Moderate
Pancreas	Acinus	Atrophy	Mild
Preputial Gland		Inflammation	Chronic Active, Mild
Prostate		Inflammation	Chronic Active, Mild
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-11 ]			
Testes	Bilateral, Interstit Cell	Adenoma	
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:06

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8071

**TRT#:** 2

**SEX:** Male

**DAY ON TEST:** 646

**DOSE:** 0 PPM 10-0

**DISP:** Moribund Sacrifice

**HISTO:** 852001

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01  
Test Type: CHRONIC  
Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014  
Time Report Requested: 08:38:06  
First Dose M/F: NA / NA  
Lab: BAT

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ANIMAL ID: 8072	TRT#: 2	SEX: Male	DAY ON TEST: 730
	DOSE: 0 PPM 10-0	DISP: Terminal Sacrifice	HISTO: 852002

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ORGAN AND ACCOUNTABLE SITE STATUS

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NORMAL

Stomach - Forestomach	Stomach - Glandular
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OBSERVATIONS

Liver		Basophilic Focus	Minimal
		Degeneration	Cystic, Mild
		Eosinophilic Focus	Mild
	Bile Duct	Hyperplasia	Moderate
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Pituitary Gland	Pars Distalis	Hyperplasia	Mild
Note: HYPERPLASIA	TGLs = 2-2		
Spleen		Leukemia Mononuclear	
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA	TGLs = 1-3		

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PRIMARY CAUSE OF DEATH

-

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8073

TRT#: 2

SEX: Male

DAY ON TEST: 730

DOSE: 0 PPM 10-0

DISP: Terminal Sacrifice

HISTO: 852003

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Bile Duct

Hepatodiaphragmatic Nodule

Hyperplasia

Leukemia Mononuclear

Mild

Note: LEUKEMIA MONUC TGLs = 6-1

Note: ANOM HEPAT LOB TGLs = 7-5

Note: TGL7-5, ANOM HEPAT LOB USED FOR HDN

Skin

Subcut Tiss

Fibroma

Note: FIBROMA TGLs = 1-2

Spleen

Fibrosis

Leukemia Mononuclear

Mild

[ Fibrosis TGLs = 4-4 ]

[ Leukemia Mononuclear TGLs = 5-4 ]

Testes

Interstit Cell

Adenoma

Interstit Cell

Hyperplasia

Mild

Note: HYPERPLASIA TGLs = 2-3

Note: ADENOMA TGLs = 3-3

**PRIMARY CAUSE OF DEATH**

-

Animal Note: THL2-3, TESTIS SIZE WITHIN NORMAL LIMITS

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8074

TRT#: 2

SEX: Male

DAY ON TEST: 702

DOSE: 0 PPM 10-0

DISP: Moribund Sacrifice

HISTO: 852004

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Epididymis
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Nose	Pancreas	Parathyroid Gland	Pituitary Gland
Prostate	Salivary Glands	Skin	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	Urinary Bladder

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Cortex	Vacuolization Cytoplasmic	Mild
Brain		Gliosis	Mild
Eye	Retina	Atrophy	Marked
	Lens	Cataract	Moderate
Note: CATARACT	TGLs = 1-12		
Note: ATROPHY	TGLs = 1-12		
Heart		Degeneration	Chronic, Mild
Kidney		Leukemia Mononuclear	
		Nephropathy	Chronic, Minimal
Liver		Degeneration	Cystic, Mild
	Bile Duct	Hyperplasia	Marked
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Note: LEUKEMIA MONUC	TGLs = 3-4		
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
	Mediastinal	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Moderate
Preputial Gland	Duct	Dilatation	Moderate
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 2-11 ]			
Testes	Bilateral, Interstit Cell	Adenoma	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:06

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8074

**TRT#:** 2

**SEX:** Male

**DAY ON TEST:** 702

**DOSE:** 0 PPM 10-0

**DISP:** Moribund Sacrifice

**HISTO:** 852004

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

Thyroid Gland

C Cell

Adenoma

C Cell

Hyperplasia

Mild

---

**PRIMARY CAUSE OF DEATH**

-

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**Animal Note:** MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

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\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:06

**First Dose M/F:** NA / NA

**Lab:** BAT

**ANIMAL ID:** 8075

**TRT#:** 2

**SEX:** Male

**DAY ON TEST:** 731

**DOSE:** 0 PPM 10-0

**DISP:** Terminal Sacrifice

**HISTO:** 852005

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Minimal

Eosinophilic Focus

Mild

Bile Duct

Hyperplasia

Moderate

Leukemia Mononuclear

Spleen

Leukemia Mononuclear

Testes

Bilateral, Interstit Cell

Adenoma

Note: ADENOMA TGLs = 1-2

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8076

TRT#: 2

SEX: Male

DAY ON TEST: 731

DOSE: 0 PPM 10-0

DISP: Terminal Sacrifice

HISTO: 852006

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Angiectasis

Minimal

Degeneration

Cystic, Mild

Eosinophilic Focus

Mild

Bile Duct

Hyperplasia

Moderate

Inflammation

Chronic, Minimal

Pituitary Gland

Pars Distalis

Adenoma

Note: ADENOMA

TGLs = 5-2

Testes

Bilateral, Interstit Cell

Adenoma

Note: ADENOMA

TGLs = 1-3,3-3

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL2-3, TESTIS SIZE WITHIN NORMAL LIMITS

Animal Note: TGL4, SKIN MASS NOT FOUND IN WET TISSUE

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8077

TRT#: 2

SEX: Male

DAY ON TEST: 503

DOSE: 0 PPM 10-0

DISP: Natural Death

HISTO: 852007

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Brain	Epididymis
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Lymph Node	Nose	Pancreas	Parathyroid Gland
Prostate	Salivary Glands	Spleen	Stomach - Forestomach
Trachea	Urinary Bladder		

MISSING

Pituitary Gland

OBSERVATIONS

Adrenal Gland	Cortex	Lymphoma Malignant Histiocytic	
	Cortex	Vacuolization Cytoplasmic	Mild
Bone Marrow	Femoral	Lymphoma Malignant Histiocytic	
Heart	Epicardium	Lymphoma Malignant Histiocytic	
Kidney		Nephropathy	Chronic, Minimal
Liver		Lymphoma Malignant Histiocytic	
Lung	Mediastinum	Lymphoma Malignant Histiocytic	
		Lymphoma Malignant Histiocytic	
Note: LYMPH MAL HIST TGLs = 3-2,3-3			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Preputial Gland		Inflammation	Chronic Active, Mild
Skin	Subcut Tiss	Lymphoma Malignant Histiocytic	
Note: LYMPH MAL HIST TGLs = 1-11,2-12,4-13			
Stomach	Glandular	Lymphoma Malignant Histiocytic	
Note: LYMPH MAL HIST TGLs = 5-6			
Testes	Interstit Cell	Adenoma	
	Tunic	Mesothelioma Malignant	
Thymus		Lymphoma Malignant Histiocytic	
Thyroid Gland	C Cell	Hyperplasia	Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:06

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8077

**TRT#:** 2

**SEX:** Male

**DAY ON TEST:** 503

**DOSE:** 0 PPM 10-0

**DISP:** Natural Death

**HISTO:** 852007

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

PRIMARY CAUSE OF DEATH

-

Animal Note: CAUSE OF DEATH, MALIGNANT LYMPHOMA HISTIOCYTIC

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8078

TRT#: 2

SEX: Male

DAY ON TEST: 731

DOSE: 0 PPM 10-0

DISP: Terminal Sacrifice

HISTO: 852008

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Angiectasis

Minimal

Basophilic Focus

Minimal

Degeneration

Cystic, Mild

Eosinophilic Focus

Minimal

Bile Duct

Hyperplasia

Moderate

Leukemia Mononuclear

Spleen

Leukemia Mononuclear

Testes

Bilateral, Interstit Cell

Adenoma

Note: ADENOMA

TGLs = 1-2,2-2

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL3-2, TESTIS SIZE WITHIN NORMAL LIMITS

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8080

TRT#: 2

DOSE: 0 PPM 10-0

SEX: Male

DISP: Moribund Sacrifice

DAY ON TEST: 716

HISTO: 852010

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Intestine Large - Cecum	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Lymph Node	Nose	Parathyroid Gland	Pituitary Gland
Prostate	Salivary Glands	Skin	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	Urinary Bladder

OBSERVATIONS

Adrenal Gland	Medulla	Pheochromocytoma Benign	
Heart		Degeneration	Chronic, Moderate
		Thrombosis	
Note: THROMBUS TGLs = 6-4			
Intestine Large	Colon	Parasite Metazoan	
Kidney		Nephropathy	Chronic, Moderate
Liver		Angiectasis	Minimal
		Degeneration	Cystic, Mild
	Bile Duct	Hyperplasia	Moderate
		Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 4-4			
Lung	Alveolar Epith	Hyperplasia	Mild
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Mild
Preputial Gland		Carcinoma	
Note: CARCINOMA TGLs = 1-12,5-12			
Spleen		Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 3-1			
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA TGLs = 7-10			
Thyroid Gland	C Cell	Hyperplasia	Moderate

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:06

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8080

**TRT#:** 2

**SEX:** Male

**DAY ON TEST:** 716

**DOSE:** 0 PPM 10-0

**DISP:** Moribund Sacrifice

**HISTO:** 852010

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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PRIMARY CAUSE OF DEATH

-

Animal Note: TGL2-11, SUBCUTIS MASS IS JUST INGUINAL LYMPH NODE,NSL

Animal Note: MORIBUND SACRIFICE DUE TO PREPUTIAL GLAND TUMOR

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8081

TRT#: 2

SEX: Male

DAY ON TEST: 691

DOSE: 0 PPM 10-0

DISP: Moribund Sacrifice

HISTO: 852011

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Bone	Epididymis	Esophagus	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Nose	Pancreas
Parathyroid Gland	Peripheral Nerve	Prostate	Salivary Glands
Skin	Stomach - Forestomach	Stomach - Glandular	Trachea
Urinary Bladder			

**OBSERVATIONS**

Adrenal Gland	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
Bone Marrow	Femoral	Leukemia Mononuclear	
Brain		Hemorrhage	Moderate
Note: HEMORRHAGE	TGLs = 6-5		
Heart		Leukemia Mononuclear	
Kidney		Leukemia Mononuclear	
		Nephropathy	Chronic, Moderate
Liver		Degeneration	Cystic, Mild
	Bile Duct	Hyperplasia	Marked
		Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 4-4		
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
	Mediastinal	Leukemia Mononuclear	
	Pancreatic	Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 5-7		
Pituitary Gland	Pars Distalis	Hyperplasia	Moderate
	Pars Distalis	Leukemia Mononuclear	
Preputial Gland	Duct	Dilatation	Moderate
Note: DILATATION	TGLs = 7-15		
Seminal Vesicle	Epithelium	Hyperplasia	Mild
Note: HYPERPLASIA	TGLs = 3-14		

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01  
**Test Type:** CHRONIC  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 08:38:06  
**First Dose M/F:** NA / NA  
**Lab:** BAT

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<b>ANIMAL ID:</b> 8081	<b>TRT#:</b> 2	<b>SEX:</b> Male	<b>DAY ON TEST:</b> 691
	<b>DOSE:</b> 0 PPM 10-0	<b>DISP:</b> Moribund Sacrifice	<b>HISTO:</b> 852011

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Spinal Cord	Nerve	Demyelination	Moderate
		Hemorrhage	Moderate
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-12 ]			
Testes	Interstit Cell	Hyperplasia	Moderate
Thymus		Leukemia Mononuclear	
Thyroid Gland	C Cell	Hyperplasia	Moderate

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**PRIMARY CAUSE OF DEATH**

-

Animal Note: TGL2-6, BLADDER WITHIN NORMAL LIMITS

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

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\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8082

TRT#: 2

SEX: Male

DAY ON TEST: 601

DOSE: 0 PPM 10-0

DISP: Moribund Sacrifice

HISTO: 852012

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Brain	Epididymis	Esophagus
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Nose
Parathyroid Gland	Prostate	Salivary Glands	Skin
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder			

OBSERVATIONS

Adrenal Gland	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
	Cortex	Vacuolization Cytoplasmic	Mild
Bone Marrow	Femoral	Leukemia Mononuclear	
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Mild
Liver	Bile Duct	Hyperplasia	Marked
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Minimal
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Moderate
Pancreas	Acinus	Atrophy	Mild
Pituitary Gland	Pars Distalis	Hyperplasia	Mild
Preputial Gland		Inflammation	Chronic Active, Mild
Spleen		Leukemia Mononuclear	
		[ Leukemia Mononuclear TGLS = 1-11 ]	
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA	TGLs = 2-10		
Thyroid Gland	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8083

TRT#: 2

SEX: Male

DAY ON TEST: 727

DOSE: 0 PPM 10-0

DISP: Natural Death

HISTO: 852013

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Brain	Epididymis
Esophagus	Heart	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Nose	Parathyroid Gland	Prostate
Salivary Glands	Skin	Stomach - Forestomach	Stomach - Glandular
Trachea	Urinary Bladder		

MISSING

Thymus

OBSERVATIONS

Adrenal Gland	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
Kidney		Nephropathy	Chronic, Moderate
Liver		Basophilic Focus	Mild
	Bile Duct	Hyperplasia	Marked
		Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 3-4		
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Minimal
Pituitary Gland	Pars Distalis	Leukemia Mononuclear	
Preputial Gland		Carcinoma	
Note: CARCINOMA	TGLs = 6-13		
Spleen	Capsule	Hemorrhage	Moderate
		Leukemia Mononuclear	
		[ Hemorrhage TGLS = 2-12 ]	
		[ Leukemia Mononuclear TGLS = 1-11 ]	
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA	TGLs = 5-10		
Thyroid Gland	C Cell	Adenoma	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:06

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8083

**TRT#:** 2

**SEX:** Male

**DAY ON TEST:** 727

**DOSE:** 0 PPM 10-0

**DISP:** Natural Death

**HISTO:** 852013

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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C Cell

Hyperplasia

Mild

Tissue NOS

Note: CAUSE OF DEATH, LEUKEMIA MONONUCLEAR

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PRIMARY CAUSE OF DEATH

-

Animal Note: CAUSE OF DEATH, LEUKEMIA MONONUCLEAR

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\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8085

TRT#: 2

SEX: Male

DAY ON TEST: 542

DOSE: 0 PPM 10-0

DISP: Moribund Sacrifice

HISTO: 852015

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Esophagus	Intestine Large - Cecum	Islets, Pancreatic
Lung	Nose	Pancreas	Parathyroid Gland
Pituitary Gland	Prostate	Salivary Glands	Skin
Thymus	Trachea		

OBSERVATIONS

Epididymis	Serosa	Mesothelioma Malignant	
Heart		Degeneration	Chronic, Mild
Intestine Large	Colon	Mesothelioma Malignant	
	Rectum	Mesothelioma Malignant	
Note: MESOTHELIO MAL TGLs = 3-6,4-6			
Intestine Small	Duodenum	Mesothelioma Malignant	
	Ileum	Mesothelioma Malignant	
	Jejunum	Mesothelioma Malignant	
Note: MESOTHELIO MAL TGLs = 5-6,6-6,7-6			
Kidney		Nephropathy	Chronic, Mild
Liver	Bile Duct	Hyperplasia	Moderate
	Centrilobular	Necrosis	Moderate
Lymph Node	Mediastinal	Hyperplasia	Macrophage, Moderate
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Mesentery		Mesothelioma Malignant	
Preputial Gland		Inflammation	Chronic Active, Mild
Spleen		Hematopoietic Cell Proliferation	Marked
		Mesothelioma Malignant	
[ Mesothelioma Malignant TGLS = 1-11 ]			
Stomach	Forestomach	Mesothelioma Malignant	
	Glandular	Mesothelioma Malignant	
Testes	Bilateral, Interstit Cell	Adenoma	
	Tunic	Mesothelioma Malignant	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:06

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8085

**TRT#:** 2

**SEX:** Male

**DAY ON TEST:** 542

**DOSE:** 0 PPM 10-0

**DISP:** Moribund Sacrifice

**HISTO:** 852015

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Note: ADENOMA TGLs = 11-10

Thyroid Gland

C Cell

Hyperplasia

Mild

Urinary Bladder

Mesothelioma Malignant

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**PRIMARY CAUSE OF DEATH**

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Animal Note: TGL9-4,10-2, NOT SEEN AT TRIM

Animal Note: MORIBUND SACRIFICE DUE TO FLUID FROM MESOTHELIOMA

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8086

TRT#: 2

SEX: Male

DAY ON TEST: 734

DOSE: 0 PPM 10-0

DISP: Terminal Sacrifice

HISTO: 852016

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Stomach - Forestomach

Stomach - Glandular

OBSERVATIONS

Liver

Eosinophilic Focus

Moderate

Hepatocellular Adenoma

Bile Duct

Hyperplasia

Mild

Leukemia Mononuclear

Mesentery

Inflammation

Chronic Active, Marked

Note: INFLAMMATION TGLs = 2-3

Preputial Gland

Inflammation

Chronic Active, Moderate

Note: INFLAMMATION TGLs = 1-2

Spleen

Leukemia Mononuclear

[ Leukemia Mononuclear TGLS = 6-5 ]

Testes

Bilateral, Interstit Cell

Adenoma

[ Adenoma TGLS = 3-4,4-4 ]

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL5-4, TESTIS SIZE WITHIN NORMAL LIMITS

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8087

TRT#: 2

SEX: Male

DAY ON TEST: 734

DOSE: 0 PPM 10-0

DISP: Terminal Sacrifice

HISTO: 852017

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Stomach - Forestomach

Stomach - Glandular

OBSERVATIONS

Adrenal Gland

Cortex

Leukemia Mononuclear

Medulla

Leukemia Mononuclear

Medulla

Pheochromocytoma Benign

Note: PHEOCHROM BGN TGLs = 5-3

Liver

Degeneration

Cystic, Mild

Eosinophilic Focus

Mild

Hepatocellular Adenoma

Bile Duct

Hyperplasia

Moderate

Leukemia Mononuclear

Note: [ HEPATOCLR ADEN ] TGLs = 6-5

Lymph Node

Mandibular

Leukemia Mononuclear

Mesenteric

Leukemia Mononuclear

Note: LEUKEMIA MONUC TGLs = 2-3,7-7

Preputial Gland

Carcinoma

Note: CARCINOMA TGLs = 1-6

Spleen

Leukemia Mononuclear

[ Leukemia Mononuclear TGLs = 3-4 ]

Testes

Bilateral, Interstit Cell

Adenoma

Note: ADENOMA TGLs = 4-2

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

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ANIMAL ID: 8088

TRT#: 2

SEX: Male

DAY ON TEST: 735

DOSE: 0 PPM 10-0

DISP: Terminal Sacrifice

HISTO: 852018

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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**NORMAL**

Stomach - Forestomach

Stomach - Glandular

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**OBSERVATIONS**

Liver

Basophilic Focus

Minimal

Eosinophilic Focus

Minimal

Leukemia Mononuclear

Spleen

Leukemia Mononuclear

Testes

Bilateral, Interstit Cell

Adenoma

Note: ADENOMA TGLs = 1-2

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PRIMARY CAUSE OF DEATH

-

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8089

TRT#: 2

SEX: Male

DAY ON TEST: 651

DOSE: 0 PPM 10-0

DISP: Moribund Sacrifice

HISTO: 852019

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Brain	Epididymis
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Lymph Node	Nose	Pancreas	Parathyroid Gland
Prostate	Salivary Glands	Skin	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	Urinary Bladder

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
	Cortex	Vacuolization Cytoplasmic	Mild
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Moderate
Liver		Eosinophilic Focus	Mild
	Bile Duct	Hyperplasia	Marked
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Note: LEUKEMIA MONUC TGLs = 2-4			
Lung		Leukemia Mononuclear	
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Moderate
Pituitary Gland	Pars Distalis	Hyperplasia	Moderate
Preputial Gland		Inflammation	Chronic Active, Mild
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-11 ]			
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA TGLs = 3-10			
Thyroid Gland	Bilateral, C Cell	Adenoma	
	C Cell	Hyperplasia	Moderate

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:06

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8089

**TRT#:** 2

**SEX:** Male

**DAY ON TEST:** 651

**DOSE:** 0 PPM 10-0

**DISP:** Moribund Sacrifice

**HISTO:** 852019

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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PRIMARY CAUSE OF DEATH

-

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Animal Note: MORIBUND SACRIFICE DUE T LEUKEMIA MONONUCLEAR

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8090

TRT#: 2

DOSE: 0 PPM 10-0

SEX: Male

DISP: Moribund Sacrifice

DAY ON TEST: 665

HISTO: 852020

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Epididymis
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Nose	Salivary Glands	Skin	Stomach - Forestomach
Stomach - Glandular	Trachea	Urinary Bladder	

OBSERVATIONS

Bone Marrow	Femoral	Leukemia Mononuclear	
Brain		Hemorrhage	Moderate
Heart		Leukemia Mononuclear	
Kidney		Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 8-1,8-16		
Liver	Bile Duct	Hyperplasia	Moderate
		Leukemia Mononuclear	
[ Hyperplasia TGLS = 6-4 ]			
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
	Mediastinal	Leukemia Mononuclear	
	Renal	Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 1-11,3-18,7-15		
Mammary Gland		Hyperplasia	Cystic, Moderate
Mesentery		Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 5-14		
Pancreas		Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 9-12		
Parathyroid Gland		Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 11-7		
Pituitary Gland	Pars Distalis	Leukemia Mononuclear	
Preputial Gland		Inflammation	Chronic Active, Mild
Prostate		Leukemia Mononuclear	
Spleen		Leukemia Mononuclear	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:06

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8090

**TRT#:** 2

**SEX:** Male

**DAY ON TEST:** 665

**DOSE:** 0 PPM 10-0

**DISP:** Moribund Sacrifice

**HISTO:** 852020

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Note: LEUKEMIA MONUC TGLs = 2-13

Testes Bilateral, Interstit Cell

Adenoma

Note: ADENOMA TGLs = 10-10

Thymus Leukemia Mononuclear

Note: LEUKEMIA MONUC TGLs = 4-17

Thyroid Gland C Cell Hyperplasia Moderate

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**PRIMARY CAUSE OF DEATH**

-

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8091

TRT#: 2

SEX: Male

DAY ON TEST: 580

DOSE: 0 PPM 10-0

DISP: Moribund Sacrifice

HISTO: 852021

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Bone	Bone Marrow	Epididymis
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Lung	Lymph Node	Nose	Parathyroid Gland
Preputial Gland	Prostate	Salivary Glands	Skin
Stomach - Glandular	Thymus	Trachea	Urinary Bladder

OBSERVATIONS

Adrenal Gland	Medulla	Hyperplasia	Mild
	Medulla	Pheochromocytoma Benign	
Brain		Astrocytoma Malignant	
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Moderate
Liver	Bile Duct	Hyperplasia	Mild
		Leukemia Mononuclear	
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Pancreas	Acinus	Atrophy	Minimal
Pituitary Gland	Pars Nervosa	Astrocytoma Malignant	Metastatic (Brain)
Spleen		Leukemia Mononuclear	
Stomach	Forestomach	Acanthosis	Mild
	Forestomach	Inflammation	Chronic Active, Moderate
	Forestomach	Ulcer	Moderate
Note: ULCER TGLs = 6-12			
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA TGLs = 5-10			
Thyroid Gland	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL2-1,3-1, NODULES ARE FAT PADS, NOT A SIGNIFICANT LESION

Animal Note: TGL4-11, CECUM NORMAL ON MICRO, ONLY FOOD FIBER ON MUCOSA

Animal Note: TGL1-6, URINARY BLADDER WITHIN NORMAL LIMITS ON MICRO

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:06

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8091

**TRT#:** 2

**SEX:** Male

**DAY ON TEST:** 580

**DOSE:** 0 PPM 10-0

**DISP:** Moribund Sacrifice

**HISTO:** 852021

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Animal Note: MORIBUND SACRIFICE DUE TO BRAIN TUMOR

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8092

TRT#: 2

SEX: Male

DAY ON TEST: 735

DOSE: 0 PPM 10-0

DISP: Terminal Sacrifice

HISTO: 852022

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

**OBSERVATIONS**

Liver		Eosinophilic Focus	
	Bile Duct	Hyperplasia	Mild
		Leukemia Mononuclear	
		Necrosis	Mild
Spleen		Leukemia Mononuclear	
Stomach	Glandular	Inflammation	Chronic Active, Mild
	Glandular	Ulcer	Mild
Note: ULCER	TGLs = 2-3		
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA	TGLs = 1-2		

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8093

TRT#: 2

SEX: Male

DAY ON TEST: 367

DOSE: 0 PPM 10-0

DISP: Moribund Sacrifice

HISTO: 852023

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Heart	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Lung	Lymph Node
Pancreas	Parathyroid Gland	Pituitary Gland	Preputial Gland
Prostate	Salivary Glands	Skin	Spleen
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea

**MISSING**

Urinary Bladder

**OBSERVATIONS**

Adrenal Gland	Cortex	Vacuolization Cytoplasmic	Minimal
Kidney		Nephropathy	Chronic, Mild
Liver		Necrosis	Mild
		Vacuolization Cytoplasmic	Mild
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Nose	Glands, Submucosa	Adenocarcinoma	
Testes	Seminif Tub	Atrophy	Moderate
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO UNDETERMINED CAUSE

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01  
**Test Type:** CHRONIC  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 08:38:06  
**First Dose M/F:** NA / NA  
**Lab:** BAT

**ANIMAL ID:** 8094

**TRT#:** 2

**SEX:** Male

**DAY ON TEST:** 735

**DOSE:** 0 PPM 10-0

**DISP:** Terminal Sacrifice

**HISTO:** 852024

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Degeneration

Cystic, Moderate

Eosinophilic Focus

Mild

Bile Duct

Hyperplasia

Moderate

Pituitary Gland

Pars Distalis

Leukemia Mononuclear

Adenoma

Note: ADENOMA

TGLs = 3-2

Spleen

Leukemia Mononuclear

[ Leukemia Mononuclear TGLS = 2-3 ]

Testes

Bilateral, Interstit Cell

Adenoma

[ Adenoma TGLS = 1-4 ]

Thyroid Gland

Follicular Cel

Carcinoma

Note: CARCINOMA

TGLs = 4-2

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8095

TRT#: 2

SEX: Male

DAY ON TEST: 735

DOSE: 0 PPM 10-0

DISP: Terminal Sacrifice

HISTO: 852025

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Lymph Node - Mesenteric  
Stomach - Glandular

Lymph Node - Thoracic

Spleen

Stomach - Forestomach

**OBSERVATIONS**

Liver

Basophilic Focus  
Eosinophilic Focus  
Hepatodiaphragmatic Nodule  
Hyperplasia

Minimal  
Mild  
Moderate

Bile Duct

Note: ANOM HEPAT LOB USED FOR HDN  
[ Hyperplasia TGLS = 5-5 ]

Pituitary Gland

Pars Distalis

Cyst

Note: CYST TGLs = 4-2

Skin

Subcut Tiss

Fibrosarcoma

Note: FIBROSARC TGLs = 3-3

Testes

Bilateral, Interstit Cell

Adenoma

Note: ADENOMA TGLs = 1-4

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL5-5, ANOM HEPAT LOB USED FOR HDN

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8096

TRT#: 2

SEX: Male

DAY ON TEST: 736

DOSE: 0 PPM 10-0

DISP: Terminal Sacrifice

HISTO: 852026

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Kidney

Nephropathy

Chronic, Marked

Note: NEPHROPATHY TGLs = 1-2

Liver

Bile Duct

Hyperplasia

Mild

Inflammation

Chronic, Mild

Testes

Bilateral, Interstit Cell

Adenoma

Note: ADENOMA TGLs = 2-3,3-3

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01  
**Test Type:** CHRONIC  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 08:38:06  
**First Dose M/F:** NA / NA  
**Lab:** BAT

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**ANIMAL ID:** 8097

**TRT#:** 2

**SEX:** Male

**DAY ON TEST:** 736

**DOSE:** 0 PPM 10-0

**DISP:** Terminal Sacrifice

**HISTO:** 852027

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

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**OBSERVATIONS**

Liver

Basophilic Focus

Minimal

Eosinophilic Focus

Minimal

Bile Duct

Hyperplasia

Moderate

Testes

Bilateral, Interstit Cell

Adenoma

[ Adenoma TGLS = 1-2,2-2 ]

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**PRIMARY CAUSE OF DEATH**

-

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8098

TRT#: 2

SEX: Male

DAY ON TEST: 689

DOSE: 0 PPM 10-0

DISP: Natural Death

HISTO: 852028

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Brain	Epididymis
Esophagus	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Lung	Lymph Node	Nose	Pancreas
Parathyroid Gland	Pituitary Gland	Salivary Glands	Skin
Spleen	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea			

AUTO PRECLUDES DIAG.

Intestine Large - Cecum	Intestine Small - Ileum	Intestine Small - Jejunum	Thyroid Gland
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OBSERVATIONS

Adrenal Gland	Medulla	Hyperplasia	Mild
	Cortex	Hypertrophy	Mild
	Cortex	Vacuolization Cytoplasmic	Mild
Heart		Degeneration	Chronic, Moderate
Islets, Pancreatic		Adenoma	
Kidney		Hydronephrosis	Moderate
		Nephropathy	Chronic, Mild
Liver		Hepatodiaphragmatic Nodule	
	Bile Duct	Hyperplasia	Mild
Note: TGL5-14, ANOM HEPAT LOB USED FOR HDN			
Note: ANOM HEPAT LOB TGLs = 5-14			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Preputial Gland		Hyperplasia	Mild
Note: HYPERPLASIA TGLs = 7-11			
Prostate		Inflammation	Chronic Active, Moderate
Seminal Vesicle		Dilatation	Marked
Note: DILATATION TGLs = 1-13			
Testes	Interstit Cell	Adenoma	
Note: ADENOMA TGLs = 6-10			
Urinary Bladder		Hemorrhage	Moderate

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:06

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8098

**TRT#:** 2

**SEX:** Male

**DAY ON TEST:** 689

**DOSE:** 0 PPM 10-0

**DISP:** Natural Death

**HISTO:** 852028

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Note: HEMORRHAGE TGLs = 2-12

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL2-10, TESTIS WITHIN NORMAL LIMITS ON MICRO

Animal Note: CAUSE OF DEATH, URINARY TRACT OBSTRUCTION

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8099

TRT#: 2

SEX: Male

DAY ON TEST: 736

DOSE: 0 PPM 10-0

DISP: Terminal Sacrifice

HISTO: 852029

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Kidney

Renal Tubule

Adenoma

Nephropathy

Chronic, Marked

Note: NEPHROPATHY TGLs = 2-3

Liver

Eosinophilic Focus

Mild

Bile Duct

Hyperplasia

Moderate

Vacuolization Cytoplasmic

Mild

Pituitary Gland

Pars Distalis

Adenoma

Pars Intermed

Hyperplasia

Glandular, Mild

Note: ADENOMA TGLs = 4-2

Testes

Bilateral, Interstit Cell

Adenoma

Note: ADENOMA TGLs = 1-4

Thyroid Gland

C Cell

Adenoma

C Cell

Hyperplasia

Moderate

Note: ADENOMA TGLs = 5-2

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8100

TRT#: 2

SEX: Male

DAY ON TEST: 714

DOSE: 0 PPM 10-0

DISP: Moribund Sacrifice

HISTO: 852030

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Epididymis	Esophagus	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Lung	Lymph Node	Nose	Pancreas
Parathyroid Gland	Pituitary Gland	Prostate	Salivary Glands
Skin	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder		

OBSERVATIONS

Heart		Degeneration	Chronic, Moderate
Intestine Large	Cecum	Dilatation	Marked
	Colon	Dilatation	Marked
Note: DILATATION TGLs = 5-6			
Note: DILATATION TGLs = 4-6			
Kidney		Nephropathy	Chronic, Moderate
Liver		Eosinophilic Focus	Mild
	Bile Duct	Hyperplasia	Moderate
		Leukemia Mononuclear	
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Preputial Gland	Duct	Dilatation	Marked
		Inflammation	Chronic Active, Mild
Note: DILATATION TGLs = 1-13			
Spleen		Fibrosis	Moderate
		Leukemia Mononuclear	
[ Fibrosis TGLS = 2-11 ]			
Testes	Bilateral, Interstit Cell	Adenoma	
Thyroid Gland	C Cell	Hyperplasia	Moderate
Tissue NOS		Chordoma	
Note: [ CHORDOMA ] TGLs = 3-12			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:06

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8100

**TRT#:** 2

**SEX:** Male

**DAY ON TEST:** 714

**DOSE:** 0 PPM 10-0

**DISP:** Moribund Sacrifice

**HISTO:** 852030

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA AND PELVIC MASS

Animal Note: TGL6-14,SECTION IS RECTUM, NOT JEJUNUM, NCL

Animal Note: TGL3-12, TISSUE NOS IS FROM THE AREA OF THE PELVIS

Animal Note: SECTION OF JEJUNUM IS NORMAL

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8101

TRT#: 3

SEX: Male

DAY ON TEST: 436

DOSE: 3 PPM 1-1

DISP: Moribund Sacrifice

HISTO: 852761

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Kidney	Lymph Node	Nose
Pancreas	Parathyroid Gland	Pituitary Gland	Preputial Gland
Prostate	Salivary Glands	Spleen	Stomach - Forestomach
Stomach - Glandular	Trachea	Urinary Bladder	

MISSING

Thymus

OBSERVATIONS

Adrenal Gland	Cortex	Vacuolization Cytoplasmic	Moderate
Heart		Degeneration	Chronic, Moderate
Liver	Bile Duct	Hyperplasia	Minimal
		Hypertrophy	Mild
		Vacuolization Cytoplasmic	Moderate
Note: VACUOLIZ CYTO TGLs = 2-4			
Lung	Mediastinum	Alveolar/Bronchiolar Carcinoma	Metastatic (Lung)
		Alveolar/Bronchiolar Carcinoma	
[ Alveolar/Bronchiolar Carcinoma TGLS = 3-11,4-2,4-3 ]			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Skin	Subcut Tiss	Fibrosarcoma	
Note: FIBROSARC TGLs = 5-13			
Testes	Interstit Cell	Hyperplasia	Mild
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO LUNG TUMOR

Animal Note: TGL1-1,1-12, KINDEY SIZE WITHIN NORMAL LIMITS

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01  
Test Type: CHRONIC  
Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014  
Time Report Requested: 08:38:06  
First Dose M/F: NA / NA  
Lab: BAT

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ANIMAL ID: 8102	TRT#: 3 DOSE: 3 PPM 1-1	SEX: Male DISP: Terminal Sacrifice	DAY ON TEST: 727 HISTO: 852762
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ORGAN AND ACCOUNTABLE SITE STATUS

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NORMAL

Spleen	Stomach - Forestomach	Stomach - Glandular
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OBSERVATIONS

Liver		Basophilic Focus	Mild
		Congestion	Moderate
		Eosinophilic Focus	Minimal
	Bile Duct	Hyperplasia	Moderate
		Hypertrophy	Minimal
		Inflammation	Chronic, Multifocal, Mild
		Vacuolization Cytoplasmic	Minimal
Note: CONGESTION TGLs = 2-3			
Testes	Bilateral, Interstit Cell	Adenoma	
[ Adenoma TGLS = 1-2 ]			

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PRIMARY CAUSE OF DEATH

-

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8103

TRT#: 3

SEX: Male

DAY ON TEST: 727

DOSE: 3 PPM 1-1

DISP: Terminal Sacrifice

HISTO: 852763

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Minimal

Clear Cell Focus

Eosinophilic Focus

Minimal

Bile Duct

Hyperplasia

Moderate

Hypertrophy

Minimal

Necrosis

Minimal

Vacuolization Cytoplasmic

Mild

Pituitary Gland

Pars Distalis

Adenoma

Note: ADENOMA

TGLs = 4-4

Skin

Subcut Tiss

Fibrosarcoma

Note: FIBROSARC

TGLs = 3-3

Testes

Bilateral, Interstit Cell

Adenoma

Note: ADENOMA

TGLs = 1-2

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL2-2, TESTIS SIZE WITHIN NORMAL LIMITS

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01  
**Test Type:** CHRONIC  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 08:38:06  
**First Dose M/F:** NA / NA  
**Lab:** BAT

**ANIMAL ID:** 8104

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 727

**DOSE:** 3 PPM 1-1

**DISP:** Terminal Sacrifice

**HISTO:** 852764

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Minimal

Eosinophilic Focus

Minimal

Bile Duct

Hyperplasia

Mild

Hypertrophy

Minimal

Leukemia Mononuclear

Vacuolization Cytoplasmic

Mild

Spleen

Leukemia Mononuclear

Testes

Bilateral, Interstit Cell

Adenoma

[ Adenoma TGLS = 1-2 ]

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:06

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8105

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 727

**DOSE:** 3 PPM 1-1

**DISP:** Terminal Sacrifice

**HISTO:** 852765

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**OBSERVATIONS**

Liver

Basophilic Focus

Minimal

Eosinophilic Focus

Mild

Bile Duct

Hyperplasia

Moderate

Hypertrophy

Minimal

Vacuolization Cytoplasmic

Moderate

[ Vacuolization Cytoplasmic TGLS = 2-3 ]

Testes

Bilateral, Interstit Cell

Adenoma

[ Adenoma TGLS = 1-2 ]

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**PRIMARY CAUSE OF DEATH**

-

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8106

TRT#: 3

SEX: Male

DAY ON TEST: 728

DOSE: 3 PPM 1-1

DISP: Terminal Sacrifice

HISTO: 852766

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Stomach - Forestomach

Stomach - Glandular

OBSERVATIONS

Kidney

Nephropathy

Chronic, Marked

Note: NEPHROPATHY TGLs = 3-4

Liver

Basophilic Focus

Minimal

Degeneration

Cystic, Mild

Eosinophilic Focus

Moderate

Bile Duct

Hyperplasia

Moderate

Hypertrophy

Mild

Leukemia Mononuclear

Vacuolization Cytoplasmic

Mild

Leukemia Mononuclear

Spleen

Note: LEUKEMIA MONUC TGLs = 2-2

Testes

Bilateral, Interstit Cell

Adenoma

Note: ADENOMA TGLs = 4-5

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL5-5, TESTIS SIZE WITHIN NORMAL LIMITS

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8107

TRT#: 3

DOSE: 3 PPM 1-1

SEX: Male

DISP: Moribund Sacrifice

DAY ON TEST: 683

HISTO: 852767

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Brain	Epididymis
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Nose	Pancreas	Parathyroid Gland	Pituitary Gland
Prostate	Salivary Glands	Skin	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	Urinary Bladder

OBSERVATIONS

Adrenal Gland	Cortex	Vacuolization Cytoplasmic	Moderate
Bone Marrow	Femoral	Leukemia Mononuclear	
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Mild
Liver	Bile Duct	Hyperplasia	Marked
		Hypertrophy	Minimal
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Moderate
Note: LEUKEMIA MONUC TGLs = 4-4			
Lung		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLs = 2-2,2-3 ]			
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Moderate
Preputial Gland		Inflammation	Chronic Active, Mild
Spleen		Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 3-11			
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA TGLs = 5-10			
Thyroid Gland	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

Animal Note: TGL1, EAR MASS MISSING AT TRIM

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8108

TRT#: 3

SEX: Male

DAY ON TEST: 581

DOSE: 3 PPM 1-1

DISP: Moribund Sacrifice

HISTO: 852768

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Adrenal Gland - Medulla	Bone	Bone Marrow	Epididymis
Esophagus	Heart	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lung	Lymph Node	Nose
Parathyroid Gland	Preputial Gland	Salivary Glands	Skin
Spleen	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder		

**OBSERVATIONS**

Adrenal Gland	Cortex	Hyperplasia	Mild
	Cortex	Vacuolization Cytoplasmic	Mild
Brain		Compression	
		Hydrocephalus	Mild
Kidney		Nephropathy	Chronic, Mild
Liver		Basophilic Focus	Minimal
		Eosinophilic Focus	Minimal
	Bile Duct	Hyperplasia	Mild
		Necrosis	Mild
		Vacuolization Cytoplasmic	Mild
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Moderate
Pancreas	Acinus	Atrophy	Minimal
Pituitary Gland	Pars Distalis	Adenoma	
Note: ADENOMA TGLs = 1-7			
Prostate		Inflammation	Chronic Active, Mild
Testes	Seminif Tub	Atrophy	Moderate
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO PITUITARY TUMOR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8109

TRT#: 3

SEX: Male

DAY ON TEST: 721

DOSE: 3 PPM 1-1

DISP: Moribund Sacrifice

HISTO: 852769

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Nose	Parathyroid Gland	Prostate
Salivary Glands	Seminal Vesicle	Stomach - Forestomach	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Cortex	Vacuolization Cytoplasmic	Mild
Heart		Degeneration	Chronic, Moderate
Kidney		Nephropathy	Chronic, Moderate
Liver		Eosinophilic Focus	Marked
	Bile Duct	Hyperplasia	Marked
	Oval Cell	Hyperplasia	Mild
		Hypertrophy	Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Moderate
Note: LEUKEMIA MONUC	TGLs = 4-4		
Lung		Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 5-3		
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Adenoma	
	Acinus	Atrophy	Moderate
Pituitary Gland	Pars Distalis	Adenoma	
Preputial Gland		Inflammation	Chronic Active, Mild
Skin	Subcut Tiss	Fibroma	
Note: FIBROMA	TGLs = 6-11		
Spleen		Leukemia Mononuclear	
	[ Leukemia Mononuclear TGLS = 3-1 ]		

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:06

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8109

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 721

**DOSE:** 3 PPM 1-1

**DISP:** Moribund Sacrifice

**HISTO:** 852769

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA TGLs = 1-10			
Thyroid Gland	Follicle	Cyst	
	C Cell	Hyperplasia	Mild
	Follicular Cel	Hypertrophy	Minimal

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**PRIMARY CAUSE OF DEATH**

-

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

Animal Note: TGL2-10, SEMINAL VESICLES WITHIN NORMAL LIMITS

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8110

TRT#: 3

SEX: Male

DAY ON TEST: 728

DOSE: 3 PPM 1-1

DISP: Terminal Sacrifice

HISTO: 852770

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Eye

Retina

Atrophy

Marked

Lens

Cataract

Moderate

[ Atrophy TGLS = 1-3 ]

[ Cataract TGLS = 1-3 ]

Liver

Basophilic Focus

Mild

Degeneration

Cystic, Mild

Eosinophilic Focus

Mild

Bile Duct

Hyperplasia

Mild

Hypertrophy

Minimal

Leukemia Mononuclear

Vacuolization Cytoplasmic

Mild

Alveolar/Bronchiolar Adenoma

Lung

[ Alveolar/Bronchiolar Adenoma TGLS = 4-5 ]

Pituitary Gland

Pars Distalis

Adenoma

[ Adenoma TGLS = 3-4 ]

Spleen

Leukemia Mononuclear

Testes

Bilateral, Interstit Cell

Adenoma

[ Adenoma TGLS = 2-2 ]

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8111

TRT#: 3

SEX: Male

DAY ON TEST: 728

DOSE: 3 PPM 1-1

DISP: Terminal Sacrifice

HISTO: 852771

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Stomach - Forestomach

Stomach - Glandular

OBSERVATIONS

Kidney		Nephropathy	Chronic, Marked
[ Nephropathy TGLS = 11-10 ]			
Liver		Angiectasis	Marked
		Basophilic Focus	Moderate
		Degeneration	Cystic, Marked
		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Marked
	Oval Cell	Hyperplasia	Moderate
		Hypertrophy	Minimal
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Note: LEUKEMIA MONUC	TGLs = 8-8		
Note: HEPATOCLR ADEN	TGLs = 9-8		
Lymph Node	Mandibular	Leukemia Mononuclear	
	Mediastinal	Leukemia Mononuclear	
	Mesenteric	Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 3-4,4-5,10-9		
Preputial Gland		Adenoma	
Note: ADENOMA	TGLs = 1-2		
Skin	Subcut Tiss	Fibroma	
Note: [ FIBROMA ]	TGLs = 2-3		
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 5-6 ]			
Testes	Interstit Cell	Adenoma	
	Seminif Tub	Atrophy	Mild
	Seminif Tub	Mineralization	Moderate
[ Adenoma TGLS = 6-7 ]			

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:06

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8111

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 728

**DOSE:** 3 PPM 1-1

**DISP:** Terminal Sacrifice

**HISTO:** 852771

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Atrophy TGLS = 7-7 ]

[ Mineralization TGLS = 6-7 ]

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**PRIMARY CAUSE OF DEATH**

-

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8112

TRT#: 3

SEX: Male

DAY ON TEST: 728

DOSE: 3 PPM 1-1

DISP: Terminal Sacrifice

HISTO: 852772

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Mild

Hepatocellular Carcinoma

Bile Duct

Hyperplasia

Moderate

Leukemia Mononuclear

Vacuolization Cytoplasmic

Mild

Note: HEPATOCLR CARC TGLs = 3-4

Spleen

Leukemia Mononuclear

[ Leukemia Mononuclear TGLS = 2-3 ]

Testes

Bilateral, Interstit Cell

Adenoma

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL1-2, TESTIS SIZE WITHIN NORMAL LIMITS

Animal Note: TGL4-5, BLOOD CLOT, NOT PANCREATIC TISSUE, NCL

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8113

TRT#: 3

SEX: Male

DAY ON TEST: 729

DOSE: 3 PPM 1-1

DISP: Terminal Sacrifice

HISTO: 852773

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Degeneration

Cystic, Mild

Eosinophilic Focus

Mild

Bile Duct

Hyperplasia

Mild

Leukemia Mononuclear

Vacuolization Cytoplasmic

Mild

Note: VACUOLIZ CYTO TGLs = 4-5

Seminal Vesicle

Dilatation

Moderate

Note: DILATATION TGLs = 2-3

Spleen

Fibrosis

Mild

Note: FIBROSIS TGLs = 3-4

Testes

Bilateral, Interstit Cell

Adenoma

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL1-2, TESTIS SIZE WITHIN NORMAL LIMITS

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8114

TRT#: 3

SEX: Male

DAY ON TEST: 729

DOSE: 3 PPM 1-1

DISP: Terminal Sacrifice

HISTO: 852774

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Skin	Spleen	Stomach - Forestomach	Stomach - Glandular
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**OBSERVATIONS**

Liver		Basophilic Focus	Mild
		Eosinophilic Focus	Mild
	Bile Duct	Hyperplasia	Moderate
		Hypertrophy	Minimal
		Inflammation	Chronic, Multifocal, Minimal
		Vacuolization Cytoplasmic	Moderate
[ Hyperplasia TGLS = 3-2 ]			
Mammary Gland		Fibroadenoma	
[ Fibroadenoma TGLS = 6-6 ]			
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA	TGLs = 2-4		

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL1-5, FAT PAD WITH MAMMARY GLAND, NCL

Animal Note: TGL6-6, SKIN MASS IS MAMMARY TUMOR

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01  
**Test Type:** CHRONIC  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 08:38:06  
**First Dose M/F:** NA / NA  
**Lab:** BAT

**ANIMAL ID:** 8115

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** 3 PPM 1-1

**DISP:** Terminal Sacrifice

**HISTO:** 852775

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Degeneration

Cystic, Mild

Eosinophilic Focus

Marked

Bile Duct

Hyperplasia

Marked

Hypertrophy

Minimal

Inflammation

Chronic, Multifocal, Minimal

Vacuolization Cytoplasmic

Mild

Testes

Bilateral, Interstit Cell

Adenoma

Note: ADENOMA

TGLs = 1-2,3-2

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01  
Test Type: CHRONIC  
Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014  
Time Report Requested: 08:38:06  
First Dose M/F: NA / NA  
Lab: BAT

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ANIMAL ID: 8116	TRT#: 3 DOSE: 3 PPM 1-1	SEX: Male DISP: Terminal Sacrifice	DAY ON TEST: 729 HISTO: 852776
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ORGAN AND ACCOUNTABLE SITE STATUS

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NORMAL

Spleen	Stomach - Forestomach	Stomach - Glandular
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OBSERVATIONS

Liver		Basophilic Focus	Mild
		Eosinophilic Focus	Mild
	Bile Duct	Hyperplasia	Mild
		Hypertrophy	Minimal
		Inflammation	Chronic, Multifocal, Mild
		Vacuolization Cytoplasmic	Moderate
Note: VACUOLIZ CYTO TGLs = 2-3			
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA TGLs = 1-2			

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PRIMARY CAUSE OF DEATH

-

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

<b>ANIMAL ID:</b> 8117	<b>TRT#:</b> 3 <b>DOSE:</b> 3 PPM 1-1	<b>SEX:</b> Male <b>DISP:</b> Terminal Sacrifice	<b>DAY ON TEST:</b> 729 <b>HISTO:</b> 852777
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**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach                      Stomach - Glandular

**OBSERVATIONS**

Liver		Basophilic Focus	Mild
		Degeneration	Cystic, Mild
		Eosinophilic Focus	Minimal
	Bile Duct	Hyperplasia	Mild
		Hypertrophy	Minimal
		Inflammation	Chronic, Multifocal, Mild
		Necrosis	Mild
		Vacuolization Cytoplasmic	Minimal
		Carcinoma	
Preputial Gland			
Note: CARCINOMA	TGLs = 1-2		
Spleen		Hematopoietic Cell Proliferation	Moderate
Note: [ HEMA CELL PROL ]	TGLs = 2-4		
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA	TGLs = 3-3,5-3		

PRIMARY CAUSE OF DEATH -

Animal Note: TGL4-3, TESTIS SIZE WITHIN NORMAL LIMITS

Animal Note: TGL6-5, NO SKIN MASS IN WET TISSUE, NCL

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8118

TRT#: 3

SEX: Male

DAY ON TEST: 730

DOSE: 3 PPM 1-1

DISP: Terminal Sacrifice

HISTO: 852778

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver		Basophilic Focus	Minimal
		Eosinophilic Focus	Mild
	Bile Duct	Hyperplasia	Mild
		Hypertrophy	Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Mammary Gland		Fibroadenoma	
Note: FIBROADENOMA	TGLs = 1-2		
Spleen		Fibrosis	Mild
		Leukemia Mononuclear	
Testes	Bilateral, Interstit Cell	Adenoma	
[ Adenoma TGLS = 2-3,3-3 ]			

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL1-2, SKIN MASS IS MAMMARY TUMOR

Animal Note: TGL4-3, TESTIS SIZE WITHIN NORMAL LIMITS

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8119

TRT#: 3

SEX: Male

DAY ON TEST: 717

DOSE: 3 PPM 1-1

DISP: Moribund Sacrifice

HISTO: 852779

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Brain	Epididymis	Esophagus
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Nose
Parathyroid Gland	Prostate	Salivary Glands	Skin
Spinal Cord	Stomach - Forestomach	Stomach - Glandular	Trachea
Urinary Bladder			

OBSERVATIONS

Adrenal Gland	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
	Cortex	Necrosis	Marked
Bone Marrow	Femoral	Atrophy	Moderate
Heart		Leukemia Mononuclear	
Kidney		Nephropathy	Chronic, Mild
Liver		Degeneration	Cystic, Mild
		Eosinophilic Focus	Moderate
		Hepatocellular Adenoma	
	Bile Duct	Hyperplasia	Marked
	Oval Cell	Hyperplasia	Mild
		Leukemia Mononuclear	
Lung	Portal Vein	Thrombosis	Moderate
		Chordoma	Metastatic (Uncertain Primary Site)
		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
	Mediastinal	Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 1-2			
Mammary Gland		Hyperplasia	Cystic, Moderate
Pancreas		Fibrosis	Marked
		Inflammation	Chronic Active, Marked
		Leukemia Mononuclear	
Pituitary Gland	Pars Distalis	Hyperplasia	Moderate

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:06

**First Dose M/F:** NA / NA

**Lab:** BAT

**ANIMAL ID:** 8119

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 717

**DOSE:** 3 PPM 1-1

**DISP:** Moribund Sacrifice

**HISTO:** 852779

**ORGAN AND ACCOUNTABLE SITE STATUS**

Preputial Gland		Inflammation	Chronic Active, Moderate
Spleen		Leukemia Mononuclear	
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA	TGLs = 2-10		
Thymus		Inflammation	Chronic Active, Marked
		Necrosis	Moderate
Thyroid Gland	C Cell	Hyperplasia	Moderate

**PRIMARY CAUSE OF DEATH**

-

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8120

TRT#: 3

SEX: Male

DAY ON TEST: 730

DOSE: 3 PPM 1-1

DISP: Terminal Sacrifice

HISTO: 852780

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Minimal

Eosinophilic Focus

Mild

Bile Duct

Hyperplasia

Mild

Hypertrophy

Minimal

Leukemia Mononuclear

Vacuolization Cytoplasmic

Moderate

Note: VACUOLIZ CYTO TGLs = 3-3

Spleen

Leukemia Mononuclear

Testes

Bilateral, Interstit Cell

Adenoma

[ Adenoma TGLS = 1-2,2-2 ]

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8121

TRT#: 3

SEX: Male

DAY ON TEST: 730

DOSE: 3 PPM 1-1

DISP: Terminal Sacrifice

HISTO: 852781

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen Stomach - Glandular

**OBSERVATIONS**

Kidney		Nephropathy	Chronic, Marked
Note: NEPHROPATHY	TGLs = 1-2		
Liver	Bile Duct	Basophilic Focus Hyperplasia Inflammation Vacuolization Cytoplasmic	Minimal Moderate Chronic, Multifocal, Mild Marked
Pituitary Gland	Pars Distalis	Adenoma	
[ Adenoma TGLS = 5-6 ]			
Skin		Keratoacanthoma	
[ Keratoacanthoma TGLS = 4-5 ]			
Stomach	Forestomach	Acanthosis	Moderate
	Forestomach	Inflammation	Chronic Active, Moderate
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA	TGLs = 2-3		

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL3-4, TESTIS SIZE WITHIN NORMAL LIMITS

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8122

TRT#: 3

SEX: Male

DAY ON TEST: 730

DOSE: 3 PPM 1-1

DISP: Terminal Sacrifice

HISTO: 852782

**OBSERVATIONS**

Liver		Basophilic Focus	Minimal
		Eosinophilic Focus	Mild
	Bile Duct	Hyperplasia	Moderate
		Hypertrophy	Minimal
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
		Inflammation	Chronic Active, Marked
Preputial Gland			
[ Inflammation TGLS = 3-4 ]			
Skin	Sebaceous GI	Adenoma	
	Subcut Tiss	Fibroma	
Note: ADENOMA TGLs = 2-3			
[ Fibroma TGLS = 1-2 ]			
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 4-5 ]			
Testes	Bilateral, Interstit Cell	Adenoma	
[ Adenoma TGLS = 6-7,7-8 ]			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8123

TRT#: 3

SEX: Male

DAY ON TEST: 676

DOSE: 3 PPM 1-1

DISP: Moribund Sacrifice

HISTO: 852783

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Brain	Epididymis
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Nose	Parathyroid Gland	Pituitary Gland	Prostate
Salivary Glands	Skin	Stomach - Forestomach	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
Bone Marrow	Femoral	Leukemia Mononuclear	
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Mild
Liver		Basophilic Focus	Minimal
	Bile Duct	Hyperplasia	Mild
		Hypertrophy	Minimal
		Leukemia Mononuclear	
		Alveolar/Bronchiolar Adenoma	
Lung			
Note: ALV BRON ADEN TGLs = 1-2			
Lymph Node	Mediastinal	Hemorrhage	Moderate
	Mandibular	Leukemia Mononuclear	
Note: HEMORRHAGE TGLs = 2-13			
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Mild
Preputial Gland		Carcinoma	
Note: CARCINOMA TGLs = 3-12			
Spleen		Leukemia Mononuclear	
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA TGLs = 4-11			
Thyroid Gland	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL3-12< SKIN MASS IS PREPUTIAL TUMOR

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)

**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:06

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8123

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 676

**DOSE:** 3 PPM 1-1

**DISP:** Moribund Sacrifice

**HISTO:** 852783

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Animal Note: MORIBUND SACRIFICE DUE TO PREPUTIAL GLAND TUMOR

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8124

TRT#: 3

SEX: Male

DAY ON TEST: 731

DOSE: 3 PPM 1-1

DISP: Terminal Sacrifice

HISTO: 852784

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Minimal

Eosinophilic Focus

Mild

Bile Duct

Hyperplasia

Moderate

Leukemia Mononuclear

Vacuolization Cytoplasmic

Mild

Leukemia Mononuclear

Spleen

Note: LEUKEMIA MONUC TGLs = 2-3

Testes

Bilateral, Interstit Cell

Adenoma

Note: ADENOMA TGLs = 1-2

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01  
**Test Type:** CHRONIC  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 08:38:06  
**First Dose M/F:** NA / NA  
**Lab:** BAT

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<b>ANIMAL ID:</b> 8125	<b>TRT#:</b> 3	<b>SEX:</b> Male	<b>DAY ON TEST:</b> 731
	<b>DOSE:</b> 3 PPM 1-1	<b>DISP:</b> Terminal Sacrifice	<b>HISTO:</b> 852785

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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**NORMAL**

Stomach - Forestomach	Stomach - Glandular
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**OBSERVATIONS**

Liver		Basophilic Focus	Minimal
		Eosinophilic Focus	Mild
	Bile Duct	Hyperplasia	Moderate
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 2-3 ]			
Testes	Interstit Cell	Adenoma	
	Seminif Tub	Atrophy	Moderate
	Seminif Tub	Mineralization	Mild
[ Adenoma TGLS = 3-4,5-4 ]			
[ Atrophy TGLS = 4-4 ]			
[ Mineralization TGLS = 3-4 ]			

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**PRIMARY CAUSE OF DEATH** -

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8126

TRT#: 3

SEX: Male

DAY ON TEST: 731

DOSE: 3 PPM 1-1

DISP: Terminal Sacrifice

HISTO: 852786

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Stomach - Glandular

OBSERVATIONS

Kidney		Nephropathy	Chronic, Marked
Note: NEPHROPATHY	TGLs = 3-4		
Liver		Basophilic Focus	Mild
		Degeneration	Cystic, Mild
		Hepatocellular Adenoma	
		Hyperplasia	Moderate
		Hypertrophy	Minimal
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Note: HEPATOCLR ADEN	TGLs = 2-3		
Lymph Node		Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 4-5		
Pituitary Gland		Adenoma	
Note: ADENOMA	TGLs = 5-6		
Spleen		Fibrosis	Mild
		Leukemia Mononuclear	
Stomach		Acanthosis	Moderate
		Inflammation	Chronic Active, Moderate
Testes		Adenoma	
Note: ADENOMA	TGLs = 1-2		

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8127

TRT#: 3

SEX: Male

DAY ON TEST: 520

DOSE: 3 PPM 1-1

DISP: Moribund Sacrifice

HISTO: 852787

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Nose	Parathyroid Gland	Pituitary Gland
Prostate	Salivary Glands	Skin	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	Urinary Bladder

OBSERVATIONS

Adrenal Gland	Cortex	Vacuolization Cytoplasmic	Mild
Heart		Thrombosis	
Kidney		Nephropathy	Chronic, Mild
Liver		Degeneration	Cystic, Mild
	Bile Duct	Eosinophilic Focus	Minimal
		Hyperplasia	Marked
		Hypertrophy	Minimal
		Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 2-4			
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
	Mediastinal	Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 3-2			
Mammary Gland		Hyperplasia	Cystic, Moderate
Pancreas	Acinus	Atrophy	Mild
Preputial Gland		Inflammation	Chronic Active, Mild
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLs = 1-11 ]			
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA TGLs = 4-10			
Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:06

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8127

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 520

**DOSE:** 3 PPM 1-1

**DISP:** Moribund Sacrifice

**HISTO:** 852787

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8128

TRT#: 3

SEX: Male

DAY ON TEST: 702

DOSE: 3 PPM 1-1

DISP: Moribund Sacrifice

HISTO: 852788

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Brain	Epididymis
Esophagus	Heart	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Nose	Parathyroid Gland	Pituitary Gland
Prostate	Salivary Glands	Skin	Stomach - Forestomach
Stomach - Glandular	Trachea	Urinary Bladder	

OBSERVATIONS

Adrenal Gland	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
Kidney		Nephropathy	Chronic, Moderate
Liver		Eosinophilic Focus	Marked
	Bile Duct	Hepatocellular Adenoma	Multiple
		Hyperplasia	Marked
		Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 2-4,2-12		
Note: HEPATOCLR ADEN	TGLs = 3-12		
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Moderate
Pancreas	Acinus	Atrophy	Mild
Preputial Gland		Inflammation	Chronic Active, Mild
Spleen		Leukemia Mononuclear	
		[ Leukemia Mononuclear TGLS = 1-11 ]	
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA	TGLs = 5-10,6-10		
Thymus		Leukemia Mononuclear	
Thyroid Gland	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

Animal Note: TGL7-10, TESTIS SIZE WITHIN NORMAL LIMITS

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)

**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:06

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8128

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 702

**DOSE:** 3 PPM 1-1

**DISP:** Moribund Sacrifice

**HISTO:** 852788

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8129

TRT#: 3

SEX: Male

DAY ON TEST: 731

DOSE: 3 PPM 1-1

DISP: Terminal Sacrifice

HISTO: 852789

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Eye

Retina

Atrophy

Marked

Lens

Cataract

Moderate

Note: ATROPHY TGLs = 1-2

[ Atrophy TGLS = 1-2 ]

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Moderate

Bile Duct

Hyperplasia

Marked

Oval Cell

Hyperplasia

Moderate

Leukemia Mononuclear

Note: LEUKEMIA MONUC TGLs = 6-5

Spleen

Leukemia Mononuclear

[ Leukemia Mononuclear TGLS = 2-3,3-3 ]

Testes

Bilateral, Interstit Cell

Adenoma

[ Adenoma TGLS = 4-4 ]

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL5-4, TESTIS SIZE WITHIN NORMAL LIMITS

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8130

TRT#: 3

SEX: Male

DAY ON TEST: 731

DOSE: 3 PPM 1-1

DISP: Terminal Sacrifice

HISTO: 852790

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Mild

Bile Duct

Hyperplasia

Moderate

Inflammation

Chronic, Multifocal, Minimal

Vacuolization Cytoplasmic

Mild

Note: VACUOLIZ CYTO TGLs = 1-2

Testes

Bilateral, Interstit Cell

Adenoma

Note: ADENOMA TGLs = 2-3,3-3

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8131

TRT#: 3

SEX: Male

DAY ON TEST: 734

DOSE: 3 PPM 1-1

DISP: Terminal Sacrifice

HISTO: 852791

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Minimal

Eosinophilic Focus

Mild

Bile Duct

Hyperplasia

Moderate

Hypertrophy

Minimal

Leukemia Mononuclear

Note: LEUKEMIA MONUC TGLs = 4-5

Pituitary Gland

Pars Distalis

Adenoma

Note: ADENOMA TGLs = 5-6

Spleen

Fibrosis

Mild

Leukemia Mononuclear

[ Fibrosis TGLS = 2-3 ]

Testes

Bilateral, Interstit Cell

Adenoma

Note: ADENOMA TGLs = 1-2

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL3-4, MESENTERIC NODULE IS ACCESSORY SPLEEN

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8132

TRT#: 3

SEX: Male

DAY ON TEST: 679

DOSE: 3 PPM 1-1

DISP: Moribund Sacrifice

HISTO: 852792

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Eye	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Nose	Parathyroid Gland
Pituitary Gland	Prostate	Salivary Glands	Skin
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder			

OBSERVATIONS

Adrenal Gland	Medulla	Pheochromocytoma Benign	
Heart		Degeneration	Chronic, Moderate
Kidney	Cortex	Cyst	
		Nephropathy	Chronic, Moderate
Note: CYST TGLs = 10-14			
Liver		Degeneration	Cystic, Mild
		Eosinophilic Focus	Minimal
	Bile Duct	Hyperplasia	Marked
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Note: HYPERPLASIA TGLs = 9-4			
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
	Mediastinal	Leukemia Mononuclear	
	Mesenteric	Leukemia Mononuclear	
	Pancreatic	Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 2-7,3-2,4-12,5-15			
Mammary Gland		Hyperplasia	Cystic, Moderate
Pancreas	Acinus	Atrophy	Minimal
Preputial Gland		Inflammation	Chronic Active, Mild
Spleen		Leukemia Mononuclear	
		Necrosis	Moderate

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:06

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8132

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 679

**DOSE:** 3 PPM 1-1

**DISP:** Moribund Sacrifice

**HISTO:** 852792

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

[ Leukemia Mononuclear TGLS = 6-13 ]

[ Necrosis TGLS = 7-13 ]

Testes

Bilateral, Interstit Cell

Adenoma

Note: ADENOMA

TGLs = 8-10

Thyroid Gland

C Cell

Hyperplasia

Moderate

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**PRIMARY CAUSE OF DEATH**

-

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Animal Note: TGL1-11, PIGMENT IN EYE NOT APPARENT ON MICRO,NCL

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8133

TRT#: 3

SEX: Male

DAY ON TEST: 734

DOSE: 3 PPM 1-1

DISP: Terminal Sacrifice

HISTO: 852793

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Degeneration

Cystic, Mild

Eosinophilic Focus

Mild

Bile Duct

Hyperplasia

Moderate

Hypertrophy

Mild

Leukemia Mononuclear

Vacuolization Cytoplasmic

Moderate

Note: VACUOLIZ CYTO TGLs = 3-4

Skin

Subcut Tiss

Fibroma

Note: FIBROMA TGLs = 1-2

Spleen

Leukemia Mononuclear

Testes

Bilateral, Interstit Cell

Adenoma

Note: ADENOMA TGLs = 2-3

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8134

TRT#: 3

SEX: Male

DAY ON TEST: 582

DOSE: 3 PPM 1-1

DISP: Moribund Sacrifice

HISTO: 852794

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Epididymis	Esophagus	Heart
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Lymph Node
Nose	Parathyroid Gland	Pituitary Gland	Prostate
Salivary Glands	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder		

OBSERVATIONS

Kidney		Nephropathy	Chronic, Moderate
Liver		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Lung		Fibrosarcoma	Metastatic (Skin)
Note: FIBROSARC	TGLs = 3-2,3-3		
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Pancreas	Acinus	Atrophy	Mild
Preputial Gland		Inflammation	Chronic Active, Mild
Skin	Subcut Tiss	Fibrosarcoma	
Note: FIBROSARC	TGLs = 1-11		
Spleen		Fibrosis	Mild
		Leukemia Mononuclear	
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA	TGLs = 2-10		
Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL1-11, MASS IN SUBCUTIS DOES NOT INVOLVE SALIVARY GLAND

Animal Note: MORIBUND SACRIFICE DUE TO SUBCUTIS TUMOR IN NECK

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8135

TRT#: 3

SEX: Male

DAY ON TEST: 654

DOSE: 3 PPM 1-1

DISP: Moribund Sacrifice

HISTO: 852795

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Epididymis	Esophagus	Heart	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Lymph Node	Nose
Parathyroid Gland	Prostate	Salivary Glands	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	Urinary Bladder

OBSERVATIONS

Brain		Compression	
		Hydrocephalus	Mild
Kidney		Nephropathy	Chronic, Marked
Liver	Bile Duct	Hyperplasia	Mild
		Hypertrophy	Minimal
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Moderate
		Leukemia Mononuclear	
Lung			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Moderate
Pancreas	Acinus	Atrophy	Moderate
Pituitary Gland	Pars Distalis	Adenoma	
Note: ADENOMA TGLs = 3-7			
Preputial Gland		Inflammation	Chronic Active, Moderate
Skin	Subcut Tiss	Fibroma	
Note: FIBROMA TGLs = 2-11			
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-12 ]			
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA TGLs = 4-10			
Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Moderate

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:06

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8135

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 654

**DOSE:** 3 PPM 1-1

**DISP:** Moribund Sacrifice

**HISTO:** 852795

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO PITUITARY TUMOR

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01  
Test Type: CHRONIC  
Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014  
Time Report Requested: 08:38:06  
First Dose M/F: NA / NA  
Lab: BAT

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ANIMAL ID: 8136	TRT#: 3	SEX: Male	DAY ON TEST: 734
	DOSE: 3 PPM 1-1	DISP: Terminal Sacrifice	HISTO: 852796

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ORGAN AND ACCOUNTABLE SITE STATUS

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NORMAL

Stomach - Forestomach	Stomach - Glandular
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OBSERVATIONS

Liver		Basophilic Focus	Minimal
		Eosinophilic Focus	Minimal
	Bile Duct	Hyperplasia	Mild
		Hypertrophy	Minimal
		Inflammation	Chronic Active, Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Note: LEUKEMIA MONUC TGLs = 2-3			
Spleen		Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 4-4			
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA TGLs = 1-2			

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PRIMARY CAUSE OF DEATH

-

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8137

TRT#: 3

SEX: Male

DAY ON TEST: 734

DOSE: 3 PPM 1-1

DISP: Terminal Sacrifice

HISTO: 852797

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Degeneration

Cystic, Mild

Eosinophilic Focus

Moderate

Bile Duct

Hyperplasia

Mild

Leukemia Mononuclear

Note: LEUKEMIA MONUC TGLs = 3-4

Pituitary Gland

Pars Distalis

Adenoma

Note: ADENOMA TGLs = 4-5

Spleen

Leukemia Mononuclear

Note: LEUKEMIA MONUC TGLs = 2-3

Testes

Bilateral, Interstit Cell

Adenoma

Note: ADENOMA TGLs = 1-2

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL5-6, NODULE ON PANCREAS IS ACCESSORY SPLEEN, NO DX.

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01  
**Test Type:** CHRONIC  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 08:38:06  
**First Dose M/F:** NA / NA  
**Lab:** BAT

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<b>ANIMAL ID:</b> 8138	<b>TRT#:</b> 3 <b>DOSE:</b> 3 PPM 1-1	<b>SEX:</b> Male <b>DISP:</b> Terminal Sacrifice	<b>DAY ON TEST:</b> 735 <b>HISTO:</b> 852798
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**ORGAN AND ACCOUNTABLE SITE STATUS**

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**NORMAL**

Spleen	Stomach - Forestomach	Stomach - Glandular
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**OBSERVATIONS**

Liver		Basophilic Focus	Minimal
		Eosinophilic Focus	Mild
	Bile Duct	Hyperplasia	Moderate
		Hypertrophy	Mild
		Inflammation	Chronic, Multifocal, Minimal
		Vacuolization Cytoplasmic	Mild
Testes	Bilateral, Interstit Cell	Adenoma	
[ Adenoma TGLS = 1-2 ]			

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**PRIMARY CAUSE OF DEATH**

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\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8139

TRT#: 3

SEX: Male

DAY ON TEST: 676

DOSE: 3 PPM 1-1

DISP: Moribund Sacrifice

HISTO: 852799

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Epididymis	Esophagus	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Lung	Lymph Node
Nose	Pancreas	Parathyroid Gland	Pituitary Gland
Prostate	Salivary Glands	Skin	Spleen
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder			

OBSERVATIONS

Heart		Degeneration	Chronic, Moderate
Kidney		Nephropathy	Chronic, Mild
Liver		Basophilic Focus	Minimal
		Eosinophilic Focus	Minimal
	Bile Duct	Hyperplasia	Moderate
		Hypertrophy	Minimal
		Vacuolization Cytoplasmic	Minimal
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Preputial Gland		Carcinoma	
Note: CARCINOMA TGLs = 1-12			
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA TGLs = 2-11,3-10			
Thyroid Gland	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO UNDETERMINED CAUSE

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8140

TRT#: 3

SEX: Male

DAY ON TEST: 721

DOSE: 3 PPM 1-1

DISP: Moribund Sacrifice

HISTO: 852800

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Brain	Epididymis
Esophagus	Heart	Intestine Large - Cecum	Intestine Large - Colon
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Pancreas	Parathyroid Gland	Pituitary Gland	Prostate
Salivary Glands	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder		

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
Intestine Large	Rectum	Parasite Metazoan	
Kidney		Nephropathy	Chronic, Moderate
Liver		Eosinophilic Focus	Moderate
	Bile Duct	Hyperplasia	Marked
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Moderate
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Mild
Nose	Mucosa	Inflammation	Chronic Active, Mild
Preputial Gland		Inflammation	Chronic Active, Mild
Skin	Subcut Tiss	Fibroma	
Note: FIBROMA TGLs = 1-13			
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 5-11 ]			
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA TGLs = 2-12,6-10			
Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)

**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:06

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8140

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 721

**DOSE:** 3 PPM 1-1

**DISP:** Moribund Sacrifice

**HISTO:** 852800

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA AND SKIN TUMOR

Animal Note: TGL3-10, TESTIS WITHIN NORMAL LIMITS FOR SIZE

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8141

TRT#: 3

SEX: Male

DAY ON TEST: 645

DOSE: 3 PPM 1-1

DISP: Moribund Sacrifice

HISTO: 852801

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Brain	Epididymis	Esophagus
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Nose
Pancreas	Parathyroid Gland	Pituitary Gland	Salivary Glands
Skin	Stomach - Glandular	Thymus	Trachea
Urinary Bladder			

OBSERVATIONS

Adrenal Gland	Medulla	Hyperplasia	Mild
	Cortex	Vacuolization Cytoplasmic	Moderate
Bone Marrow	Femoral	Leukemia Mononuclear	
Heart		Degeneration	Chronic, Moderate
Kidney		Nephropathy	Chronic, Moderate
Liver	Bile Duct	Hyperplasia	Moderate
		Hypertrophy	Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Marked
Note: LEUKEMIA MONUC TGLs = 2-4			
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Preputial Gland		Inflammation	Chronic Active, Mild
Prostate		Inflammation	Chronic Active, Mild
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-11 ]			
Stomach	Forestomach	Acanthosis	Marked
Testes	Bilateral, Interstit Cell	Adenoma	
[ Adenoma TGLS = 3-12 ]			
Thyroid Gland	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8142

TRT#: 3

SEX: Male

DAY ON TEST: 616

DOSE: 3 PPM 1-1

DISP: Moribund Sacrifice

HISTO: 852802

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Brain	Epididymis	Esophagus
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Lymph Node
Nose	Pancreas	Parathyroid Gland	Pituitary Gland
Prostate	Salivary Glands	Skin	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	Urinary Bladder

MISSING

Bone Marrow

OBSERVATIONS

Adrenal Gland	Cortex	Vacuolization Cytoplasmic	Mild
Bone	Femur	Osteosarcoma	
[ Osteosarcoma TGLS = 3-14 ]			
Heart		Degeneration	Chronic, Moderate
Kidney		Nephropathy	Chronic, Mild
Liver	Bile Duct	Hyperplasia	Mild
		Necrosis	Mild
Lung		Osteosarcoma	Metastatic (Bone)
Note: OSTEOSARC TGLs = 5-2,5-3			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Preputial Gland		Inflammation	Chronic Active, Mild
Spleen		Osteosarcoma	Metastatic (Bone)
Note: OSTEOSARC TGLs = 1-12,4-11			
Testes	Interstit Cell	Adenoma	
	Seminif Tub	Atrophy	Moderate
	Seminif Tub	Mineralization	Mild
Note: ADENOMA TGLs = 6-13			
[ Adenoma TGLS = 2-13 ]			
Thyroid Gland	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:06

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8142

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 616

**DOSE:** 3 PPM 1-1

**DISP:** Moribund Sacrifice

**HISTO:** 852802

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Animal Note: MORIBUND SACRIFICE DUE TO BONE TUMOR

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01  
Test Type: CHRONIC  
Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014  
Time Report Requested: 08:38:06  
First Dose M/F: NA / NA  
Lab: BAT

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ANIMAL ID: 8143	TRT#: 3	SEX: Male	DAY ON TEST: 735
	DOSE: 3 PPM 1-1	DISP: Terminal Sacrifice	HISTO: 852803

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ORGAN AND ACCOUNTABLE SITE STATUS

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NORMAL

Stomach - Forestomach	Stomach - Glandular
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OBSERVATIONS

Liver		Basophilic Focus	
		Eosinophilic Focus	Mild
	Bile Duct	Hyperplasia	Moderate
		Hypertrophy	Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Note: LEUKEMIA MONUC TGLs = 3-4			
Spleen		Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 2-3			
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA TGLs = 1-2			

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PRIMARY CAUSE OF DEATH

-

Animal Note: TGL4-5, NO DEFINED BONE LESION CAN BE FOUND, NCL

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8144

TRT#: 3

SEX: Male

DAY ON TEST: 735

DOSE: 3 PPM 1-1

DISP: Terminal Sacrifice

HISTO: 852804

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Minimal

Eosinophilic Focus

Mild

Bile Duct

Hyperplasia

Moderate

Hypertrophy

Minimal

Inflammation

Chronic, Multifocal, Minimal

Vacuolization Cytoplasmic

Mild

Inflammation

Chronic Active, Moderate

Preputial Gland

Note: INFLAMMATION TGLs = 3-3

Testes

Interstitial Cell

Adenoma

Seminif Tub

Atrophy

Mild

Note: ADENOMA TGLs = 1-2

Note: ADENOMA TGLs = 1-2

Note: ATROPHY TGLs = 2-2

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8145

TRT#: 3

SEX: Male

DAY ON TEST: 735

DOSE: 3 PPM 1-1

DISP: Terminal Sacrifice

HISTO: 852805

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Minimal

Eosinophilic Focus

Moderate

Hepatodiaphragmatic Nodule

Bile Duct

Hyperplasia

Moderate

Hypertrophy

Mild

Inflammation

Chronic, Multifocal, Minimal

Vacuolization Cytoplasmic

Mild

Note: ANOM HEPAT LOB TGLs = 2-3

Note: ANOM HEPAT LOB USED FOR HDN

Spleen

Leukemia Mononuclear

Testes

Bilateral, Interstit Cell

Adenoma

Note: ADENOMA TGLs = 1-2

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL2-3, ANOM HEPAT LOB IS A HDN

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8146

TRT#: 3

SEX: Male

DAY ON TEST: 487

DOSE: 3 PPM 1-1

DISP: Natural Death

HISTO: 852806

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Bone	Bone Marrow	Brain	Epididymis
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Lymph Node	Nose	Pancreas	Parathyroid Gland
Prostate	Salivary Glands	Skin	Stomach - Forestomach
Stomach - Glandular	Testes	Thymus	Trachea
Urinary Bladder			

**OBSERVATIONS**

Adrenal Gland	Medulla	Pheochromocytoma Complex	
Note: PHEOCHROM CPLX TGLs = 1-11			
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Mild
Liver	Bile Duct	Hyperplasia	Moderate
		Hypertrophy	Mild
		Vacuolization Cytoplasmic	Marked
Lung		Pheochromocytoma Complex	Metastatic (Adrenal Gland)
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Pituitary Gland	Pars Distalis	Cyst	
Preputial Gland		Inflammation	Chronic Active, Mild
Spleen		Depletion Lymphoid	Mild
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: CAUSE OF DEATH IS ADRENAL TUMOR

Animal Note: TGL1-11, MASS IS ADRENAL, NOT KIDNEY

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8147

TRT#: 3

SEX: Male

DAY ON TEST: 736

DOSE: 3 PPM 1-1

DISP: Terminal Sacrifice

HISTO: 852807

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Minimal

Eosinophilic Focus

Mild

Bile Duct

Hyperplasia

Mild

Hypertrophy

Mild

Inflammation

Chronic, Multifocal, Mild

Vacuolization Cytoplasmic

Mild

Dilatation

Moderate

Seminal Vesicle

Note: DILATATION TGLs = 2-3

Testes

Bilateral, Interstit Cell

Adenoma

Note: ADENOMA TGLs = 1-2

Urinary Bladder

Calculus Micro Observation Only

Note: CALCUS MIC OBS TGLs = 3-4

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8148

TRT#: 3

SEX: Male

DAY ON TEST: 736

DOSE: 3 PPM 1-1

DISP: Terminal Sacrifice

HISTO: 852808

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Eye

Retina

Atrophy

Mild

Note: ATROPHY

TGLs = 5-4

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Mild

Hepatocellular Adenoma

Bile Duct

Hyperplasia

Mild

Hypertrophy

Minimal

Leukemia Mononuclear

Vacuolization Cytoplasmic

Moderate

Note: HEPATOCLR ADEN TGLs = 4-3

Spleen

Leukemia Mononuclear

Testes

Bilateral, Interstit Cell

Adenoma

Note: ADENOMA

TGLs = 1-2,3-2

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL2-2, TESTIS SIZE WITHIN NORMAL LIMITS

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8149

TRT#: 3

SEX: Male

DAY ON TEST: 736

DOSE: 3 PPM 1-1

DISP: Terminal Sacrifice

HISTO: 852809

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Minimal

Eosinophilic Focus

Mild

Bile Duct

Hyperplasia

Moderate

Inflammation

Chronic, Multifocal, Mild

Vacuolization Cytoplasmic

Mild

Spleen

Fibrosarcoma

Fibrosis

Marked

Leukemia Mononuclear

[ Fibrosarcoma TGLS = 4-3 ]

Testes

Bilateral, Interstit Cell

Adenoma

Note: ADENOMA

TGLs = 1-2,2-2

**PRIMARY CAUSE OF DEATH**

-

Animal Note: TGL3-2, TESTIS SIZE WITHIN NORMAL LIMITS

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8150

TRT#: 3

SEX: Male

DAY ON TEST: 736

DOSE: 3 PPM 1-1

DISP: Terminal Sacrifice

HISTO: 852810

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Minimal

Eosinophilic Focus

Mild

Bile Duct

Hyperplasia

Marked

Hypertrophy

Minimal

Inflammation

Chronic, Multifocal, Mild

Vacuolization Cytoplasmic

Moderate

Note: VACUOLIZ CYTO TGLs = 2-3

Testes

Bilateral, Interstit Cell

Adenoma

[ Adenoma TGLS = 1-2 ]

Thyroid Gland

C Cell

Carcinoma

Note: CARCINOMA TGLs = 3-4

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8151

TRT#: 4

SEX: Male

DAY ON TEST: 727

DOSE: 10 PPM 0-3

DISP: Terminal Sacrifice

HISTO: 852401

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Kidney

Cortex

Cyst

Nephropathy

Chronic, Marked

Note: NEPHROPATHY TGLs = 3-4

[ Nephropathy TGLS = 4-5 ]

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Moderate

Hepatocellular Adenoma

Multiple

Hyperplasia

Mild

Bile Duct

Hyperplasia

Mild

Oval Cell

Hypertrophy

Minimal

Leukemia Mononuclear

Vacuolization Cytoplasmic

Mild

Note: HEPATOCLR ADEN TGLs = 6-7

Spleen

Leukemia Mononuclear

[ Leukemia Mononuclear TGLS = 1-2 ]

Testes

Bilateral, Interstit Cell

Adenoma

Note: ADENOMA TGLs = 2-3

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL7-8, NO NODULES, ONLY PLICAL FOLDS WHICH ARE NORMAL

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8152

TRT#: 4

SEX: Male

DAY ON TEST: 727

DOSE: 10 PPM 0-3

DISP: Terminal Sacrifice

HISTO: 852402

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Kidney

Nephropathy

Chronic, Marked

Liver

Basophilic Focus

Minimal

Eosinophilic Focus

Moderate

Bile Duct

Hyperplasia

Moderate

Hypertrophy

Mild

Leukemia Mononuclear

Pituitary Gland

Pars Distalis

Adenoma

Note: ADENOMA

TGLs = 3-4

Spleen

Leukemia Mononuclear

Testes

Bilateral, Interstit Cell

Adenoma

Note: ADENOMA

TGLs = 4-2

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL1, NO KINDNEY CYST FOUND AT TRIM

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8153

TRT#: 4

SEX: Male

DAY ON TEST: 568

DOSE: 10 PPM 0-3

DISP: Moribund Sacrifice

HISTO: 852403

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Epididymis	Esophagus	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Lung	Lymph Node - Mesenteric
Lymph Node - Thoracic	Nose	Parathyroid Gland	Salivary Glands
Spleen	Stomach - Forestomach	Stomach - Glandular	Trachea
Urinary Bladder			

MISSING

Thymus

OBSERVATIONS

Heart		Degeneration	Chronic, Moderate
Kidney		Nephropathy	Chronic, Moderate
Liver		Eosinophilic Focus	Mild
	Bile Duct	Hyperplasia	Mild
		Hypertrophy	Mild
		Inflammation	Chronic, Multifocal, Mild
Pancreas	Acinus	Atrophy	Minimal
Pituitary Gland	Pars Distalis	Hyperplasia	Mild
Preputial Gland		Inflammation	Chronic Active, Moderate
Prostate		Inflammation	Chronic Active, Mild
Skin	Subcut Tiss	Fibrosarcoma	
Note: FIBROSARC	TGLs = 1-11		
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA	TGLs = 3-10		
Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA AND SUBCUTIS TUMOR

Animal Note: MORIBUND SACRIFICE DUE TO SUBCUTIS TUMOR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8154

TRT#: 4

SEX: Male

DAY ON TEST: 727

DOSE: 10 PPM 0-3

DISP: Terminal Sacrifice

HISTO: 852404

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Intestine Small - Ileum

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Minimal

Eosinophilic Focus

Mild

Bile Duct

Hyperplasia

Mild

Hypertrophy

Moderate

Inflammation

Chronic, Multifocal, Mild

Vacuolization Cytoplasmic

Marked

[ Hyperplasia TGLS = 1-3 ]

Testes

Bilateral, Interstit Cell

Adenoma

Note: ADENOMA

TGLs = 3-2

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL4-5, NO NODULE, ONLY LYMPHOID PATCH

Animal Note: TGL2-4, NO NODULE, ONLY LYMPHOID PATCH

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8155

TRT#: 4

SEX: Male

DAY ON TEST: 686

DOSE: 10 PPM 0-3

DISP: Natural Death

HISTO: 852405

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Epididymis	Esophagus
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Lymph Node
Mammary Gland	Nose	Parathyroid Gland	Prostate
Salivary Glands	Skin	Stomach - Forestomach	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
Brain		Hemorrhage	Moderate
Note: HEMORRHAGE	TGLs = 4-5		
Heart		Degeneration	Chronic, Mild
		Leukemia Mononuclear	
Kidney		Leukemia Mononuclear	
		Nephropathy	Chronic, Moderate
Liver	Bile Duct	Hyperplasia	Marked
Note: LEUKEMIA MONUC	TGLs = 2-4,2-12	Leukemia Mononuclear	
Lung		Leukemia Mononuclear	
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Pancreas	Acinus	Atrophy	Mild
Pituitary Gland	Pars Distalis	Hyperplasia	Mild
Note: HYPERPLASIA	TGLs = 3-7		
Preputial Gland		Inflammation	Chronic Active, Mild
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-11 ]			
Testes	Bilateral, Interstit Cell	Adenoma	
	Tunic	Mesothelioma Malignant	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:06

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8155

**TRT#:** 4

**SEX:** Male

**DAY ON TEST:** 686

**DOSE:** 10 PPM 0-3

**DISP:** Natural Death

**HISTO:** 852405

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Note: ADENOMA TGLs = 5-10

Thyroid Gland

C Cell

Hyperplasia

Moderate

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**PRIMARY CAUSE OF DEATH**

-

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Animal Note: CAUSE OF DEATH, LEUKEMIA MONONUCLEAR

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8156

TRT#: 4

SEX: Male

DAY ON TEST: 716

DOSE: 10 PPM 0-3

DISP: Moribund Sacrifice

HISTO: 852406

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Brain	Epididymis
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Nose	Parathyroid Gland	Prostate	Salivary Glands
Skin	Thymus	Trachea	Urinary Bladder

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
Heart		Degeneration	Chronic, Mild
Kidney		Leukemia Mononuclear	
		Nephropathy	Chronic, Marked
[ Nephropathy TGLS = 4-1 ]			
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Marked
	Oval Cell	Hyperplasia	Mild
		Leukemia Mononuclear	
Note: HEPATOCLR ADEN	TGLs = 3-12,2-4,2-14		
Note: LEUKEMIA MONUC	TGLs = 2-4,2-14,9-13,3-12		
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
	Mediastinal	Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 7-9,8-15		
Mammary Gland		Hyperplasia	Cystic, Moderate
Pancreas	Acinus	Atrophy	Minimal
Pituitary Gland	Pars Distalis	Adenoma	
Note: ADENOMA	TGLs = 1-7		
Preputial Gland		Inflammation	Chronic Active, Mild
Spleen		Leukemia Mononuclear	

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8156

TRT#: 4

SEX: Male

DAY ON TEST: 716

DOSE: 10 PPM 0-3

DISP: Moribund Sacrifice

HISTO: 852406

**ORGAN AND ACCOUNTABLE SITE STATUS**

[ Leukemia Mononuclear TGLS = 6-11 ]

Stomach	Forestomach	Acanthosis	Moderate
	Forestomach	Inflammation	Chronic Active, Marked
	Forestomach	Ulcer	Moderate
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA	TGLs = 5-10		
Thyroid Gland	C Cell	Adenoma	
	Follicular Cel	Adenoma	
	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8157

TRT#: 4

SEX: Male

DAY ON TEST: 728

DOSE: 10 PPM 0-3

DISP: Terminal Sacrifice

HISTO: 852407

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Minimal

Degeneration

Cystic, Mild

Eosinophilic Focus

Moderate

Bile Duct

Hyperplasia

Moderate

Hypertrophy

Mild

Vacuolization Cytoplasmic

Mild

Inflammation

Chronic Active, Moderate

Preputial Gland

Note: INFLAMMATION TGLs = 2-4

Skin

Subcut Tiss

Fibroma

Note: FIBROMA TGLs = 1-3

Testes

Bilateral, Interstit Cell

Adenoma

Note: ADENOMA TGLs = 3-5

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8158

TRT#: 4

SEX: Male

DAY ON TEST: 563

DOSE: 10 PPM 0-3

DISP: Moribund Sacrifice

HISTO: 852408

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Adrenal Gland - Medulla	Bone	Brain	Epididymis
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Nose	Parathyroid Gland	Pituitary Gland	Prostate
Salivary Glands	Skin	Stomach - Glandular	Thymus
Trachea	Urinary Bladder		

**OBSERVATIONS**

Adrenal Gland	Cortex	Hyperplasia	Mild
Bone Marrow	Femoral	Leukemia Mononuclear	
Heart		Degeneration	Chronic, Moderate
Kidney		Nephropathy	Chronic, Moderate
Liver	Bile Duct	Hyperplasia	Marked
		Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 2-4			
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Moderate
Preputial Gland		Inflammation	Chronic Active, Mild
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLs = 1-11 ]			
Stomach	Forestomach	Acanthosis	Moderate
	Forestomach	Inflammation	Chronic Active, Moderate
Note: INFLAMMATION TGLs = 3-12			
Testes	Bilateral, Interstit Cell	Adenoma	
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8159

TRT#: 4

SEX: Male

DAY ON TEST: 717

DOSE: 10 PPM 0-3

DISP: Moribund Sacrifice

HISTO: 852409

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Epididymis	Esophagus	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Lung	Nose
Pancreas	Parathyroid Gland	Salivary Glands	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	Urinary Bladder

OBSERVATIONS

Eye	Retina	Atrophy	Marked
	Lens	Cataract	Moderate
Note: ATROPHY	TGLs = 1-11		
Note: CATARACT	TGLs = 1-11		
Heart		Degeneration	Chronic, Moderate
Kidney		Nephropathy	Chronic, Moderate
Liver		Basophilic Focus	Minimal
		Eosinophilic Focus	Moderate
	Bile Duct	Hepatocellular Adenoma	
		Hyperplasia	Moderate
		Leukemia Mononuclear	
Note: [ EOSIN FOCUS ]	TGLs = 4-4		
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Moderate
Pituitary Gland	Pars Distalis	Adenoma	
Note: ADENOMA	TGLs = 2-7		
Preputial Gland		Inflammation	Chronic Active, Mild
Prostate		Inflammation	Chronic Active, Mild
Skin	Subcut Tiss	Neurofibrosarcoma	
Note: NEUROFIBROSARC	TGLs = 3-12		
Spleen		Leukemia Mononuclear	
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA	TGLs = 5-10		

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:06

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8159

**TRT#:** 4

**SEX:** Male

**DAY ON TEST:** 717

**DOSE:** 10 PPM 0-3

**DISP:** Moribund Sacrifice

**HISTO:** 852409

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Thyroid Gland

C Cell

Hyperplasia

Mild

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PRIMARY CAUSE OF DEATH

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Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA AND LIVER TUMOR

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8160

TRT#: 4

SEX: Male

DAY ON TEST: 597

DOSE: 10 PPM 0-3

DISP: Moribund Sacrifice

HISTO: 852410

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Epididymis	Esophagus	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Nose	Parathyroid Gland
Salivary Glands	Skin	Stomach - Glandular	Trachea
Urinary Bladder			

OBSERVATIONS

Adrenal Gland	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
Bone Marrow	Femoral	Leukemia Mononuclear	
Brain		Hemorrhage	Mild
Note: HEMORRHAGE	TGLs = 4-5		
Heart		Degeneration	Chronic, Moderate
		Leukemia Mononuclear	
Kidney		Leukemia Mononuclear	
		Nephropathy	Chronic, Mild
Liver	Bile Duct	Hyperplasia	Marked
		Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 2-4		
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
	Mediastinal	Leukemia Mononuclear	
	Mesenteric	Leukemia Mononuclear	
	Renal	Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 3-11,8-14,9-15		
Mammary Gland		Hyperplasia	Cystic, Moderate
Pancreas	Acinus	Atrophy	Minimal
		Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 5-12		
Pituitary Gland	Pars Distalis	Leukemia Mononuclear	
Preputial Gland		Inflammation	Chronic Active, Mild

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8160

TRT#: 4

SEX: Male

DAY ON TEST: 597

DOSE: 10 PPM 0-3

DISP: Moribund Sacrifice

HISTO: 852410

**ORGAN AND ACCOUNTABLE SITE STATUS**

Prostate		Inflammation	Chronic Active, Mild
Spleen		Leukemia Mononuclear	
		Necrosis	Moderate
Note: NECROSIS	TGLs = 6-13		
[ Leukemia Mononuclear	TGLS = 1-13 ]		
Stomach	Forestomach	Squamous Cell Carcinoma	
Note: SQUAM CEL CARC	TGLs = 10-16		
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA	TGLs = 7-10		
Thymus		Leukemia Mononuclear	
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8161

TRT#: 4

SEX: Male

DAY ON TEST: 728

DOSE: 10 PPM 0-3

DISP: Terminal Sacrifice

HISTO: 852411

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Stomach - Forestomach

Stomach - Glandular

OBSERVATIONS

Eye

Retina

Atrophy

Marked

Lens

Cataract

Marked

Note: CATARACT TGLs = 4-5

Note: ATROPHY TGLs = 4-5

Liver

Eosinophilic Focus

Moderate

Hepatocellular Adenoma

Hypertrophy

Mild

Leukemia Mononuclear

Vacuolization Cytoplasmic

Mild

Note: [ HYPERTROPHY ] TGLs = 2-3

Spleen

Leukemia Mononuclear

Note: LEUKEMIA MONUC TGLs = 1-2

Testes

Bilateral, Interstit Cell

Adenoma

Note: ADENOMA TGLs = 3-4

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL5-1, NO FOCUS ONLY LYMPHOID PATCH

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8162

TRT#: 4

SEX: Male

DAY ON TEST: 728

DOSE: 10 PPM 0-3

DISP: Terminal Sacrifice

HISTO: 852412

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Mild

Bile Duct

Hyperplasia

Mild

Hypertrophy

Mild

Leukemia Mononuclear

Vacuolization Cytoplasmic

Moderate

Note: VACUOLIZ CYTO TGLs = 3-2

Note: LEUKEMIA MONUC TGLs = 2-2

Pituitary Gland

Pars Distalis

Hyperplasia

Moderate

Note: HYPERPLASIA TGLs = 1-3

Spleen

Leukemia Mononuclear

Note: LEUKEMIA MONUC TGLs = 5-1

Testes

Bilateral, Interstit Cell

Adenoma

Note: ADENOMA TGLs = 4-4

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8163

TRT#: 4

SEX: Male

DAY ON TEST: 714

DOSE: 10 PPM 0-3

DISP: Moribund Sacrifice

HISTO: 852413

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Epididymis	Esophagus	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Lymph Node	Nose
Parathyroid Gland	Pituitary Gland	Prostate	Salivary Glands
Skin	Stomach - Glandular	Trachea	Urinary Bladder

MISSING

Thymus

OBSERVATIONS

Eye	Retina	Atrophy	Marked
	Lens	Cataract	Moderate
Note: ATROPHY TGLs = 1-12			
Note: CATARACT TGLs = 1-11			
Heart		Degeneration	Chronic, Moderate
Kidney		Nephropathy	Chronic, Marked
Liver		Basophilic Focus	Mild
		Eosinophilic Focus	Moderate
	Bile Duct	Hyperplasia	Moderate
		Hypertrophy	Moderate
		Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 4-4			
Lung		Alveolar/Bronchiolar Carcinoma	
Note: ALV BRON CARC TGLs = 5-14			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Moderate
Preputial Gland		Carcinoma	
Note: CARCINOMA TGLs = 2-11			
Spleen		Leukemia Mononuclear	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:06

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8163

**TRT#:** 4

**SEX:** Male

**DAY ON TEST:** 714

**DOSE:** 10 PPM 0-3

**DISP:** Moribund Sacrifice

**HISTO:** 852413

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Leukemia Mononuclear TGLS = 3-13 ]

Stomach	Forestomach	Cyst Epithelial Inclusion	
Testes	Bilateral, Interstit Cell	Adenoma	
Thyroid Gland	C Cell	Hyperplasia	Mild

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**PRIMARY CAUSE OF DEATH**

-

Animal Note: MORIBUND SACRIFICE DUE TO PREPUTIAL GLAND TUMOR

Animal Note: TGL3-11, THE SKIN MASS IS FROM THE PREPUTIAL GLAND

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\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8164

TRT#: 4

SEX: Male

DAY ON TEST: 674

DOSE: 10 PPM 0-3

DISP: Natural Death

HISTO: 852414

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Epididymis	Esophagus	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Lung	Lymph Node
Nose	Parathyroid Gland	Prostate	Salivary Glands
Skin	Spleen	Stomach - Forestomach	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	

MISSING

Mammary Gland

OBSERVATIONS

Heart		Degeneration	Chronic, Moderate
Kidney		Nephropathy	Chronic, Marked
Liver		Basophilic Focus	Mild
		Eosinophilic Focus	
	Bile Duct	Hyperplasia	Mild
Note: EOSIN FOCUS TGLs = 3-4			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Pancreas	Acinus	Atrophy	Mild
Pituitary Gland	Pars Distalis	Adenoma	
Note: ADENOMA TGLs = 4-7			
Preputial Gland		Carcinoma	
Note: CARCINOMA TGLs = 1-11			
Testes	Interstit Cell	Adenoma	
	Interstit Cell	Hyperplasia	Moderate
Note: ADENOMA TGLs = 5-10			
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL2-4, LIVER SIZE IS WITHIN NORMAL LIMITS

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:06

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8164

**TRT#:** 4

**SEX:** Male

**DAY ON TEST:** 674

**DOSE:** 10 PPM 0-3

**DISP:** Natural Death

**HISTO:** 852414

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Animal Note: POSSIBLE CAUSE OF DEATH, PITUITARY TUMOR

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8165

TRT#: 4

SEX: Male

DAY ON TEST: 729

DOSE: 10 PPM 0-3

DISP: Terminal Sacrifice

HISTO: 852415

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Brain	Spleen	Stomach - Forestomach	Stomach - Glandular
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**OBSERVATIONS**

Liver	Bile Duct	Eosinophilic Focus Hyperplasia Hypertrophy Inflammation Vacuolization Cytoplasmic	Mild Moderate Moderate Chronic, Multifocal, Mild Marked
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Note: [ INFLAMMATION ] TGLs = 5-6

Preputial Gland

Note: CARCINOMA TGLs = 1-2,1-3

Carcinoma

Testes

Bilateral, Interstit Cell

Adenoma

Note: ADENOMA TGLs = 2-4

**PRIMARY CAUSE OF DEATH**

-

Animal Note: TGL7-1, NO NODULE IN STOMACH, ONLY LYMPHOID PATCH

Animal Note: TGL3-5, NO DEFORMITY NOTED ON MICRO, WITHIN NORMAL LIMITS

Animal Note: TGL6-2.1, NO LESION FOUND IN WET TISSUE, NCL

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

<b>ANIMAL ID:</b> 8166	<b>TRT#:</b> 4	<b>SEX:</b> Male	<b>DAY ON TEST:</b> 729
	<b>DOSE:</b> 10 PPM 0-3	<b>DISP:</b> Terminal Sacrifice	<b>HISTO:</b> 852416

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Eye	Retina	Atrophy	Marked
	Lens	Cataract	Moderate
Note: ATROPHY TGLs = 1-2 [ Atrophy TGLS = 1-2 ]			
Liver		Basophilic Focus	Minimal
		Eosinophilic Focus	Mild
	Bile Duct	Hyperplasia	Marked
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Note: [ EOSIN FOCUS ] TGLs = 4-5			
Mesentery	Artery	Inflammation	Chronic Active, Marked
Note: INFLAMMATION TGLs = 6-6			
Pituitary Gland	Pars Distalis	Adenoma	
[ Adenoma TGLS = 7-7 ]			
Skin		Fibroma	
Note: [ FIBROMA ] TGLs = 2-3			
Spleen		Fibrosis	Mild
		Leukemia Mononuclear	
Note: FIBROSIS TGLs = 5-1			
Testes	Bilateral, Interstit Cell	Adenoma	
[ Adenoma TGLS = 3-4 ]			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01  
Test Type: CHRONIC  
Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014  
Time Report Requested: 08:38:06  
First Dose M/F: NA / NA  
Lab: BAT

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ANIMAL ID: 8167	TRT#: 4	SEX: Male	DAY ON TEST: 729
	DOSE: 10 PPM 0-3	DISP: Terminal Sacrifice	HISTO: 852417

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ORGAN AND ACCOUNTABLE SITE STATUS

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NORMAL

Stomach - Forestomach	Stomach - Glandular
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OBSERVATIONS

Liver		Basophilic Focus	Minimal
		Eosinophilic Focus	Mild
	Bile Duct	Hyperplasia	Marked
		Hypertrophy	Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Moderate
Note: VACUOLIZ CYTO	TGLs = 3-4		
Preputial Gland		Carcinoma	
		Inflammation	Chronic Active, Marked
Note: INFLAMMATION	TGLs = 2-3		
Spleen		Leukemia Mononuclear	
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA	TGLs = 1-2		

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PRIMARY CAUSE OF DEATH

-

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8168

TRT#: 4

SEX: Male

DAY ON TEST: 730

DOSE: 10 PPM 0-3

DISP: Terminal Sacrifice

HISTO: 852418

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Degeneration

Cystic, Mild

Eosinophilic Focus

Moderate

Bile Duct

Hyperplasia

Moderate

Hypertrophy

Moderate

Leukemia Mononuclear

Vacuolization Cytoplasmic

Marked

Note: VACUOLIZ CYTO TGLs = 1-3

Spleen

Leukemia Mononuclear

Testes

Bilateral, Interstit Cell

Adenoma

Note: ADENOMA TGLs = 2-3,3-3

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8169

TRT#: 4

SEX: Male

DAY ON TEST: 669

DOSE: 10 PPM 0-3

DISP: Natural Death

HISTO: 852419

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Epididymis	Esophagus	Heart
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Islets, Pancreatic	Lung	Lymph Node
Nose	Parathyroid Gland	Preputial Gland	Prostate
Salivary Glands	Skin	Stomach - Glandular	Thymus
Trachea	Urinary Bladder		

OBSERVATIONS

Kidney		Nephropathy	Chronic, Marked
Liver		Basophilic Focus	Minimal
	Bile Duct	Hyperplasia	Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Mild
Pituitary Gland	Pars Distalis	Adenoma	
Note: ADENOMA TGLs = 2-7			
Spleen		Leukemia Mononuclear	
Stomach	Forestomach	Ulcer	Marked
Note: ULCER TGLs = 3-6			
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA TGLs = 1-10			
Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL4-2,4-3, RED LUNGS DUE TO POST MORTEM CHANGES,NSL

Animal Note: CAUSE OF DEATH, PERFORATED STOMACH

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8170

TRT#: 4

SEX: Male

DAY ON TEST: 730

DOSE: 10 PPM 0-3

DISP: Terminal Sacrifice

HISTO: 852420

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Degeneration

Cystic, Moderate

Eosinophilic Focus

Marked

Hepatocellular Adenoma

Multiple

Bile Duct

Hyperplasia

Marked

Oval Cell

Hyperplasia

Mild

Leukemia Mononuclear

Vacuolization Cytoplasmic

Marked

Note: HEPATOCLR ADEN TGLs = 4-4,4-5

Spleen

Leukemia Mononuclear

[ Leukemia Mononuclear TGLS = 3-2 ]

Testes

Bilateral, Interstit Cell

Adenoma

Note: ADENOMA TGLs = 1-3

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL2-3, TESTIS SIZE WITHIN NORMAL LIMITS

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8171

TRT#: 4

SEX: Male

DAY ON TEST: 730

DOSE: 10 PPM 0-3

DISP: Terminal Sacrifice

HISTO: 852421

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Spleen Stomach - Glandular

OBSERVATIONS

Liver		Basophilic Focus	Minimal
		Eosinophilic Focus	Marked
	Bile Duct	Hyperplasia	Moderate
		Hypertrophy	Moderate
		Inflammation	Chronic, Multifocal, Mild
		Vacuolization Cytoplasmic	Marked
Note: [ HYPERTROPHY ] TGLs = 4-4			
Skin		Trichoepithelioma	
Note: TRICHOEPITHEL TGLs = 3-2			
Stomach	Forestomach	Inflammation	Chronic Active, Moderate
	Forestomach	Ulcer	Moderate
Note: ULCER TGLs = 5-5			
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA TGLs = 1-3,2-3			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8172

TRT#: 4

SEX: Male

DAY ON TEST: 731

DOSE: 10 PPM 0-3

DISP: Terminal Sacrifice

HISTO: 852422

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Preputial Gland

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Minimal

Eosinophilic Focus

Moderate

Bile Duct

Hyperplasia

Moderate

Hypertrophy

Mild

Leukemia Mononuclear

Vacuolization Cytoplasmic

Marked

Pituitary Gland

Pars Distalis

Adenoma

Note: ADENOMA

TGLs = 5-5

Spleen

Leukemia Mononuclear

Testes

Bilateral, Interstit Cell

Adenoma

Note: ADENOMA

TGLs = 2-3

**PRIMARY CAUSE OF DEATH**

-

Animal Note: TGL6-6, NO NODULE, ONLY LYMPHOID PATCH

Animal Note: TGL1-2, NCL, CROSS SECTION OF PENIS IN SHEATH

Animal Note: TGL3-3, TESTIS SIZE WITHIN NORMAL LIMITS

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8173

TRT#: 4

SEX: Male

DAY ON TEST: 707

DOSE: 10 PPM 0-3

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Brain	Epididymis
Esophagus	Heart	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Jejunum	Islets, Pancreatic
Lung	Lymph Node - Mesenteric	Nose	Pancreas
Parathyroid Gland	Pituitary Gland	Prostate	Salivary Glands
Skin	Spleen	Stomach - Forestomach	Stomach - Glandular
Trachea	Urinary Bladder		

MISSING

Preputial Gland	Thymus
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OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Medulla	Hyperplasia	Mild
Intestine Small	Ileum	Adenocarcinoma	
Note: ADENOCARC	TGLs = 1-11		
Kidney		Nephropathy	Chronic, Mild
Liver		Adenocarcinoma	Metastatic (Intestine Small)
		Eosinophilic Focus	Mild
	Bile Duct	Hyperplasia	Moderate
Note: ADENOCARC	TGLs = 3-4,4-4,4-12		
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA	TGLs = 5-10		
Thyroid Gland	C Cell	Hyperplasia	Mild
Urin Bladder			
Note: MORIBUND SACRIFICE DUE TO INTESTINAL TUMOR			

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL1-11, NORMAL TISSUE LOOKS LIKE SMALL INTESTINE

Animal Note: MORIBUND SACRIFICE DUE TO INTESTINAL TUMOR

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:06

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8173

**TRT#:** 4

**SEX:** Male

**DAY ON TEST:** 707

**DOSE:** 10 PPM 0-3

**DISP:** Moribund Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Animal Note: TGL2-6, MESENTERIC LYMPH NODE NORMAL ON MICRO

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01  
Test Type: CHRONIC  
Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014  
Time Report Requested: 08:38:06  
First Dose M/F: NA / NA  
Lab: BAT

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ANIMAL ID: 8174	TRT#: 4 DOSE: 10 PPM 0-3	SEX: Male DISP: Terminal Sacrifice	DAY ON TEST: 731 HISTO: 852424
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ORGAN AND ACCOUNTABLE SITE STATUS

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NORMAL

Spleen	Stomach - Forestomach	Stomach - Glandular
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OBSERVATIONS

Liver		Basophilic Focus	Mild
		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	
	Bile Duct	Hyperplasia	Moderate
		Hypertrophy	Mild
		Vacuolization Cytoplasmic	Marked
Note: HEPATOCLR ADEN TGLs = 3-4			
Testes	Bilateral, Interstit Cell	Adenoma	
[ Adenoma TGLS = 1-2 ]			

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PRIMARY CAUSE OF DEATH

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8175

TRT#: 4

SEX: Male

DAY ON TEST: 731

DOSE: 10 PPM 0-3

DISP: Terminal Sacrifice

HISTO: 852425

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Minimal

Eosinophilic Focus

Moderate

Bile Duct

Hyperplasia

Mild

Hypertrophy

Moderate

Leukemia Mononuclear

Vacuolization Cytoplasmic

Marked

Note: [ HYPERTROPHY ] TGLs = 4-4

Mammary Gland

Fibroadenoma

Note: FIBROADENOMA TGLs = 1-2

Spleen

Leukemia Mononuclear

Testes

Bilateral, Interstit Cell

Adenoma

Note: ADENOMA TGLs = 2-3,3-3

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL1-2, SKIN MASS IS MAMMARY TUMOR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8176

TRT#: 4

SEX: Male

DAY ON TEST: 700

DOSE: 10 PPM 0-3

DISP: Moribund Sacrifice

HISTO: 852426

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Brain	Epididymis	Esophagus
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Nose
Pancreas	Parathyroid Gland	Pituitary Gland	Salivary Glands
Skin	Stomach - Forestomach	Stomach - Glandular	Trachea
Urinary Bladder			

OBSERVATIONS

Adrenal Gland	Cortex	Hypertrophy	Mild
	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
Bone Marrow	Femoral	Leukemia Mononuclear	
Heart		Degeneration	Chronic, Moderate
Kidney		Nephropathy	Chronic, Marked
		Nephropathy	Chronic, Marked
Liver		Eosinophilic Focus	Mild
	Bile Duct	Hyperplasia	Marked
		Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 2-4			
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
	Mesenteric	Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 5-13			
Mammary Gland		Hyperplasia	Cystic, Moderate
Preputial Gland		Inflammation	Chronic Active, Mild
Prostate		Leukemia Mononuclear	
Spleen		Leukemia Mononuclear	
		Necrosis	Mild
[ Necrosis TGLS = 1-12 ]			
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA TGLs = 4-10			

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:06

**First Dose M/F:** NA / NA

**Lab:** BAT

---

**ANIMAL ID:** 8176

**TRT#:** 4

**SEX:** Male

**DAY ON TEST:** 700

**DOSE:** 10 PPM 0-3

**DISP:** Moribund Sacrifice

**HISTO:** 852426

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

Thymus

Leukemia Mononuclear

Thyroid Gland

C Cell

Hyperplasia

Moderate

---

**PRIMARY CAUSE OF DEATH**

-

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Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

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\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8177

TRT#: 4

SEX: Male

DAY ON TEST: 734

DOSE: 10 PPM 0-3

DISP: Terminal Sacrifice

HISTO: 852427

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Stomach - Forestomach

Stomach - Glandular

OBSERVATIONS

Intestine Small

Jejunum

Adenocarcinoma

Note: ADENOCARC TGLs = 2-3

Liver

Basophilic Focus

Minimal

Degeneration

Cystic, Mild

Eosinophilic Focus

Mild

Hepatocellular Adenoma

Multiple

Bile Duct

Hyperplasia

Moderate

Hypertrophy

Moderate

Leukemia Mononuclear

Vacuolization Cytoplasmic

Moderate

Note: [ HYPERTROPHY ] TGLs = 3-1

[ Hyperplasia TGLS = 4-5,5-4 ]

Spleen

Leukemia Mononuclear

Testes

Bilateral, Interstit Cell

Adenoma

Note: ADENOMA TGLs = 1-2

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL6-6, NO NODULE ONLY LYMPHOID PATCH

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8178

TRT#: 4

SEX: Male

DAY ON TEST: 573

DOSE: 10 PPM 0-3

DISP: Moribund Sacrifice

HISTO: 852428

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Epididymis	Esophagus
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Nose	Pancreas
Parathyroid Gland	Prostate	Salivary Glands	Skin
Stomach - Glandular	Thymus	Trachea	Urinary Bladder

OBSERVATIONS

Adrenal Gland	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
Brain		Hemorrhage	Mild
Heart		Degeneration	Chronic, Mild
Islets, Pancreatic		Adenoma	
Kidney		Nephropathy	Chronic, Mild
Liver		Eosinophilic Focus	Moderate
	Bile Duct	Hyperplasia	Marked
		Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 2-4			
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Pituitary Gland	Pars Distalis	Leukemia Mononuclear	
Preputial Gland		Inflammation	Chronic Active, Mild
Spleen		Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 1-11			
Stomach	Forestomach	Acanthosis	Mild
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA TGLs = 3-10			
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8179

TRT#: 4

SEX: Male

DAY ON TEST: 685

DOSE: 10 PPM 0-3

DISP: Natural Death

HISTO: 852429

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex  
Brain  
Intestine Large - Rectum  
Islets, Pancreatic  
Parathyroid Gland  
Stomach - Forestomach  
Urinary Bladder

Adrenal Gland - Medulla  
Epididymis  
Intestine Small - Duodenum  
Lung  
Prostate  
Stomach - Glandular

Bone  
Esophagus  
Intestine Small - Ileum  
Lymph Node  
Salivary Glands  
Thymus

Bone Marrow  
Intestine Large - Colon  
Intestine Small - Jejunum  
Nose  
Skin  
Trachea

AUTO PRECLUDES DIAG.

Intestine Large - Cecum

OBSERVATIONS

Heart		Degeneration	Chronic, Moderate
Kidney		Nephropathy	Chronic, Moderate
Liver		Eosinophilic Focus	Moderate
	Bile Duct	Hyperplasia	Mild
		Hypertrophy	Mild
		Vacuolization Cytoplasmic	Moderate
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Pancreas	Acinus	Atrophy	Moderate
Pituitary Gland	Pars Distalis	Hyperplasia	Mild
Preputial Gland		Inflammation	Chronic Active, Mild
Spleen		Fibrosis	Marked
		Thrombosis	Moderate
Note: FIBROSIS TGLs = 1-11			
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA TGLs = 4-10			
Thyroid Gland	C Cell	Hyperplasia	Minimal

PRIMARY CAUSE OF DEATH

-

Animal Note: CAUSE OF DEATH, SPLENIC AND LIVER LESIONS

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8180

TRT#: 4

SEX: Male

DAY ON TEST: 734

DOSE: 10 PPM 0-3

DISP: Terminal Sacrifice

HISTO: 852430

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Stomach - Forestomach

Stomach - Glandular

OBSERVATIONS

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Mild

Bile Duct

Hyperplasia

Moderate

Oval Cell

Hyperplasia

Minimal

Hypertrophy

Mild

Vacuolization Cytoplasmic

Moderate

Note: [ EOSIN FOCUS ] TGLs = 5-5

Mesentery

Inflammation

Chronic Active, Mild

Note: INFLAMMATION TGLs = 4-2

Preputial Gland

Inflammation

Chronic Active, Moderate

Note: INFLAMMATION TGLs = 3-4

Spleen

Leukemia Mononuclear

Testes

Bilateral, Interstit Cell

Adenoma

[ Adenoma TGLS = 1-3,2-3 ]

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8181

TRT#: 4

SEX: Male

DAY ON TEST: 734

DOSE: 10 PPM 0-3

DISP: Terminal Sacrifice

HISTO: 852431

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex

Stomach - Forestomach

Stomach - Glandular

OBSERVATIONS

Adrenal Gland

Medulla

Pheochromocytoma Malignant

Note: [ PHEOCHROM MAL ] TGLs = 7-3

Liver

Basophilic Focus

Moderate

Degeneration

Cystic, Mild

Eosinophilic Focus

Mild

Bile Duct

Hyperplasia

Mild

Oval Cell

Hyperplasia

Minimal

Hypertrophy

Mild

Leukemia Mononuclear

Vacuolization Cytoplasmic

Mild

Note: [ HYPERTROPHY ] TGLs = 6-5

Spleen

Fibrosis

Mild

Leukemia Mononuclear

Note: FIBROSIS TGLs = 5-2

Note: LEUKEMIA MONUC TGLs = 4-2

Testes

Bilateral, Interstit Cell

Adenoma

Note: ADENOMA TGLs = 1-4,2-4

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL8-6, NO NODULE, ONLY LYMPHOID PATCH

Animal Note: TGL3-4, TESTIS SIZE WITHIN NORMAL LIMITS

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8182

TRT#: 4

SEX: Male

DAY ON TEST: 656

DOSE: 10 PPM 0-3

DISP: Moribund Sacrifice

HISTO: 852432

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Brain
Epididymis	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Nose	Pancreas	Parathyroid Gland
Pituitary Gland	Prostate	Salivary Glands	Skin
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder			

OBSERVATIONS

Bone Marrow	Femoral	Leukemia Mononuclear	
Heart		Degeneration	Chronic, Moderate
Kidney		Nephropathy	Chronic, Moderate
Liver		Eosinophilic Focus	Mild
	Bile Duct	Hyperplasia	Marked
		Leukemia Mononuclear	
Note: [ EOSIN FOCUS ] TGLs = 2-4			
Note: LEUKEMIA MONUC TGLs = 1-4			
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
	Mediastinal	Leukemia Mononuclear	
	Mesenteric	Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 5-2,6-12			
Mammary Gland		Hyperplasia	Cystic, Moderate
Preputial Gland		Inflammation	Chronic Active, Mild
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLs = 3-11 ]			
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA TGLs = 4-10			
Thyroid Gland	C Cell	Hyperplasia	Minimal

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:06

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8182

**TRT#:** 4

**SEX:** Male

**DAY ON TEST:** 656

**DOSE:** 10 PPM 0-3

**DISP:** Moribund Sacrifice

**HISTO:** 852432

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8183

TRT#: 4

SEX: Male

DAY ON TEST: 722

DOSE: 10 PPM 0-3

DISP: Moribund Sacrifice

HISTO: 852433

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Brain	Epididymis
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Nose	Parathyroid Gland	Pituitary Gland	Prostate
Salivary Glands	Skin	Stomach - Forestomach	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
Bone Marrow	Femoral	Leukemia Mononuclear	
Heart		Degeneration	Chronic, Moderate
Kidney		Nephropathy	Chronic, Moderate
Note: NEPHROPATHY TGLs = 1-1			
Liver		Eosinophilic Focus	Moderate
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Mild
		Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 2-4,2-12			
Note: HEPATOCLR ADEN TGLs = 2-4			
Note: HEPATOCLR ADEN TGLs = 3-12			
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Minimal
Preputial Gland	Duct	Dilatation	Moderate
		Inflammation	Chronic Active, Mild
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLs = 4-11 ]			
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA TGLs = 5-10,6-10			

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:06

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8183

**TRT#:** 4

**SEX:** Male

**DAY ON TEST:** 722

**DOSE:** 10 PPM 0-3

**DISP:** Moribund Sacrifice

**HISTO:** 852433

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

Thyroid Gland

C Cell

Adenoma

C Cell

Hyperplasia

Mild

---

**PRIMARY CAUSE OF DEATH**

-

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**Animal Note:** MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8184

TRT#: 4

SEX: Male

DAY ON TEST: 735

DOSE: 10 PPM 0-3

DISP: Terminal Sacrifice

HISTO: 852434

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Eosinophilic Focus

Moderate

Bile Duct

Hyperplasia

Moderate

Hypertrophy

Mild

Vacuolization Cytoplasmic

Moderate

Note: VACUOLIZ CYTO TGLs = 3-5

Mammary Gland

Fibroadenoma

Note: FIBROADENOMA TGLs = 1-2

Pituitary Gland

Pars Distalis

Adenoma

Note: ADENOMA TGLs = 4-4

Testes

Bilateral, Interstit Cell

Adenoma

Note: ADENOMA TGLs = 2-3

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL1-2, SKIN MASS IS MAMMARY TUMOR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:06

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8185

TRT#: 4

SEX: Male

DAY ON TEST: 700

DOSE: 10 PPM 0-3

DISP: Moribund Sacrifice

HISTO: 852435

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Brain	Esophagus
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Nose
Parathyroid Gland	Prostate	Salivary Glands	Skin
Stomach - Glandular	Trachea	Urinary Bladder	

INSUFFICIENT TISSUE

Thymus

OBSERVATIONS

Adrenal Gland	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
Epididymis	Serosa	Mesothelioma Malignant	
Eye	Retina	Atrophy	Marked
	Lens	Cataract	Moderate
Note: ATROPHY	TGLs = 1-11		
Note: CATARACT	TGLs = 1-11		
Heart		Degeneration	Chronic, Moderate
Kidney		Nephropathy	Chronic, Moderate
Liver		Eosinophilic Focus	Mild
	Bile Duct	Hyperplasia	Marked
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Note: [ EOSIN FOCUS ]	TGLs = 4-4		
Note: LEUKEMIA MONUC	TGLs = 3-4		
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
	Pancreatic	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Moderate
Pancreas	Acinus	Atrophy	Marked
Pituitary Gland	Pars Distalis	Adenoma	
Preputial Gland		Inflammation	Chronic Active, Moderate

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:07

**First Dose M/F:** NA / NA

**Lab:** BAT

---

**ANIMAL ID:** 8185

**TRT#:** 4

**SEX:** Male

**DAY ON TEST:** 700

**DOSE:** 10 PPM 0-3

**DISP:** Moribund Sacrifice

**HISTO:** 852435

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 2-12 ]			
Stomach	Forestomach	Acanthosis	Moderate
	Forestomach	Inflammation	Chronic Active, Moderate
	Forestomach	Ulcer	Mild
Testes	Bilateral, Interstit Cell	Adenoma	
	Tunic	Mesothelioma Malignant	
Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Mild

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**PRIMARY CAUSE OF DEATH**

-

**Animal Note:** MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8186

TRT#: 4

SEX: Male

DAY ON TEST: 560

DOSE: 10 PPM 0-3

DISP: Moribund Sacrifice

HISTO: 852436

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Brain	Esophagus	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Islets, Pancreatic
Nose	Pancreas	Parathyroid Gland	Salivary Glands
Skin	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder		

OBSERVATIONS

Adrenal Gland	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
	Cortex	Vacuolization Cytoplasmic	Mild
Bone Marrow	Femoral	Leukemia Mononuclear	
Epididymis		Leukemia Mononuclear	
Heart		Leukemia Mononuclear	
Intestine Small	Ileum	Leukemia Mononuclear	
	Jejunum	Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 5-6		
Note: LEUKEMIA MONUC	TGLs = 4-6		
Kidney		Leukemia Mononuclear	
		Nephropathy	Chronic, Moderate
Liver		Basophilic Focus	Mild
		Eosinophilic Focus	Mild
	Bile Duct	Hyperplasia	Mild
		Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 6-4		
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
	Mediastinal	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Moderate
Pituitary Gland	Pars Distalis	Hyperplasia	Mild
Preputial Gland		Inflammation	Chronic Active, Mild
Prostate		Inflammation	Chronic Active, Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:07

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8186

**TRT#:** 4

**SEX:** Male

**DAY ON TEST:** 560

**DOSE:** 10 PPM 0-3

**DISP:** Moribund Sacrifice

**HISTO:** 852436

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Spleen [ Leukemia Mononuclear TGLS = 1-1,2-11 ] Leukemia Mononuclear

Testes Note: ADENOMA TGLs = 3-10 Bilateral, Interstit Cell Adenoma

Thyroid Gland C Cell Adenoma  
C Cell Hyperplasia Mild

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**PRIMARY CAUSE OF DEATH**

-

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8187

TRT#: 4

SEX: Male

DAY ON TEST: 730

DOSE: 10 PPM 0-3

DISP: Moribund Sacrifice

HISTO: 852437

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Brain	Epididymis
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Nose	Parathyroid Gland	Pituitary Gland	Prostate
Salivary Glands	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder		

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Medulla	Hyperplasia	Mild
	Cortex	Vacuolization Cytoplasmic	Mild
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Marked
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Mild
		Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 4-4		
Note: HEPATOCLR ADEN	TGLs = 5-12		
Lung	Alveolar Epith	Hyperplasia	Mild
		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
	Mesenteric	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Duct	Hyperplasia	Mild
Preputial Gland		Inflammation	Chronic Active, Mild
Skin		Acanthosis	Moderate
Note: ACANTHOSIS	TGLs = 1-13		
Spleen		Leukemia Mononuclear	
	[ Leukemia Mononuclear TGLS = 2-11 ]		

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:07

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8187

**TRT#:** 4

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** 10 PPM 0-3

**DISP:** Moribund Sacrifice

**HISTO:** 852437

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA TGLs = 3-10			
Thyroid Gland	C Cell	Hyperplasia	Mild

---

**PRIMARY CAUSE OF DEATH**

-

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

Animal Note: TGL1-13, SMALL ACANTHOTIC AREA OVER TACTIL HAIRS OF FACE

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\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8188

TRT#: 4

SEX: Male

DAY ON TEST: 679

DOSE: 10 PPM 0-3

DISP: Moribund Sacrifice

HISTO: 852438

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Brain	Epididymis
Esophagus	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Nose
Parathyroid Gland	Prostate	Salivary Glands	Skin
Stomach - Glandular	Testes	Thymus	Trachea
Urinary Bladder			

OBSERVATIONS

Adrenal Gland	Medulla	Hyperplasia	Mild
	Cortex	Vacuolization Cytoplasmic	Mild
Heart		Degeneration	Chronic, Mild
Intestine Large	Cecum	Dilatation	Moderate
Note: DILATATION TGLs = 7-6			
Kidney		Nephropathy	Chronic, Moderate
Note: NEPHROPATHY TGLs = 5-1			
Liver		Basophilic Focus	Mild
		Eosinophilic Focus	Mild
	Bile Duct	Hyperplasia	Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Note: LEUKEMIA MONUC TGLs = 6-4			
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
	Mediastinal	Leukemia Mononuclear	
	Mesenteric	Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 2-2,3-12			
Mammary Gland		Hyperplasia	Cystic, Moderate
Pancreas	Acinus	Atrophy	Mild
Pituitary Gland	Pars Distalis	Adenoma	
Note: ADENOMA TGLs = 1-7			
Preputial Gland		Inflammation	Chronic Active, Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:07

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8188

**TRT#:** 4

**SEX:** Male

**DAY ON TEST:** 679

**DOSE:** 10 PPM 0-3

**DISP:** Moribund Sacrifice

**HISTO:** 852438

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 4-11 ]			
Stomach	Forestomach	Acanthosis	Moderate
	Forestomach	Inflammation	Chronic Active, Mild
	Forestomach	Squamous Cell Papilloma	
Note: ACANTHOSIS	TGLs = 8-13		
Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Mild

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**PRIMARY CAUSE OF DEATH**

-

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8189

TRT#: 4

SEX: Male

DAY ON TEST: 736

DOSE: 10 PPM 0-3

DISP: Terminal Sacrifice

HISTO: 852439

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Moderate

Hepatocellular Adenoma

Bile Duct

Hyperplasia

Moderate

Hypertrophy

Mild

Vacuolization Cytoplasmic

Minimal

Note: HEPATOCLR ADEN TGLs = 1-4

Lung

Note: ALV BRON ADEN TGLs = 4-3

Alveolar/Bronchiolar Adenoma

Testes

Bilateral, Interstit Cell

Adenoma

[ Adenoma TGLS = 3-2 ]

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8190

TRT#: 4

SEX: Male

DAY ON TEST: 661

DOSE: 10 PPM 0-3

DISP: Natural Death

HISTO: 852440

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Bone	Brain	Epididymis	Prostate
Skin			

**MISSING**

Esophagus	Heart	Lung	Lymph Node
Parathyroid Gland	Salivary Glands	Thymus	Thyroid Gland
Trachea			

**AUTO PRECLUDES DIAG.**

Adrenal Gland - Cortex	Bone Marrow	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Liver	Nose	Pancreas
Spleen	Stomach - Forestomach	Stomach - Glandular	Urinary Bladder

**INSUFFICIENT TISSUE**

Pituitary Gland

**OBSERVATIONS**

Adrenal Gland Note: PHEOCHROM BGN TGLs = 1-7	Medulla	Pheochromocytoma Benign	
Kidney		Nephropathy	Chronic, Moderate
Lymph Node Note: MANDIBULAR LN MISSING			
Preputial Gland		Inflammation	Chronic Active, Mild
Testes Note: ADENOMA TGLs = 2-10	Bilateral, Interstit Cell	Adenoma	

**PRIMARY CAUSE OF DEATH**

-

Animal Note: CAUSE OF DEATH, PHEOCHROMOCYTOMA OF ADRENAL GLAND

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8191

TRT#: 4

SEX: Male

DAY ON TEST: 683

DOSE: 10 PPM 0-3

DISP: Moribund Sacrifice

HISTO: 852441

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Brain	Epididymis	Esophagus
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Nose
Parathyroid Gland	Prostate	Salivary Glands	Skin
Stomach - Forestomach	Stomach - Glandular	Trachea	Urinary Bladder

MISSING

Thymus

OBSERVATIONS

Adrenal Gland	Medulla	Hyperplasia	Moderate
	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
Bone Marrow	Femoral	Leukemia Mononuclear	
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Moderate
[ Nephropathy TGLS = 8-1 ]			
Liver		Eosinophilic Focus	Mild
		Hepatocellular Carcinoma	
	Bile Duct	Hyperplasia	Moderate
		Hypertrophy	Mild
		Leukemia Mononuclear	
Note: HEPATOCLR CARC	TGLs = 6-13		
Note: LEUKEMIA MONUC	TGLs = 7-4		
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
	Mediastinal	Leukemia Mononuclear	
	Mesenteric	Leukemia Mononuclear	
	Pancreatic	Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 3-12,4-6,5-14,12-7		
Pancreas	Acinus	Adenoma	
Pituitary Gland	Pars Distalis	Hyperplasia	Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:07

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8191

**TRT#:** 4

**SEX:** Male

**DAY ON TEST:** 683

**DOSE:** 10 PPM 0-3

**DISP:** Moribund Sacrifice

**HISTO:** 852441

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

Preputial Gland

Inflammation

Chronic Active, Mild

Spleen

Leukemia Mononuclear

[ Leukemia Mononuclear TGLS = 11-11 ]

Testes

Bilateral, Interstit Cell

Adenoma

Note: ADENOMA TGLs = 10-10

Thyroid Gland

C Cell

Hyperplasia

Mild

---

**PRIMARY CAUSE OF DEATH**

-

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Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

Animal Note: TGL9-10, TESTIS SIZE WITHIN NORMAL LIMITS

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8192

TRT#: 4

SEX: Male

DAY ON TEST: 693

DOSE: 10 PPM 0-3

DISP: Moribund Sacrifice

HISTO: 852442

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Epididymis	Esophagus	Intestine Large - Cecum
Intestine Large - Colon	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lung	Lymph Node	Nose
Pancreas	Parathyroid Gland	Pituitary Gland	Prostate
Salivary Glands	Skin	Spleen	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	Urinary Bladder

OBSERVATIONS

Heart		Degeneration	Chronic, Mild
Intestine Large	Rectum	Parasite Metazoan	
Kidney		Nephropathy	Chronic, Moderate
Liver		Basophilic Focus	Minimal
	Bile Duct	Eosinophilic Focus	Marked
		Hyperplasia	Mild
		Hypertrophy	Mild
		Vacuolization Cytoplasmic	Minimal
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Fibroadenoma	
		Hyperplasia	Cystic, Mild
[ Fibroadenoma TGLS = 1-11 ]			
Preputial Gland		Inflammation	Chronic Active, Mild
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA TGLs = 2-10,3-10			
Thyroid Gland	C Cell	Hyperplasia	Mild
Tooth	Gingiva	Squamous Cell Carcinoma	

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO MAMMARY GLAND TUMOR

Animal Note: TGL2-10, TESTIS SIZE WITHIN NORMAL LIMITS

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8193

TRT#: 4

SEX: Male

DAY ON TEST: 721

DOSE: 10 PPM 0-3

DISP: Natural Death

HISTO: 852443

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lung	Lymph Node	Nose
Parathyroid Gland	Salivary Glands	Skin	Spleen
Thymus	Trachea	Urinary Bladder	

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
Heart		Degeneration	Chronic, Moderate
Kidney		Nephropathy	Chronic, Marked
Liver		Basophilic Focus	Minimal
		Eosinophilic Focus	Mild
	Bile Duct	Hyperplasia	Moderate
		Hypertrophy	Mild
		Necrosis	Mild
		Vacuolization Cytoplasmic	Mild
Note: [ HYPERTROPHY ] TGLs = 2-4			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Fibroadenoma	
Note: FIBROADENOMA TGLs = 1-11			
Pancreas	Acinus	Atrophy	Mild
Pituitary Gland	Pars Distalis	Adenoma	Multiple
	Pars Distalis	Hyperplasia	Moderate
Note: ADENOMA TGLs = 3-7			
Preputial Gland		Inflammation	Chronic Active, Mild
Prostate		Inflammation	Chronic Active, Minimal
Stomach	Forestomach	Acanthosis	Moderate
	Glandular	Ulcer	Moderate
Note: ULCER TGLs = 4-6			

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:07

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8193

**TRT#:** 4

**SEX:** Male

**DAY ON TEST:** 721

**DOSE:** 10 PPM 0-3

**DISP:** Natural Death

**HISTO:** 852443

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

Testes

Bilateral, Interstit Cell

Adenoma

Thyroid Gland

C Cell

Hyperplasia

Mild

---

**PRIMARY CAUSE OF DEATH**

-

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Animal Note: CAUSE OF DEATH, PITUITARY TUMOR AND STOMACH LESIONS

Animal Note: TGL1-11, SKIN MASS IS MAMMARY GLAND TUMOR

---

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8194

TRT#: 4

SEX: Male

DAY ON TEST: 695

DOSE: 10 PPM 0-3

DISP: Moribund Sacrifice

HISTO: 852444

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Epididymis	Esophagus	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Nose	Pancreas
Parathyroid Gland	Pituitary Gland	Prostate	Salivary Glands
Skin	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder		

OBSERVATIONS

Heart		Degeneration	Chronic, Moderate
Kidney		Nephropathy	Chronic, Marked
Liver		Eosinophilic Focus	Mild
	Bile Duct	Hyperplasia	Marked
	Oval Cell	Hyperplasia	Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Note: LEUKEMIA MONUC TGLs = 2-4			
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
	Mediastinal	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Moderate
Preputial Gland		Inflammation	Chronic Active, Mild
Spleen		Fibrosis	Mild
		Leukemia Mononuclear	
Note: FIBROSIS TGLs = 3-11			
[ Leukemia Mononuclear TGLS = 1-11 ]			
Testes	Interstit Cell	Adenoma	
	Interstit Cell	Hyperplasia	Mild
Note: HYPERPLASIA TGLs = 4-10			
Note: ADENOMA TGLs = 4-10			
Thyroid Gland	Bilateral, C Cell	Adenoma	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:07

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8194

**TRT#:** 4

**SEX:** Male

**DAY ON TEST:** 695

**DOSE:** 10 PPM 0-3

**DISP:** Moribund Sacrifice

**HISTO:** 852444

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

C Cell

Hyperplasia

Mild

---

**PRIMARY CAUSE OF DEATH**

-

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Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8195

TRT#: 4

SEX: Male

DAY ON TEST: 736

DOSE: 10 PPM 0-3

DISP: Terminal Sacrifice

HISTO: 852445

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Eye

Retina

Atrophy

Marked

Lens

Cataract

Moderate

Note: CATARACT TGLs = 1-2

Note: ATROPHY TGLs = 1-2

Kidney

Cortex

Cyst

Nephropathy

Chronic, Marked

Note: NEPHROPATHY TGLs = 5-3

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Moderate

Bile Duct

Hyperplasia

Moderate

Oval Cell

Hyperplasia

Mild

Hypertrophy

Mild

Inflammation

Chronic Active, Mild

Vacuolization Cytoplasmic

Mild

Adenoma

Testes

Bilateral, Interstit Cell

Note: ADENOMA TGLs = 2-4

Thyroid Gland

Follicular Cel

Carcinoma

C Cell

Hyperplasia

Mild

Note: CARCINOMA TGLs = 6-6

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8196

TRT#: 4

SEX: Male

DAY ON TEST: 503

DOSE: 10 PPM 0-3

DISP: Moribund Sacrifice

HISTO: 852446

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Epididymis	Esophagus
Heart	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Nose	Pancreas	Parathyroid Gland	Salivary Glands
Skin	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder		

OBSERVATIONS

Adrenal Gland	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
	Cortex	Vacuolization Cytoplasmic	Moderate
Brain		Hemorrhage	Mild
Kidney		Nephropathy	Chronic, Mild
Liver	Bile Duct	Hyperplasia	Mild
		Leukemia Mononuclear	
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
	Mediastinal	Leukemia Mononuclear	
	Mediastinal	Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 2-12			
Mammary Gland		Hyperplasia	Cystic, Mild
Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
Preputial Gland		Inflammation	Chronic Active, Mild
Prostate		Inflammation	Chronic Active, Minimal
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLs = 1-11 ]			
Testes	Interstitial Cell	Adenoma	
	Interstitial Cell	Hyperplasia	Mild
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:07

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8196

**TRT#:** 4

**SEX:** Male

**DAY ON TEST:** 503

**DOSE:** 10 PPM 0-3

**DISP:** Moribund Sacrifice

**HISTO:** 852446

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8197

TRT#: 4

SEX: Male

DAY ON TEST: 609

DOSE: 10 PPM 0-3

DISP: Moribund Sacrifice

HISTO: 852447

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Brain	Epididymis
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Nose	Parathyroid Gland	Salivary Glands	Skin
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder			

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
	Cortex	Vacuolization Cytoplasmic	Mild
Heart		Degeneration	Chronic, Moderate
Kidney		Nephropathy	Chronic, Marked
Liver		Eosinophilic Focus	Moderate
	Bile Duct	Hyperplasia	Marked
	Oval Cell	Hyperplasia	Mild
		Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 2-4		
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
	Mediastinal	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Moderate
Pancreas	Acinus	Cytomegaly	Focal, Mild
		Leukemia Mononuclear	
Pituitary Gland	Pars Distalis	Leukemia Mononuclear	
Preputial Gland		Inflammation	Chronic Active, Mild
Prostate		Inflammation	Chronic Active, Mild
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-11 ]			
Testes	Bilateral, Interstit Cell	Adenoma	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:07

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8197

**TRT#:** 4

**SEX:** Male

**DAY ON TEST:** 609

**DOSE:** 10 PPM 0-3

**DISP:** Moribund Sacrifice

**HISTO:** 852447

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Thyroid Gland

C Cell

Hyperplasia

Mild

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**PRIMARY CAUSE OF DEATH**

-

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Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

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\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8198

TRT#: 4

SEX: Male

DAY ON TEST: 582

DOSE: 10 PPM 0-3

DISP: Moribund Sacrifice

HISTO: 852448

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lung	Lymph Node	Nose
Pancreas	Parathyroid Gland	Pituitary Gland	Prostate
Salivary Glands	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder		

OBSERVATIONS

Adrenal Gland	Medulla	Hyperplasia	Mild
Heart		Degeneration	Chronic, Moderate
Kidney		Nephropathy	Chronic, Marked
Liver		Basophilic Focus	Mild
		Eosinophilic Focus	Moderate
	Bile Duct	Hyperplasia	Mild
		Inflammation	Chronic, Multifocal, Mild
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Moderate
Preputial Gland		Inflammation	Chronic Active, Mild
Skin	Subcut Tiss	Fibrosarcoma	
Note: FIBROSARC TGLs = 1-11			
Spleen		Hematopoietic Cell Proliferation	Moderate
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA TGLs = 2-10			
Thyroid Gland	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO SKIN TUMOR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8199

TRT#: 4

SEX: Male

DAY ON TEST: 736

DOSE: 10 PPM 0-3

DISP: Terminal Sacrifice

HISTO: 852449

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Stomach - Forestomach

Stomach - Glandular

OBSERVATIONS

Kidney

Nephropathy

Chronic, Marked

Note: NEPHROPATHY TGLs = 5-3

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Marked

Bile Duct

Hyperplasia

Moderate

Oval Cell

Hyperplasia

Mild

Hypertrophy

Mild

Leukemia Mononuclear

Vacuolization Cytoplasmic

Mild

Note: LEUKEMIA MONUC TGLs = 7-5

Mesentery

Artery

Inflammation

Chronic Active, Moderate

Note: INFLAMMATION TGLs = 6-4

Spleen

Leukemia Mononuclear

Note: LEUKEMIA MONUC TGLs = 4-1

Testes

Bilateral, Interstit Cell

Adenoma

Note: ADENOMA TGLs = 1-2,2-2

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL3-2, TESTIS SIZE WITHIN NORMAL LIMITS

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8200

TRT#: 4

SEX: Male

DAY ON TEST: 678

DOSE: 10 PPM 0-3

DISP: Moribund Sacrifice

HISTO: 852450

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Brain	Epididymis
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Lung	Nose	Pancreas	Salivary Glands
Skin	Spleen	Stomach - Glandular	Thymus
Trachea	Urinary Bladder		

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Medulla	Hyperplasia	Mild
	Cortex	Vacuolization Cytoplasmic	Mild
Eye	Retina	Atrophy	Marked
	Lens	Cataract	Moderate
Note: ATROPHY	TGLs = 2-15		
Note: CATARACT	TGLs = 2-15		
Heart		Degeneration	Chronic, Moderate
Kidney		Nephropathy	Chronic, Marked
[ Nephropathy TGLS = 7-1,7-12 ]			
Liver		Basophilic Focus	Marked
		Eosinophilic Focus	Moderate
		Hepatocellular Carcinoma	
	Bile Duct	Hyperplasia	Mild
		Hypertrophy	Minimal
		Inflammation	Chronic, Multifocal, Mild
Note: HEPATOCLR CARC	TGLs = 5-11		
Lymph Node	Mesenteric	Angiectasis	Moderate
Note: ANGIECTASIS	TGLs = 8-14		
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Marked
Note: HYPERPLASIA	TGLs = 3-16		
Parathyroid Gland		Adenoma	

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8200

TRT#: 4

SEX: Male

DAY ON TEST: 678

DOSE: 10 PPM 0-3

DISP: Moribund Sacrifice

HISTO: 852450

**ORGAN AND ACCOUNTABLE SITE STATUS**

Pituitary Gland	Pars Distalis	Adenoma	
Note: ADENOMA	TGLs = 1-7		
Preputial Gland	Duct	Dilatation	Mild
		Inflammation	Chronic Active, Mild
Prostate		Inflammation	Chronic Active, Moderate
Stomach	Forestomach	Acanthosis	Marked
	Forestomach	Inflammation	Chronic Active, Moderate
	Forestomach	Ulcer	Mild
Note: ACANTHOSIS	TGLs = 9-13		
Testes	Interstit Cell	Adenoma	
Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL4-17, NORMAL SUBCUTIS FAT, NCL

Animal Note: TGL3-16, SKIN NODULE IS HYPERPLASTIC MAMMARY GLAND

Animal Note: MORIBUND SACRIFICE DUE TO PITUITARY TUMOR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8201

TRT#: 5

SEX: Male

DAY ON TEST: 727

DOSE: 10 PPM 3-3

DISP: Terminal Sacrifice

HISTO: 852461

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Kidney

Nephropathy

Chronic, Moderate

Note: NEPHROPATHY TGLs = 4-5

Liver

Degeneration

Cystic, Mild

Eosinophilic Focus

Marked

Bile Duct

Hyperplasia

Moderate

Hypertrophy

Mild

Leukemia Mononuclear

Note: LEUKEMIA MONUC TGLs = 3-4

Preputial Gland

Carcinoma

Note: CARCINOMA TGLs = 1-2

Spleen

Leukemia Mononuclear

Note: LEUKEMIA MONUC TGLs = 2-3

Testes

Bilateral, Interstit Cell

Adenoma

Note: ADENOMA TGLs = 5-6

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8202

TRT#: 5

SEX: Male

DAY ON TEST: 619

DOSE: 10 PPM 3-3

DISP: Moribund Sacrifice

HISTO: 852462

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Brain	Epididymis
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Nose	Parathyroid Gland	Skin	Stomach - Forestomach
Stomach - Glandular	Trachea		

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
Bone Marrow	Femoral	Leukemia Mononuclear	
Heart		Degeneration	Chronic, Mild
Kidney		Leukemia Mononuclear	
[ Nephropathy TGLS = 4-1,4-13 ]		Nephropathy	Chronic, Moderate
Liver	Bile Duct	Hyperplasia	Marked
		Hypertrophy	Mild
		Leukemia Mononuclear	
Note: [ HYPERTROPHY ] TGLs = 6-4			
Note: LEUKEMIA MONUC TGLs = 5-4			
Lung		Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 8-2,8-3			
Lymph Node	Mandibular	Leukemia Mononuclear	
	Mediastinal	Leukemia Mononuclear	
	Mesenteric	Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 3-15			
Pancreas		Leukemia Mononuclear	
Pituitary Gland	Pars Distalis	Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 9-7			
Preputial Gland		Inflammation	Chronic Active, Mild
Prostate		Leukemia Mononuclear	
Salivary Glands		Leukemia Mononuclear	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:07

**First Dose M/F:** NA / NA

**Lab:** BAT

**ANIMAL ID:** 8202

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 619

**DOSE:** 10 PPM 3-3

**DISP:** Moribund Sacrifice

**HISTO:** 852462

**ORGAN AND ACCOUNTABLE SITE STATUS**

Note: LEUKEMIA MONUC TGLs = 1-14

Spleen

Leukemia Mononuclear

[ Leukemia Mononuclear TGLS = 2-11 ]

Testes

Interstit Cell

Adenoma

Interstit Cell

Hyperplasia

Mild

Note: ADENOMA TGLs = 10-10

Thymus

Leukemia Mononuclear

Note: LEUKEMIA MONUC TGLs = 7-12

Thyroid Gland

C Cell

Hyperplasia

Mild

Urinary Bladder

Leukemia Mononuclear

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8203

TRT#: 5

SEX: Male

DAY ON TEST: 727

DOSE: 10 PPM 3-3

DISP: Terminal Sacrifice

HISTO: 852463

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

**OBSERVATIONS**

Liver		Eosinophilic Focus	Moderate
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Mild
		Hypertrophy	Mild
		Leukemia Mononuclear	
Mesentery		Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 4-2		
Pancreas		Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 5-5		
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear	TGLS = 3-4 ]		
Stomach	Glandular	Leukemia Mononuclear	
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA	TGLs = 1-3		

PRIMARY CAUSE OF DEATH

-

Animal Note: TESTIS SIZE WITHIN NORMAL LIMITS

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8204

TRT#: 5

SEX: Male

DAY ON TEST: 728

DOSE: 10 PPM 3-3

DISP: Terminal Sacrifice

HISTO: 852464

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Eosinophilic Focus

Marked

Bile Duct

Hyperplasia

Marked

Oval Cell

Hyperplasia

Mild

Hypertrophy

Moderate

Leukemia Mononuclear

Vacuolization Cytoplasmic

Mild

Note: LEUKEMIA MONUC TGLs = 2-5

Lymph Node

Mesenteric

Leukemia Mononuclear

Note: LEUKEMIA MONUC TGLs = 4-2

Spleen

Leukemia Mononuclear

Note: LEUKEMIA MONUC TGLs = 1-4

Testes

Bilateral, Interstit Cell

Adenoma

Note: ADENOMA TGLs = 5-3

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8205

TRT#: 5

SEX: Male

DAY ON TEST: 710

DOSE: 10 PPM 3-3

DISP: Moribund Sacrifice

HISTO: 852465

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Lung	Nose	Pancreas	Parathyroid Gland
Prostate	Skin	Stomach - Forestomach	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	

MISSING

Lymph Node	Salivary Glands
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OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Cortex	Vacuolization Cytoplasmic	Mild
Epididymis	Serosa	Mesothelioma Malignant	
Note: MESOTHELIO MAL TGLs = 8-12,8-13,8-14			
Eye	Retina	Atrophy	Marked
	Lens	Cataract	Moderate
Note: ATROPHY TGLs = 1-17			
Note: CATARACT TGLs = 1-17			
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Marked
Liver		Basophilic Focus	Minimal
		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Mild
		Hypertrophy	Moderate
		Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 5-4,5-18,5-19			
Lymph Node			
Note: MANDIBULAR LN MISSING			
Mammary Gland		Hyperplasia	Cystic, Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:07

**First Dose M/F:** NA / NA

**Lab:** BAT

**ANIMAL ID:** 8205

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 710

**DOSE:** 10 PPM 3-3

**DISP:** Moribund Sacrifice

**HISTO:** 852465

**ORGAN AND ACCOUNTABLE SITE STATUS**

Pituitary Gland Note: ADENOMA TGLs = 7-7	Pars Distalis	Adenoma	
Preputial Gland		Inflammation	Chronic Active, Mild
Spleen Note: LEUKEMIA MONUC TGLs = 2-11		Leukemia Mononuclear	
Testes Note: MESOTHELIO MAL TGLs = 4-15,4-16 Note: ADENOMA TGLs = 3-15,3-16	Bilateral, Interstit Cell Tunic	Adenoma Mesothelioma Malignant	
Thyroid Gland	C Cell	Hyperplasia	Moderate

**PRIMARY CAUSE OF DEATH**

-

Animal Note: MORIBUND SAC DUE TO MALIGNANT MESOTHELIOMA

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8206

TRT#: 5

SEX: Male

DAY ON TEST: 673

DOSE: 10 PPM 3-3

DISP: Moribund Sacrifice

HISTO: 852466

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Brain	Epididymis
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Lung
Lymph Node	Nose	Parathyroid Gland	Pituitary Gland
Prostate	Salivary Glands	Skin	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	Urinary Bladder

OBSERVATIONS

Adrenal Gland	Medulla	Hyperplasia	Mild
	Cortex	Vacuolization Cytoplasmic	Mild
Heart		Degeneration	Chronic, Mild
Intestine Large	Rectum	Parasite Metazoan	
Kidney		Nephropathy	Chronic, Moderate
Liver		Basophilic Focus	Moderate
		Eosinophilic Focus	Mild
	Bile Duct	Hyperplasia	Mild
		Hypertrophy	Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Note: LEUKEMIA MONUC	TGLs = 2-4		
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Adenoma	
	Acinus	Atrophy	Mild
Preputial Gland		Carcinoma	
Note: CARCINOMA	TGLs = 1-11		
Spleen		Leukemia Mononuclear	
Testes	Bilateral, Interstit Cell	Adenoma	
Thyroid Gland	C Cell	Hyperplasia	Minimal

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)

**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:07

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8206

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 673

**DOSE:** 10 PPM 3-3

**DISP:** Moribund Sacrifice

**HISTO:** 852466

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Animal Note: MORIBUND SACRIFICE DUE TO PREPUTIAL GLAND TUMOR

---

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8207

TRT#: 5

SEX: Male

DAY ON TEST: 529

DOSE: 10 PPM 3-3

DISP: Natural Death

HISTO: 852467

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Epididymis	Esophagus	Intestine Large - Cecum
Intestine Large - Colon	Intestine Small - Duodenum	Islets, Pancreatic	Lung
Lymph Node	Nose	Pancreas	Parathyroid Gland
Pituitary Gland	Prostate	Salivary Glands	Spleen
Stomach - Glandular	Thymus	Trachea	Urinary Bladder

MISSING

Intestine Large - Rectum	Intestine Small - Ileum
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AUTO PRECLUDES DIAG.

Intestine Small - Jejunum
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OBSERVATIONS

Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Mild
Liver	Bile Duct	Hyperplasia	Mild
		Necrosis	Moderate
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Preputial Gland		Inflammation	Chronic Active, Mild
Skin		Trichoepithelioma	
Note: TRICHOEPITHEL TGLs = 1-11			
Stomach	Forestomach	Mineralization	Minimal
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA TGLs = 2-10			
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: PROBABLE CAUSE OF DEATH, LIVER NECROSIS

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01  
**Test Type:** CHRONIC  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 08:38:07  
**First Dose M/F:** NA / NA  
**Lab:** BAT

**ANIMAL ID:** 8208

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 728

**DOSE:** 10 PPM 3-3

**DISP:** Terminal Sacrifice

**HISTO:** 852468

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Eosinophilic Focus

Marked

Hepatocellular Adenoma

Bile Duct

Hyperplasia

Marked

Hypertrophy

Moderate

Inflammation

Chronic, Multifocal, Mild

Vacuolization Cytoplasmic

Moderate

Note: HEPATOCLR ADEN TGLs = 2-3

Testes

Bilateral, Interstit Cell

Adenoma

Note: ADENOMA TGLs = 1-2

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8209

TRT#: 5

SEX: Male

DAY ON TEST: 510

DOSE: 10 PPM 3-3

DISP: Moribund Sacrifice

HISTO: 852469

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Epididymis	Esophagus	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Lung	Lymph Node
Nose	Parathyroid Gland	Pituitary Gland	Prostate
Salivary Glands	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder		

**OBSERVATIONS**

Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Mild
Liver		Eosinophilic Focus	Minimal
		Hypertrophy	Mild
		Vacuolization Cytoplasmic	Minimal
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Pancreas	Acinus	Adenoma	
Preputial Gland		Inflammation	Chronic Active, Mild
Skin	Subcut Tiss	Fibroma	
Note: FIBROMA TGLs = 1-12			
Spleen		Inflammation	Chronic Active, Moderate
Note: INFLAMMATION TGLs = 3-11			
Testes	Interstit Cell	Adenoma	
	Interstit Cell	Hyperplasia	Mild
Note: ADENOMA TGLs = 2-10			
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL4-4, SIZE OF LIVER WITHIN NORMAL LIMITS

Animal Note: MORIBUND SACRIFICE DUE TO SKIN TUMOR

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8210

TRT#: 5

SEX: Male

DAY ON TEST: 626

DOSE: 10 PPM 3-3

DISP: Moribund Sacrifice

HISTO: 852470

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Heart	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Lung	Lymph Node
Nose	Pancreas	Parathyroid Gland	Salivary Glands
Skin	Spleen	Stomach - Glandular	Testes
Trachea	Urinary Bladder		

MISSING

Thymus

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Cortex	Vacuolization Cytoplasmic	Mild
Eye	Retina	Atrophy	Marked
	Lens	Cataract	Moderate
Note: CATARACT	TGLs = 1-11		
Note: ATROPHY	TGLs = 1-11		
Kidney	Renal Tubule	Adenoma	
		Nephropathy	Chronic, Marked
Liver		Eosinophilic Focus	Minimal
	Bile Duct	Hyperplasia	Mild
		Hypertrophy	Minimal
		Inflammation	Chronic Active, Minimal
		Vacuolization Cytoplasmic	Minimal
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Moderate
Pituitary Gland	Pars Distalis	Adenoma	
Note: ADENOMA	TGLs = 3-7		
Preputial Gland		Inflammation	Chronic Active, Mild
Prostate		Inflammation	Chronic Active, Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:07

**First Dose M/F:** NA / NA

**Lab:** BAT

**ANIMAL ID:** 8210

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 626

**DOSE:** 10 PPM 3-3

**DISP:** Moribund Sacrifice

**HISTO:** 852470

**ORGAN AND ACCOUNTABLE SITE STATUS**

Stomach	Forestomach	Acanthosis	Moderate
	Forestomach	Inflammation	Chronic Active, Moderate
	Forestomach	Ulcer	Mild
Note: ULCER	TGLs = 4-12		
Note: ACANTHOSIS	TGLs = 4-12		
Thyroid Gland	Follicular Cel	Adenoma	
	C Cell	Hyperplasia	Mild

**PRIMARY CAUSE OF DEATH**

-

Animal Note: MORIBUND SACRIFICE DUE TO PITUITARY TUMOR

Animal Note: TGL2-4, LIVER SIZE WITHIN NORMAL LIMITS

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8211

TRT#: 5

SEX: Male

DAY ON TEST: 703

DOSE: 10 PPM 3-3

DISP: Moribund Sacrifice

HISTO: 852471

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Brain	Epididymis	Esophagus
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Nose
Pancreas	Parathyroid Gland	Prostate	Salivary Glands
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder			

OBSERVATIONS

Adrenal Gland	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
	Cortex	Vacuolization Cytoplasmic	Mild
Bone Marrow	Femoral	Leukemia Mononuclear	
Heart		Degeneration	Chronic, Moderate
Kidney		Nephropathy	Chronic, Moderate
Liver		Eosinophilic Focus	Marked
	Bile Duct	Hyperplasia	Marked
		Hypertrophy	Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Note: LEUKEMIA MONUC	TGLs = 3-4		
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
	Mediastinal	Leukemia Mononuclear	
	Pancreatic	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Mild
Pituitary Gland	Pars Distalis	Leukemia Mononuclear	
Preputial Gland		Inflammation	Chronic Active, Mild
Skin	Subcut Tiss	Fibroma	
Note: FIBROMA	TGLs = 1-11		
Spleen		Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 2-1		

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:07

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8211

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 703

**DOSE:** 10 PPM 3-3

**DISP:** Moribund Sacrifice

**HISTO:** 852471

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Testes

Bilateral, Interstit Cell

Adenoma

Thyroid Gland

C Cell

Hyperplasia

Mild

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**PRIMARY CAUSE OF DEATH**

-

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Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

Animal Note: TGL1-11, TUMOR MASS IS NOT MAMMARY GLAND

---

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8212

TRT#: 5

SEX: Male

DAY ON TEST: 701

DOSE: 10 PPM 3-3

DISP: Moribund Sacrifice

HISTO: 852472

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Bone	Bone Marrow	Brain
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Lung	Lymph Node - Mesenteric	Lymph Node - Thoracic	Nose
Pancreas	Parathyroid Gland	Prostate	Salivary Glands
Spleen	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder		

OBSERVATIONS

Adrenal Gland	Medulla	Pheochromocytoma Benign	
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Marked
Liver		Degeneration	Cystic, Mild
		Eosinophilic Focus	Moderate
	Bile Duct	Hyperplasia	Moderate
		Hypertrophy	Mild
		Inflammation	Chronic, Multifocal, Mild
Mammary Gland		Hyperplasia	Cystic, Mild
Pituitary Gland	Pars Distalis	Adenoma	
Preputial Gland		Inflammation	Chronic Active, Mild
Skin	Subcut Tiss	Fibroma	
Note: FIBROMA	TGLs = 1-11		
Testes	Bilateral, Interstit Cell	Adenoma	
Thyroid Gland	C Cell	Carcinoma	

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL1-11MAMMARY MASS IS FIBROUS TUMOR UNDER SKIN

Animal Note: MORIBUND SAC DUE TO LIVER LESIONS AND LEUKEMIA

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8213

TRT#: 5

SEX: Male

DAY ON TEST: 729

DOSE: 10 PPM 3-3

DISP: Terminal Sacrifice

HISTO: 852473

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Minimal

Eosinophilic Focus

Moderate

Bile Duct

Hyperplasia

Marked

Oval Cell

Hyperplasia

Mild

Hypertrophy

Mild

Leukemia Mononuclear

Vacuolization Cytoplasmic

Moderate

Spleen

Leukemia Mononuclear

Testes

Bilateral, Interstit Cell

Adenoma

Note: ADENOMA

TGLs = 1-4

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL3-3, IATROGENIC BLOOD IN FAT, NO PIGMENT IN RECTUM

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01  
**Test Type:** CHRONIC  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 08:38:07  
**First Dose M/F:** NA / NA  
**Lab:** BAT

**ANIMAL ID:** 8214

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** 10 PPM 3-3

**DISP:** Terminal Sacrifice

**HISTO:** 852474

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Bile Duct

Eosinophilic Focus

Moderate

Hyperplasia

Moderate

Hypertrophy

Mild

Inflammation

Chronic, Multifocal, Mild

Vacuolization Cytoplasmic

Marked

Testes

Bilateral, Interstit Cell

Adenoma

Note: ADENOMA

TGLs = 2-3

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8215

TRT#: 5

SEX: Male

DAY ON TEST: 729

DOSE: 10 PPM 3-3

DISP: Terminal Sacrifice

HISTO: 852475

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Eosinophilic Focus

Marked

Hepatocellular Adenoma

Bile Duct

Hyperplasia

Mild

Oval Cell

Hyperplasia

Mild

Hypertrophy

Mild

Leukemia Mononuclear

Vacuolization Cytoplasmic

Mild

[ Hyperplasia TGLS = 7-3,5-6 ]

[ Vacuolization Cytoplasmic TGLS = 5-6 ]

Spleen

Leukemia Mononuclear

Note: LEUKEMIA MONUC TGLs = 4-2

Testes

Bilateral, Interstit Cell

Adenoma

Note: ADENOMA TGLs = 1-4,2-4

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL3-4, TESTIS SIZE WITHIN NORMAL LIMITS

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8216

TRT#: 5

SEX: Male

DAY ON TEST: 693

DOSE: 10 PPM 3-3

DISP: Moribund Sacrifice

HISTO: 852476

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Nose	Pancreas	Parathyroid Gland
Salivary Glands	Skin	Trachea	Urinary Bladder

OBSERVATIONS

Adrenal Gland	Cortex	Vacuolization Cytoplasmic	Mild
Heart		Degeneration	Chronic, Moderate
Kidney		Leukemia Mononuclear	
		Nephropathy	Chronic, Marked
Liver		Eosinophilic Focus	Moderate
	Bile Duct	Hyperplasia	Marked
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Note: LEUKEMIA MONUC	TGLs = 3-4		
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
	Mediastinal	Leukemia Mononuclear	
	Mesenteric	Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 2-14,5-12		
Mammary Gland		Hyperplasia	Cystic, Mild
Pituitary Gland	Pars Distalis	Adenoma	
Preputial Gland		Inflammation	Chronic Active, Mild
Prostate		Inflammation	Chronic Active, Mild
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLs = 1-11 ]			
Stomach	Forestomach	Inflammation	Chronic Active, Moderate
	Glandular	Inflammation	Chronic Active, Mild
	Forestomach	Ulcer	Marked
Note: INFLAMMATION	TGLs = 7-15		

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:07

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8216

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 693

**DOSE:** 10 PPM 3-3

**DISP:** Moribund Sacrifice

**HISTO:** 852476

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA TGLs = 6-10			
Thymus		Leukemia Mononuclear	
Thyroid Gland	C Cell	Hyperplasia	Moderate
Tongue		Squamous Cell Carcinoma	
Note: SQUAM CEL CARC TGLs = 4-13			

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**PRIMARY CAUSE OF DEATH**

-

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA AND TONGUE MASS

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\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:07

**First Dose M/F:** NA / NA

**Lab:** BAT

---

**ANIMAL ID:** 8217

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** 10 PPM 3-3

**DISP:** Terminal Sacrifice

**HISTO:** 852477

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

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**OBSERVATIONS**

Liver

Basophilic Focus

Minimal

Eosinophilic Focus

Moderate

Bile Duct

Hyperplasia

Mild

Hypertrophy

Mild

Leukemia Mononuclear

Spleen

Leukemia Mononuclear

Testes

Bilateral, Interstit Cell

Adenoma

Note: ADENOMA TGLs = 1-2,2-2

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**PRIMARY CAUSE OF DEATH**

-

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8218

TRT#: 5

SEX: Male

DAY ON TEST: 730

DOSE: 10 PPM 3-3

DISP: Terminal Sacrifice

HISTO: 852478

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Hepatocellular Adenoma

Bile Duct

Hyperplasia

Moderate

Oval Cell

Hyperplasia

Mild

Hypertrophy

Mild

Leukemia Mononuclear

Vacuolization Cytoplasmic

Mild

Spleen

Leukemia Mononuclear

Testes

Bilateral, Interstit Cell

Adenoma

Note: ADENOMA

TGLs = 1-2,2-2

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8219

TRT#: 5

SEX: Male

DAY ON TEST: 730

DOSE: 10 PPM 3-3

DISP: Terminal Sacrifice

HISTO: 852479

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Eosinophilic Focus

Marked

Hepatocellular Adenoma

Bile Duct

Hyperplasia

Moderate

Hypertrophy

Mild

Leukemia Mononuclear

Vacuolization Cytoplasmic

Moderate

Note: HEPATOCLR ADEN TGLs = 3-4

Spleen

Leukemia Mononuclear

[ Leukemia Mononuclear TGLs = 2-3 ]

Testes

Bilateral, Interstit Cell

Adenoma

[ Adenoma TGLs = 1-2 ]

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8220

TRT#: 5

SEX: Male

DAY ON TEST: 731

DOSE: 10 PPM 3-3

DISP: Terminal Sacrifice

HISTO: 852480

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

**OBSERVATIONS**

Liver		Eosinophilic Focus	Marked
		Hepatocellular Carcinoma	
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Mild
		Leukemia Mononuclear	
Spleen		Leukemia Mononuclear	
Stomach	Glandular	Mineralization	Mild
Testes	Bilateral, Interstit Cell	Adenoma	

Note: ADENOMA TGLs = 1-2,2-2

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL3-3, MESENTERY NODULE IS AUXILLARY SPLEEN, NCL

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8221

TRT#: 5

SEX: Male

DAY ON TEST: 484

DOSE: 10 PPM 3-3

DISP: Moribund Sacrifice

HISTO: 852481

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Brain
Epididymis	Esophagus	Heart	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Nose	Pancreas
Parathyroid Gland	Preputial Gland	Prostate	Salivary Glands
Skin	Stomach - Glandular	Thymus	Trachea
Urinary Bladder			

OBSERVATIONS

Bone Marrow	Femoral	Leukemia Mononuclear	
Kidney		Nephropathy	Chronic, Moderate
Liver		Hepatocellular Adenoma	
	Bile Duct	Hyperplasia	Moderate
		Hypertrophy	Mild
		Leukemia Mononuclear	
Note: HEPATOCLR ADEN TGLs = 2-12			
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Moderate
Pituitary Gland	Pars Distalis	Hyperplasia	Mild
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-11 ]			
Stomach	Forestomach	Acanthosis	Mild
Testes	Interstitial Cell	Adenoma	
	Interstitial Cell	Hyperplasia	Mild
Note: HYPERPLASIA TGLs = 3-10			
Note: ADENOMA TGLs = 3-10			
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8222

TRT#: 5

SEX: Male

DAY ON TEST: 689

DOSE: 10 PPM 3-3

DISP: Natural Death

HISTO: 852482

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Bone	Epididymis	Esophagus	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Nose	Parathyroid Gland
Prostate	Salivary Glands	Skin	Stomach - Glandular
Trachea	Urinary Bladder		

**OBSERVATIONS**

Adrenal Gland	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
	Cortex	Vacuolization Cytoplasmic	Mild
Bone Marrow	Femoral	Leukemia Mononuclear	
Brain		Compression	
		Hydrocephalus	Mild
Heart		Leukemia Mononuclear	
Kidney		Leukemia Mononuclear	
		Nephropathy	Chronic, Marked
Liver		Eosinophilic Focus	Mild
	Bile Duct	Hyperplasia	Marked
		Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 4-4		
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
	Mediastinal	Leukemia Mononuclear	
	Mesenteric	Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 3-12		
Pancreas	Acinus	Atrophy	Moderate
Pituitary Gland	Pars Distalis	Adenoma	
Note: ADENOMA	TGLs = 5-7		
Preputial Gland	Duct	Hyperplasia	Squamous, Moderate
		Inflammation	Chronic Active, Mild
Spleen		Leukemia Mononuclear	

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:07

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8222

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 689

**DOSE:** 10 PPM 3-3

**DISP:** Natural Death

**HISTO:** 852482

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Note: LEUKEMIA MONUC TGLs = 1-11

Stomach	Forestomach	Acanthosis	Moderate
	Forestomach	Inflammation	Chronic Active, Moderate

Note: ACANTHOSIS TGLs = 6-13

Testes	Bilateral, Interstit Cell	Adenoma	
Thymus		Leukemia Mononuclear	
Thyroid Gland	C Cell	Hyperplasia	Mild

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**PRIMARY CAUSE OF DEATH**

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Animal Note: CAUSE OF DEATH, LEUKEMIA MONONUCLEAR

Animal Note: TGL2-10, TESTIS SIZE WITHIN NORMAL LIMITS

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8223

TRT#: 5

SEX: Male

DAY ON TEST: 676

DOSE: 10 PPM 3-3

DISP: Moribund Sacrifice

HISTO: 852483

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Nose	Pancreas	Parathyroid Gland
Prostate	Salivary Glands	Stomach - Forestomach	Stomach - Glandular
Trachea	Urinary Bladder		

MISSING

Thymus

OBSERVATIONS

Adrenal Gland	Cortex	Degeneration	Cystic, Mild
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Marked
Note: NEPHROPATHY TGLs = 4-1			
Liver		Eosinophilic Focus	Moderate
	Bile Duct	Hyperplasia	Moderate
		Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 3-4			
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Pituitary Gland	Pars Distalis	Hyperplasia	Mild
Preputial Gland	Duct	Hyperplasia	Squamous, Mild
Skin	Subcut Tiss	Fibroma	
Note: FIBROMA TGLs = 1-11			
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 2-12 ]			
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA TGLs = 5-10,6-10			
Thyroid Gland	Follicular Cel	Adenoma	
	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

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\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)

**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:07

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8223

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 676

**DOSE:** 10 PPM 3-3

**DISP:** Moribund Sacrifice

**HISTO:** 852483

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Animal Note: TGL6-10, TESTIS SIZE WITHIN NORMAL LIMITS

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8224

TRT#: 5

SEX: Male

DAY ON TEST: 693

DOSE: 10 PPM 3-3

DISP: Moribund Sacrifice

HISTO: 852484

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Epididymis	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lung	Nose	Parathyroid Gland
Prostate	Salivary Glands	Skin	Stomach - Glandular
Trachea	Urinary Bladder		

INSUFFICIENT TISSUE

Thymus

OBSERVATIONS

Brain		Hydrocephalus	Mild
Heart		Degeneration	Chronic, Mild
Kidney	Renal Tubule	Adenoma	
		Nephropathy	Chronic, Marked
Liver		Eosinophilic Focus	Moderate
	Bile Duct	Hyperplasia	Mild
		Hypertrophy	Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Moderate
Pancreas	Acinus	Adenoma	
Pituitary Gland	Pars Distalis	Adenoma	
Note: ADENOMA	TGLs = 3-7		
Preputial Gland		Inflammation	Chronic Active, Moderate
Note: INFLAMMATION	TGLs = 1-10		
Spleen		Leukemia Mononuclear	
Stomach	Forestomach	Inflammation	Chronic, Mild
Testes	Bilateral, Interstit Cell	Adenoma	
Thyroid Gland	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)

**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:07

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8224

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 693

**DOSE:** 10 PPM 3-3

**DISP:** Moribund Sacrifice

**HISTO:** 852484

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Animal Note: MORIBUND SAC DUE TO PITUITARY TUMOR AND LEUKEMIA

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\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01  
**Test Type:** CHRONIC  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 08:38:07  
**First Dose M/F:** NA / NA  
**Lab:** BAT

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<b>ANIMAL ID:</b> 8225	<b>TRT#:</b> 5	<b>SEX:</b> Male	<b>DAY ON TEST:</b> 731
	<b>DOSE:</b> 10 PPM 3-3	<b>DISP:</b> Terminal Sacrifice	<b>HISTO:</b> 852485

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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**NORMAL**

Stomach - Forestomach	Stomach - Glandular
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**OBSERVATIONS**

Liver		Degeneration	Cystic, Mild
		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	
	Bile Duct	Hyperplasia	Marked
	Oval Cell	Hyperplasia	Mild
		Hypertrophy	Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Moderate
Note: LEUKEMIA MONUC	TGLs = 3-4		
Note: HEPATOCLR ADEN	TGLs = 2-3		
Spleen		Leukemia Mononuclear	
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA	TGLs = 1-2		

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**PRIMARY CAUSE OF DEATH**

-

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8226

TRT#: 5

SEX: Male

DAY ON TEST: 657

DOSE: 10 PPM 3-3

DISP: Moribund Sacrifice

HISTO: 852486

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Nose	Parathyroid Gland	Pituitary Gland	Prostate
Salivary Glands	Skin	Stomach - Forestomach	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	

OBSERVATIONS

Adrenal Gland	Cortex	Vacuolization Cytoplasmic	Mild
Heart		Degeneration	Chronic, Mild
Islets, Pancreatic		Adenoma	
Kidney		Nephropathy	Chronic, Moderate
Liver		Eosinophilic Focus	Marked
	Bile Duct	Hepatocellular Adenoma	Multiple
		Hyperplasia	Marked
		Leukemia Mononuclear	
Note: HEPATOCLR ADEN	TGLs = 3-4,3-12,3-13		
Note: LEUKEMIA MONUC	TGLs = 2-4,2-12,2-13		
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Mild
Preputial Gland		Inflammation	Chronic Active, Mild
Spleen		Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 1-11		
Testes	Bilateral, Interstit Cell	Adenoma	
Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8227

TRT#: 5

SEX: Male

DAY ON TEST: 583

DOSE: 10 PPM 3-3

DISP: Natural Death

HISTO: 852487

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Epididymis	Esophagus	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Nose	Pancreas	Parathyroid Gland
Pituitary Gland	Prostate	Salivary Glands	Skin
Stomach - Forestomach	Stomach - Glandular	Trachea	Urinary Bladder

MISSING

Thymus

AUTO PRECLUDES DIAG.

Intestine Large - Cecum

OBSERVATIONS

Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Moderate
Liver		Eosinophilic Focus	Minimal
	Bile Duct	Hyperplasia	Mild
		Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 2-4			
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Mild
Preputial Gland		Inflammation	Chronic Active, Mild
Spleen		Fibrosis	Mild
		Leukemia Mononuclear	
[ Fibrosis TGLS = 1-1 ]			
Testes	Interstit Cell	Adenoma	
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: CAUSE OF DEATH, LEUKEMIA MONONUCLEAR

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 05077-01  
**Test Type:** CHRONIC  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 08:38:07  
**First Dose M/F:** NA / NA  
**Lab:** BAT

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<b>ANIMAL ID:</b> 8228	<b>TRT#:</b> 5	<b>SEX:</b> Male	<b>DAY ON TEST:</b> 734
	<b>DOSE:</b> 10 PPM 3-3	<b>DISP:</b> Terminal Sacrifice	<b>HISTO:</b> 852488

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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**NORMAL**

Stomach - Forestomach	Stomach - Glandular
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**OBSERVATIONS**

Liver		Eosinophilic Focus	Marked
	Bile Duct	Hyperplasia	Marked
		Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 6-6			
Lymph Node	Mediastinal	Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 4-5			
Preputial Gland		Carcinoma	
Note: CARCINOMA TGLs = 1-2			
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 3-4 ]			
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA TGLs = 2-3			

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PRIMARY CAUSE OF DEATH

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8229

TRT#: 5

SEX: Male

DAY ON TEST: 734

DOSE: 10 PPM 3-3

DISP: Terminal Sacrifice

HISTO: 852489

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Bile Duct

Oval Cell

Eosinophilic Focus

Hyperplasia

Hyperplasia

Hypertrophy

Leukemia Mononuclear

Vacuolization Cytoplasmic

Adenosquamous Carcinoma

Moderate

Moderate

Mild

Mild

Moderate

Lung

Note: CARC ADENOSQUA TGLs = 1-4

Skin

Note: PAPILLOMA SQUA TGLs = 2-2

Squamous Cell Papilloma

Spleen

Leukemia Mononuclear

Testes

Bilateral, Interstit Cell

Adenoma

Note: ADENOMA TGLs = 3-3

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL4-3, TESTIS SIZE WITHIN NORMAL LIMITS

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8230

TRT#: 5

SEX: Male

DAY ON TEST: 734

DOSE: 10 PPM 3-3

DISP: Terminal Sacrifice

HISTO: 852490

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Eosinophilic Focus

Hepatocellular Adenoma

Multiple

Bile Duct

Hyperplasia

Mild

Oval Cell

Hyperplasia

Mild

Hypertrophy

Mild

Leukemia Mononuclear

Note: LEUKEMIA MONUC TGLs = 5-4

Note: HEPATOCLR ADEN TGLs = 4-5

Preputial Gland

Adenoma

Note: ADENOMA TGLs = 3-2

Spleen

Leukemia Mononuclear

Testes

Bilateral, Interstit Cell

Adenoma

Note: ADENOMA TGLs = 1-3,2-3

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL3-2, SKIN LESION IS PREPUTIAL GLAND

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8231

TRT#: 5

SEX: Male

DAY ON TEST: 730

DOSE: 10 PPM 3-3

DISP: Moribund Sacrifice

HISTO: 852491

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lung	Nose	Parathyroid Gland
Salivary Glands	Skin	Stomach - Glandular	Thymus
Trachea	Urinary Bladder		

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Cortex	Vacuolization Cytoplasmic	Mild
Heart		Degeneration	Chronic, Moderate
Kidney		Nephropathy	Chronic, Moderate
Liver		Eosinophilic Focus	Marked
	Bile Duct	Hyperplasia	Moderate
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Note: LEUKEMIA MONUC TGLs = 6-4			
Lymph Node	Mesenteric	Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 2-6			
Note: MANDIBULAR LN NORMAL			
Pancreas	Acinus	Atrophy	Marked
Pituitary Gland	Pars Distalis	Hyperplasia	Mild
Preputial Gland		Inflammation	Chronic Active, Mild
Prostate		Inflammation	Chronic Active, Mild
Spleen		Leukemia Mononuclear	
Stomach	Forestomach	Acanthosis	Mild
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA TGLs = 3-10			
Thyroid Gland	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)

**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:07

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8231

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** 10 PPM 3-3

**DISP:** Moribund Sacrifice

**HISTO:** 852491

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8232

TRT#: 5

SEX: Male

DAY ON TEST: 735

DOSE: 10 PPM 3-3

DISP: Terminal Sacrifice

HISTO: 852492

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Eosinophilic Focus

Marked

Hepatocellular Adenoma

Multiple

Bile Duct

Hyperplasia

Moderate

Oval Cell

Hyperplasia

Mild

Hypertrophy

Mild

Leukemia Mononuclear

Vacuolization Cytoplasmic

Marked

[ Hyperplasia TGLS = 4-4 ]

Spleen

Leukemia Mononuclear

[ Leukemia Mononuclear TGLS = 3-2 ]

Testes

Bilateral, Interstit Cell

Adenoma

[ Adenoma TGLS = 1-3,2-3 ]

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8233

TRT#: 5

SEX: Male

DAY ON TEST: 735

DOSE: 10 PPM 3-3

DISP: Terminal Sacrifice

HISTO: 852493

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Stomach - Forestomach

Stomach - Glandular

MISSING

Adrenal Gland - Cortex

OBSERVATIONS

Adrenal Gland

Medulla

Pheochromocytoma Malignant

Note: PHEOCHROM MAL TGLs = 7-7

Liver

Eosinophilic Focus

Mild

Hepatocellular Adenoma

Multiple

Bile Duct

Hyperplasia

Marked

Oval Cell

Hyperplasia

Mild

Leukemia Mononuclear

Note: HEPATOCLR ADEN TGLs = 3-4

Lymph Node

Mediastinal

Leukemia Mononuclear

[ Leukemia Mononuclear TGLS = 6-6 ]

Preputial Gland

Duct

Dilatation

Moderate

[ Dilatation TGLS = 1-2 ]

Spleen

Leukemia Mononuclear

[ Leukemia Mononuclear TGLS = 4-5 ]

Testes

Bilateral, Interstit Cell

Adenoma

[ Adenoma TGLS = 2-3 ]

Thymus

Leukemia Mononuclear

Note: LEUKEMIA MONUC TGLs = 5-4

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL7-7, TISSUE IS ADRENAL GLAND

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8234

TRT#: 5

SEX: Male

DAY ON TEST: 491

DOSE: 10 PPM 3-3

DISP: Moribund Sacrifice

HISTO: 852494

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Brain	Epididymis
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Islets, Pancreatic	Nose
Parathyroid Gland	Prostate	Salivary Glands	Skin
Stomach - Glandular	Trachea		

MISSING

Preputial Gland

OBSERVATIONS

Adrenal Gland	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
	Cortex	Necrosis	Mild
Heart		Leukemia Mononuclear	
Intestine Small	Jejunum	Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 4-6		
Kidney		Leukemia Mononuclear	
		Nephropathy	Chronic, Minimal
Liver	Bile Duct	Hyperplasia	Moderate
		Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 3-4		
Lung		Leukemia Mononuclear	
Lymph Node	Deep Cervical	Leukemia Mononuclear	
	Mandibular	Leukemia Mononuclear	
	Mediastinal	Leukemia Mononuclear	
	Mesenteric	Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 5-11,6-7,7-13 ]			
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas		Leukemia Mononuclear	
Pituitary Gland	Pars Distalis	Hyperplasia	Mild
	Pars Distalis	Leukemia Mononuclear	
Spleen		Leukemia Mononuclear	

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:07

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8234

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 491

**DOSE:** 10 PPM 3-3

**DISP:** Moribund Sacrifice

**HISTO:** 852494

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Leukemia Mononuclear TGLS = 1-12 ]

Stomach	Forestomach	Leukemia Mononuclear	
Testes	Interstit Cell	Hyperplasia	Mild
Thymus		Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 2-2		
Thyroid Gland	C Cell	Hyperplasia	Mild
Urinary Bladder		Leukemia Mononuclear	

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**PRIMARY CAUSE OF DEATH**

-

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

Animal Note: TGL6-7, THYROID NODULE IS CERVICAL LYMPH NODE

---

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8235

TRT#: 5

SEX: Male

DAY ON TEST: 517

DOSE: 10 PPM 3-3

DISP: Natural Death

HISTO: 852495

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Epididymis	Esophagus	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Lymph Node	Nose
Pancreas	Parathyroid Gland	Pituitary Gland	Prostate
Salivary Glands	Skin	Stomach - Forestomach	Stomach - Glandular
Testes	Trachea	Urinary Bladder	

MISSING

Thymus

OBSERVATIONS

Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Moderate
Liver	Bile Duct	Hyperplasia	Mild
		Leukemia Mononuclear	
		Necrosis	Moderate
		Vacuolization Cytoplasmic	Mild
Note: NECROSIS TGLs = 1-4			
Lung	Interstitialium	Inflammation	Chronic Active, Moderate
Note: INFLAMMATION TGLs = 4-2,4-3			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Preputial Gland		Inflammation	Chronic Active, Minimal
Spleen		Leukemia Mononuclear	
Thyroid Gland	C Cell	Carcinoma	
	C Cell	Hyperplasia	Mild
Note: CARCINOMA TGLs = 2-11			

PRIMARY CAUSE OF DEATH

-

Animal Note: COD, THYROID TUMOR AND PNEUMONIA

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)

**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:07

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8235

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 517

**DOSE:** 10 PPM 3-3

**DISP:** Natural Death

**HISTO:** 852495

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Animal Note: TGL3-7, MANDIBULAR LN WITHIN NORMAL LIMITS

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8236

TRT#: 5

SEX: Male

DAY ON TEST: 492

DOSE: 10 PPM 3-3

DISP: Natural Death

HISTO: 852496

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Epididymis	Esophagus
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Jejunum	Islets, Pancreatic	Nose	Pancreas
Parathyroid Gland	Pituitary Gland	Prostate	Salivary Glands
Skin	Stomach - Forestomach	Stomach - Glandular	Trachea
Urinary Bladder			

AUTO PRECLUDES DIAG.

Intestine Small - Ileum

OBSERVATIONS

Adrenal Gland	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
Brain		Hemorrhage	Mild
Heart		Leukemia Mononuclear	
Kidney		Leukemia Mononuclear	
		Nephropathy	Chronic, Moderate
Liver	Bile Duct	Hyperplasia	Mild
		Leukemia Mononuclear	
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Preputial Gland		Inflammation	Chronic Active, Moderate
Seminal Vesicle		Dilatation	Mild
Note: DILATATION	TGLs = 1-11		
Spleen		Leukemia Mononuclear	
Testes	Interstit Cell	Adenoma	
Note: ADENOMA	TGLs = 2-10		
Thymus		Leukemia Mononuclear	
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL2-10, ONLY ONE TESTIS HAS VISIBLE TUMOR

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:07

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8236

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 492

**DOSE:** 10 PPM 3-3

**DISP:** Natural Death

**HISTO:** 852496

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Animal Note: CAUSE OF DEATH LEUKEMIA MONONUCLEAR

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8237

TRT#: 5

SEX: Male

DAY ON TEST: 676

DOSE: 10 PPM 3-3

DISP: Moribund Sacrifice

HISTO: 852497

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Epididymis
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Nose	Parathyroid Gland	Salivary Glands	Skin
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder			

OBSERVATIONS

Bone Marrow	Femoral	Leukemia Mononuclear	
Brain		Glioma Malignant	
Note: [ GLIOMA MAL ] TGLs = 1-5			
Heart		Degeneration	Chronic, Moderate
Kidney		Leukemia Mononuclear	
		Nephropathy	Chronic, Marked
[ Nephropathy TGLS = 6-1,6-14 ]			
Liver		Basophilic Focus	Mild
		Eosinophilic Focus	Mild
	Bile Duct	Hyperplasia	Moderate
		Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 5-4			
Lung		Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 4-2,4-3			
Lymph Node	Mandibular	Leukemia Mononuclear	
	Mediastinal	Leukemia Mononuclear	
	Pancreatic	Leukemia Mononuclear	
	Renal	Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 3-15,7-13,9-11			
Pancreas	Acinus	Atrophy	Mild
Pituitary Gland	Pars Distalis	Hyperplasia	Moderate
Preputial Gland		Inflammation	Chronic Active, Mild
Prostate		Inflammation	Chronic Active, Marked

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:07

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8237

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 676

**DOSE:** 10 PPM 3-3

**DISP:** Moribund Sacrifice

**HISTO:** 852497

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Note: INFLAMMATION TGLs = 11-10

Spleen

Leukemia Mononuclear

[ Leukemia Mononuclear TGLS = 8-12 ]

Testes

Seminif Tub

Atrophy

Moderate

Interstit Cell

Hyperplasia

Mild

Note: ATROPHY TGLs = 10-10

Thyroid Gland

C Cell

Carcinoma

C Cell

Hyperplasia

Mild

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**PRIMARY CAUSE OF DEATH**

-

---

Animal Note: TGL2, PREPUTIAL SKIN NOT FOUND AT TRIM

Animal Note: TGL9-11, NODULE IS PANCREATIC LYMPH NODE

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA AND BRAIN TUMOR

---

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8238

TRT#: 5

SEX: Male

DAY ON TEST: 685

DOSE: 10 PPM 3-3

DISP: Moribund Sacrifice

HISTO: 852498

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Parathyroid Gland	Preputial Gland	Prostate
Salivary Glands	Skin	Stomach - Forestomach	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	

OBSERVATIONS

Adrenal Gland	Cortex	Vacuolization Cytoplasmic	Mild
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Moderate
Liver	Bile Duct	Eosinophilic Focus	Moderate
		Hyperplasia	Marked
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Minimal
Note: LEUKEMIA MONUC TGLs = 2-4,2-12			
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Nose	Mucosa	Inflammation	Chronic Active, Mild
Pancreas	Acinus	Atrophy	Moderate
Pituitary Gland	Pars Distalis	Adenoma	
Note: ADENOMA TGLs = 4-7			
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-11 ]			
Testes	Bilateral, Interstit Cell	Adenoma	
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8239

TRT#: 5

SEX: Male

DAY ON TEST: 736

DOSE: 10 PPM 3-3

DISP: Terminal Sacrifice

HISTO: 852499

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Minimal

Eosinophilic Focus

Moderate

Bile Duct

Hyperplasia

Moderate

Hypertrophy

Mild

Inflammation

Chronic, Multifocal, Mild

Vacuolization Cytoplasmic

Moderate

Testes

Bilateral, Interstit Cell

Adenoma

[ Adenoma TGLS = 1-2,2-2 ]

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8240

TRT#: 5

SEX: Male

DAY ON TEST: 736

DOSE: 10 PPM 3-3

DISP: Terminal Sacrifice

HISTO: 852500

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Stomach - Forestomach

OBSERVATIONS

Liver

Eosinophilic Focus

Marked

Hepatocellular Adenoma

Multiple

Bile Duct

Hyperplasia

Moderate

Oval Cell

Hyperplasia

Mild

Hypertrophy

Mild

Leukemia Mononuclear

Vacuolization Cytoplasmic

Moderate

Note: [ HEPATOCLR ADEN ] TGLs = 6-7,7-8

[ Hyperplasia TGLS = 5-6 ]

Spleen

Leukemia Mononuclear

Note: LEUKEMIA MONUC TGLs = 4-4

Stomach

Glandular

Dysplasia

Mild

Note: DYSPLASIA TGLs = 8-5

Testes

Bilateral, Interstit Cell

Adenoma

Note: ADENOMA TGLs = 1-2,3-3

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL2-3, TESTIS SIZE WITHIN NORMAL LIMITS

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8241

TRT#: 5

SEX: Male

DAY ON TEST: 645

DOSE: 10 PPM 3-3

DISP: Moribund Sacrifice

HISTO: 852501

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Brain	Epididymis
Esophagus	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Nose
Parathyroid Gland	Salivary Glands	Skin	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	

OBSERVATIONS

Adrenal Gland	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
	Cortex	Vacuolization Cytoplasmic	Mild
Heart		Degeneration	Chronic, Mild
Intestine Large	Cecum	Inflammation	Chronic Active, Mild
	Cecum	Ulcer	Mild
Kidney		Nephropathy	Chronic, Marked
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Marked
		Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 2-12,2-13		
Note: HEPATOCLR ADEN	TGLs = 3-12,4-13		
Lung		Leukemia Mononuclear	
Lymph Node	Mediastinal	Leukemia Mononuclear	
Pancreas	Acinus	Atrophy	Minimal
Pituitary Gland	Pars Distalis	Leukemia Mononuclear	
Preputial Gland		Inflammation	Chronic Active, Mild
Prostate		Inflammation	Acute, Moderate
Spleen		Leukemia Mononuclear	
		[ Leukemia Mononuclear TGLS = 1-11 ]	
Testes	Bilateral, Interstit Cell	Adenoma	
Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Moderate

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:07

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8241

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 645

**DOSE:** 10 PPM 3-3

**DISP:** Moribund Sacrifice

**HISTO:** 852501

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Urinary Bladder

Inflammation

Acute, Moderate

---

PRIMARY CAUSE OF DEATH

-

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Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

---

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8242

TRT#: 5

SEX: Male

DAY ON TEST: 549

DOSE: 10 PPM 3-3

DISP: Moribund Sacrifice

HISTO: 852502

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Epididymis	Esophagus	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Lung	Lymph Node
Nose	Parathyroid Gland	Pituitary Gland	Preputial Gland
Salivary Glands	Skin	Spleen	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	Urinary Bladder

**OBSERVATIONS**

Heart		Degeneration	Chronic, Moderate
Kidney	Cortex	Cyst	
		Nephropathy	Chronic, Marked
Note: NEPHROPATHY TGLs = 1-1			
Liver		Basophilic Focus	Minimal
		Eosinophilic Focus	Minimal
		Hypertrophy	Moderate
		Vacuolization Cytoplasmic	Marked
Note: VACUOLIZ CYTO TGLs = 2-4,3-4			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Minimal
Prostate		Inflammation	Chronic Active, Mild
		Metaplasia	Squamous, Mild
Testes	Interstitial Cell	Adenoma	
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SAC. DUE TO NEPHROPATHY AND LIVER CHANGES

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8243

TRT#: 5

SEX: Male

DAY ON TEST: 691

DOSE: 10 PPM 3-3

DISP: Moribund Sacrifice

HISTO: 852503

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Bone	Bone Marrow	Epididymis	Esophagus
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Parathyroid Gland
Pituitary Gland	Prostate	Salivary Glands	Skin
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder			

**OBSERVATIONS**

Adrenal Gland	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
Brain		Hemorrhage	Mild
Note: HEMORRHAGE	TGLs = 4-5		
Eye	Retina	Atrophy	Marked
	Lens	Cataract	Moderate
Note: CATARACT	TGLs = 1-11		
Note: ATROPHY	TGLs = 1-11		
Heart		Leukemia Mononuclear	
Kidney		Nephropathy	Chronic, Moderate
Liver		Eosinophilic Focus	Mild
	Bile Duct	Hyperplasia	Marked
		Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 3-4	Vacuolization Cytoplasmic	Mild
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Moderate
Nose	Mucosa	Inflammation	Chronic Active, Mild
Pancreas	Acinus	Atrophy	Mild
Preputial Gland		Inflammation	Chronic Active, Minimal
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 2-12 ]			

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:07

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8243

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 691

**DOSE:** 10 PPM 3-3

**DISP:** Moribund Sacrifice

**HISTO:** 852503

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Testes

Bilateral, Interstit Cell

Adenoma

Thyroid Gland

C Cell

Hyperplasia

Moderate

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**PRIMARY CAUSE OF DEATH**

-

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Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8244

TRT#: 5

SEX: Male

DAY ON TEST: 582

DOSE: 10 PPM 3-3

DISP: Moribund Sacrifice

HISTO: 852504

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Heart	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Lung	Lymph Node
Nose	Parathyroid Gland	Prostate	Salivary Glands
Skin	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder		

OBSERVATIONS

Adrenal Gland	Cortex	Vacuolization Cytoplasmic	Mild
Kidney		Nephropathy	Chronic, Moderate
Liver		Eosinophilic Focus	Moderate
	Bile Duct	Hyperplasia	Moderate
		Hypertrophy	Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Note: LEUKEMIA MONUC TGLs = 3-4			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Pancreas	Acinus	Atrophy	Moderate
Pituitary Gland	Pars Distalis	Adenoma	
	Pars Distalis	Cyst	
Preputial Gland		Carcinoma	
Note: CARCINOMA TGLs = 2-11			
Spleen		Fibrosis	Moderate
		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-1 ]			
Testes	Bilateral, Interstit Cell	Adenoma	
	Interstit Cell	Hyperplasia	Mild
Thyroid Gland	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)

**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:07

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8244

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 582

**DOSE:** 10 PPM 3-3

**DISP:** Moribund Sacrifice

**HISTO:** 852504

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Animal Note: MORIBUND SAC> DUE TO LEUKEMIA AND PREPUTIAL TUMOR

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8245

TRT#: 5

SEX: Male

DAY ON TEST: 455

DOSE: 10 PPM 3-3

DISP: Moribund Sacrifice

HISTO: 852505

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Nose	Pancreas	Parathyroid Gland
Prostate	Salivary Glands	Spleen	Stomach - Forestomach
Stomach - Glandular	Thymus	Urinary Bladder	

INSUFFICIENT TISSUE

Pituitary Gland

OBSERVATIONS

Adrenal Gland	Medulla	Pheochromocytoma Benign	
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Mild
Liver	Bile Duct	Hyperplasia	Mild
		Hypertrophy	Mild
		Vacuolization Cytoplasmic	Mild
Lung		Fibrosarcoma	Metastatic (Skin)
Lymph Node	Mediastinal	Fibrosarcoma	Metastatic (Skin)
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Preputial Gland	Duct	Hyperplasia	Squamous, Moderate
Note: HYPERPLASIA TGLs = 2-11			
Skin	Subcut Tiss	Fibrosarcoma	
Note: FIBROSARC TGLs = 1-13			
Testes	Interstit Cell	Adenoma	
	Interstit Cell	Hyperplasia	Mild
Thyroid Gland	C Cell	Hyperplasia	Moderate
Trachea	Peritrach Tiss	Fibrosarcoma	Metastatic (Skin)
Note: FIBROSARC TGLs = 3-12			

PRIMARY CAUSE OF DEATH

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\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:07

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8245

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 455

**DOSE:** 10 PPM 3-3

**DISP:** Moribund Sacrifice

**HISTO:** 852505

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Animal Note: MORIBUND SACRIFICE DUE TO SKIN TUMOR

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8246

TRT#: 5

SEX: Male

DAY ON TEST: 626

DOSE: 10 PPM 3-3

DISP: Moribund Sacrifice

HISTO: 852506

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Heart	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Nose	Pancreas
Parathyroid Gland	Pituitary Gland	Salivary Glands	Skin
Stomach - Glandular	Trachea	Urinary Bladder	

MISSING

Prostate	Thymus
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OBSERVATIONS

Adrenal Gland	Cortex	Vacuolization Cytoplasmic	Mild
Kidney		Nephropathy	Chronic, Moderate
Liver		Eosinophilic Focus	Mild
	Bile Duct	Hyperplasia	Moderate
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Note: LEUKEMIA MONUC TGLs = 2-4			
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Moderate
Preputial Gland		Inflammation	Chronic Active, Mild
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-11 ]			
Stomach	Forestomach	Acanthosis	Mild
Testes	Interstit Cell	Adenoma	
	Interstit Cell	Hyperplasia	Mild
Thyroid Gland	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8247

TRT#: 5

SEX: Male

DAY ON TEST: 618

DOSE: 10 PPM 3-3

DISP: Moribund Sacrifice

HISTO: 852507

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Intestine Large - Cecum	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Nose	Parathyroid Gland	Pituitary Gland	Prostate
Salivary Glands	Skin	Stomach - Forestomach	Stomach - Glandular
Trachea	Urinary Bladder		

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Cortex	Vacuolization Cytoplasmic	Mild
Heart		Degeneration	Chronic, Mild
Intestine Large	Colon	Parasite Metazoan	
Kidney		Leukemia Mononuclear	
		Nephropathy	Chronic, Moderate
Liver		Eosinophilic Focus	Mild
	Bile Duct	Hyperplasia	Mild
		Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 3-4		
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
	Mediastinal	Leukemia Mononuclear	
	Mesenteric	Leukemia Mononuclear	
	Pancreatic	Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 2-11,4-13		
Mammary Gland		Hyperplasia	Cystic, Moderate
Pancreas	Acinus	Atrophy	Mild
Preputial Gland		Inflammation	Chronic Active, Mild
Spleen		Leukemia Mononuclear	
	[ Leukemia Mononuclear TGLS = 1-12 ]		
Testes	Interstit Cell	Adenoma	
	Interstit Cell	Hyperplasia	Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:07

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8247

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 618

**DOSE:** 10 PPM 3-3

**DISP:** Moribund Sacrifice

**HISTO:** 852507

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Thymus

Leukemia Mononuclear

Thyroid Gland

C Cell

Hyperplasia

Mild

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**PRIMARY CAUSE OF DEATH**

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Animal Note: TGL2-11, PANCREATIC MASS IS PANCREATIC LYMPH NODE

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8248

TRT#: 5

SEX: Male

DAY ON TEST: 668

DOSE: 10 PPM 3-3

DISP: Moribund Sacrifice

HISTO: 852508

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Lung	Nose	Pancreas	Parathyroid Gland
Prostate	Salivary Glands	Skin	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	

OBSERVATIONS

Adrenal Gland	Cortex	Vacuolization Cytoplasmic	Mild
Eye	Retina	Atrophy	Marked
	Lens	Cataract	Moderate
Note: ATROPHY	TGLs = 4-12		
Note: CATARACT	TGLs = 4-12		
Heart		Degeneration	Chronic, Mild
Intestine Large	Rectum	Parasite Metazoan	
Kidney		Nephropathy	Chronic, Marked
[ Nephropathy TGLS = 2-1 ]			
Liver	Bile Duct	Eosinophilic Focus	Moderate
		Hyperplasia	Moderate
		Hypertrophy	Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Moderate
Note: LEUKEMIA MONUC	TGLs = 3-4		
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Mild
Pituitary Gland	Pars Distalis	Adenoma	
Preputial Gland		Inflammation	Chronic Active, Mild
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-11 ]			
Stomach	Forestomach	Acanthosis	Moderate
	Forestomach	Inflammation	Chronic Active, Moderate

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:07

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8248

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 668

**DOSE:** 10 PPM 3-3

**DISP:** Moribund Sacrifice

**HISTO:** 852508

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Testes

Bilateral, Interstit Cell

Adenoma

Thyroid Gland

C Cell

Hyperplasia

Moderate

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**PRIMARY CAUSE OF DEATH**

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Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

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\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8249

TRT#: 5

SEX: Male

DAY ON TEST: 695

DOSE: 10 PPM 3-3

DISP: Moribund Sacrifice

HISTO: 852509

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Brain	Epididymis	Esophagus
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Nose
Parathyroid Gland	Prostate	Salivary Glands	Skin
Stomach - Forestomach	Stomach - Glandular	Trachea	Urinary Bladder

MISSING

Thymus

OBSERVATIONS

Adrenal Gland	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
	Cortex	Vacuolization Cytoplasmic	Mild
Bone Marrow	Femoral	Leukemia Mononuclear	
Heart		Degeneration	Chronic, Moderate
Kidney		Nephropathy	Chronic, Marked
Liver		Eosinophilic Focus	Moderate
	Bile Duct	Hyperplasia	Marked
		Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 3-4		
Lung		Alveolar/Bronchiolar Carcinoma	
		Leukemia Mononuclear	
Note: ALV BRON CARC	TGLs = 5-13		
Lymph Node	Mandibular	Leukemia Mononuclear	
	Mediastinal	Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 4-11		
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Moderate
Pituitary Gland	Pars Distalis	Hyperplasia	Mild
Preputial Gland		Inflammation	Chronic Active, Mild
Spleen		Leukemia Mononuclear	

[ Leukemia Mononuclear TGLS = 1-12 ]

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:07

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8249

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 695

**DOSE:** 10 PPM 3-3

**DISP:** Moribund Sacrifice

**HISTO:** 852509

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA TGLs = 2-10			
Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Mild

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**PRIMARY CAUSE OF DEATH**

-

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8250

TRT#: 5

SEX: Male

DAY ON TEST: 696

DOSE: 10 PPM 3-3

DISP: Moribund Sacrifice

HISTO: 852510

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Epididymis	Esophagus	Heart
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Lung
Parathyroid Gland	Prostate	Salivary Glands	Skin
Stomach - Glandular	Trachea	Urinary Bladder	

MISSING

Thymus

OBSERVATIONS

Kidney		Nephropathy	Chronic, Marked
Note: NEPHROPATHY	TGLs = 4-1,4-11		
Liver		Basophilic Focus	Mild
		Eosinophilic Focus	Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Note: EOSIN FOCUS	TGLs = 3-4		
Note: LEUKEMIA MONUC	TGLs = 2-4		
Lymph Node	Mandibular	Leukemia Mononuclear	
Nose		Foreign Body	Mild
	Mucosa	Inflammation	Acute, Mild
Pancreas	Acinus	Hyperplasia	Mild
Pituitary Gland	Pars Distalis	Cyst	
Preputial Gland		Inflammation	Chronic Active, Moderate
Spleen		Leukemia Mononuclear	
Stomach	Forestomach	Acanthosis	Moderate
	Forestomach	Inflammation	Chronic Active, Moderate
	Forestomach	Ulcer	Moderate
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA	TGLs = 5-10,5-12		
Thyroid Gland	C Cell	Hyperplasia	Moderate

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:07

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8250

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 696

**DOSE:** 10 PPM 3-3

**DISP:** Moribund Sacrifice

**HISTO:** 852510

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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PRIMARY CAUSE OF DEATH

-

Animal Note: TGL1-10, TESTIS SIZE WITHIN NORMAL LIMITS

Animal Note: MORIBUND SACRIFICE DUE TO NEPHROPATHY

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8251

TRT#: 6

SEX: Male

DAY ON TEST: 727

DOSE: 10 PPM 10-3

DISP: Terminal Sacrifice

HISTO: 852521

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Eosinophilic Focus

Marked

Hepatocellular Adenoma

Bile Duct

Hyperplasia

Moderate

Hypertrophy

Moderate

Vacuolization Cytoplasmic

Moderate

Note: HEPATOCLR ADEN TGLs = 2-5

Lymph Node

Mediastinal

Congestion

Marked

Note: CONGESTION TGLs = 1-3

Mesentery

Lipoma

Note: LIPOMA TGLs = 3-4

Testes

Interstit Cell

Adenoma

Seminif Tub

Atrophy

Moderate

Seminif Tub

Mineralization

Moderate

Note: ATROPHY TGLs = 5-2

Note: ADENOMA TGLs = 4-2

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8252

TRT#: 6

SEX: Male

DAY ON TEST: 679

DOSE: 10 PPM 10-3

DISP: Moribund Sacrifice

HISTO: 852522

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Brain	Epididymis
Esophagus	Eye	Heart	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Pancreas	Prostate
Salivary Glands	Skin	Stomach - Forestomach	Stomach - Glandular
Trachea	Urinary Bladder		

MISSING

Parathyroid Gland

OBSERVATIONS

Adrenal Gland	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
Kidney		Leukemia Mononuclear	
		Nephropathy	Chronic, Mild
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	
	Bile Duct	Hyperplasia	Marked
	Oval Cell	Hyperplasia	Mild
		Leukemia Mononuclear	
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
	Mediastinal	Leukemia Mononuclear	
	Pancreatic	Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 2-12,3-15,4-13			
Mammary Gland		Hyperplasia	Cystic, Mild
Nose	Mucosa	Inflammation	Chronic Active, Mild
Pituitary Gland	Pars Distalis	Hyperplasia	Mild
	Pars Distalis	Leukemia Mononuclear	
Preputial Gland		Inflammation	Chronic Active, Mild
Spleen		Leukemia Mononuclear	

[ Leukemia Mononuclear TGLS = 5-11 ]

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:07

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8252

**TRT#:** 6

**SEX:** Male

**DAY ON TEST:** 679

**DOSE:** 10 PPM 10-3

**DISP:** Moribund Sacrifice

**HISTO:** 852522

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA	TGLs = 6-10		
Thymus		Leukemia Mononuclear	
Thyroid Gland	C Cell	Hyperplasia	Moderate
	Follicular Cel	Hyperplasia	Moderate

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**PRIMARY CAUSE OF DEATH**

-

Animal Note: TGL1-14, EYES NORMAL ON MICRO, NO OBVIOUS PIGMENT

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8253

TRT#: 6

SEX: Male

DAY ON TEST: 727

DOSE: 10 PPM 10-3

DISP: Terminal Sacrifice

HISTO: 852523

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Eosinophilic Focus

Marked

Hepatocellular Adenoma

Bile Duct

Hyperplasia

Moderate

Oval Cell

Hyperplasia

Mild

Hypertrophy

Mild

Leukemia Mononuclear

Vacuolization Cytoplasmic

Moderate

Note: HEPATOCLR ADEN TGLs = 2-4

Spleen

Leukemia Mononuclear

Note: LEUKEMIA MONUC TGLs = 3-2

Testes

Bilateral, Interstit Cell

Adenoma

Note: ADENOMA TGLs = 1-2

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8254

TRT#: 6

SEX: Male

DAY ON TEST: 728

DOSE: 10 PPM 10-3

DISP: Terminal Sacrifice

HISTO: 852524

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Eosinophilic Focus

Mild

Hepatocellular Adenoma

Bile Duct

Hyperplasia

Moderate

Oval Cell

Hyperplasia

Mild

Hypertrophy

Mild

Leukemia Mononuclear

Vacuolization Cytoplasmic

Marked

Note: HEPATOCLR ADEN TGLs = 2-3

Pancreas

Acinus

Adenoma

Note: ADENOMA TGLs = 4-4

Spleen

Leukemia Mononuclear

Testes

Bilateral, Interstit Cell

Adenoma

Note: ADENOMA TGLs = 1-2

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL4-4, NODULE ON RECTUM IS SMALL PANCREATIC ADENOMA

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01  
Test Type: CHRONIC  
Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014  
Time Report Requested: 08:38:07  
First Dose M/F: NA / NA  
Lab: BAT

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ANIMAL ID: 8255	TRT#: 6	SEX: Male	DAY ON TEST: 728
	DOSE: 10 PPM 10-3	DISP: Terminal Sacrifice	HISTO: 852525

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ORGAN AND ACCOUNTABLE SITE STATUS

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NORMAL

Spleen	Stomach - Forestomach	Stomach - Glandular
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OBSERVATIONS

Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Mild
		Hypertrophy	Mild
		Inflammation	Chronic, Mild
		Vacuolization Cytoplasmic	Moderate
Note: HEPATOCLR ADEN TGLs = 2-3			
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA TGLs = 1-2			

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PRIMARY CAUSE OF DEATH

-

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8256

TRT#: 6

SEX: Male

DAY ON TEST: 722

DOSE: 10 PPM 10-3

DISP: Moribund Sacrifice

HISTO: 852526

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Brain	Epididymis
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Nose	Parathyroid Gland	Pituitary Gland	Salivary Glands
Skin	Stomach - Forestomach	Stomach - Glandular	Trachea
Urinary Bladder			

OBSERVATIONS

Adrenal Gland	Cortex	Hypertrophy	Mild
	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
Heart		Degeneration	Chronic, Moderate
Kidney		Nephropathy	Chronic, Marked
Note: NEPHROPATHY	TGLs = 3-1		
Liver		Degeneration	Cystic, Mild
		Eosinophilic Focus	Moderate
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Mild
		Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 2-4		
Lung		Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 5-2,5-3		
Lymph Node	Mandibular	Leukemia Mononuclear	
	Mediastinal	Leukemia Mononuclear	
	Mesenteric	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Moderate
Pancreas	Acinus	Atrophy	Moderate
Preputial Gland		Inflammation	Chronic Active, Mild
Prostate		Inflammation	Chronic Active, Moderate
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-11 ]			

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:07

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8256

**TRT#:** 6

**SEX:** Male

**DAY ON TEST:** 722

**DOSE:** 10 PPM 10-3

**DISP:** Moribund Sacrifice

**HISTO:** 852526

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA TGLs = 4-10			
Thymus		Leukemia Mononuclear	
Thyroid Gland	C Cell	Hyperplasia	Moderate

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**PRIMARY CAUSE OF DEATH**

-

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Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8257

TRT#: 6

SEX: Male

DAY ON TEST: 626

DOSE: 10 PPM 10-3

DISP: Moribund Sacrifice

HISTO: 852527

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Brain	Epididymis
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Nose	Pancreas	Pituitary Gland	Prostate
Salivary Glands	Skin	Stomach - Forestomach	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	

OBSERVATIONS

Adrenal Gland	Cortex	Vacuolization Cytoplasmic	Mild
Bone Marrow	Femoral	Leukemia Mononuclear	
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Mild
Liver		Basophilic Focus	Mild
		Eosinophilic Focus	Moderate
	Bile Duct	Hyperplasia	Moderate
		Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 3-4			
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Parathyroid Gland		Adenoma	
Preputial Gland		Carcinoma	
Note: CARCINOMA TGLs = 1-12			
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 2-11 ]			
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA TGLs = 4-10			
Thyroid Gland	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SAC DUE TO PREPUTIAL TUMOR AND LEUKEMIA

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8258

TRT#: 6

SEX: Male

DAY ON TEST: 706

DOSE: 10 PPM 10-3

DISP: Moribund Sacrifice

HISTO: 852528

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Epididymis
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Lung
Nose	Pancreas	Parathyroid Gland	Preputial Gland
Prostate	Salivary Glands	Skin	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	Urinary Bladder

OBSERVATIONS

Adrenal Gland	Cortex	Vacuolization Cytoplasmic	Minimal
Brain		Compression	
		Hydrocephalus	Moderate
Heart		Degeneration	Chronic, Moderate
Islets, Pancreatic		Hyperplasia	Mild
Kidney		Nephropathy	Chronic, Marked
Liver		Degeneration	Cystic, Mild
		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	
	Bile Duct	Hyperplasia	Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Marked
Note: LEUKEMIA MONUC TGLs = 3-4			
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Moderate
Pituitary Gland	Pars Distalis	Adenoma	
Note: ADENOMA TGLs = 5-7			
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-1 ]			
Testes	Bilateral, Interstit Cell	Adenoma	
Thyroid Gland	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SAC. DUE TO PITUITARY TUMOR AND LEUKEMIA

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)

**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:07

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8258

**TRT#:** 6

**SEX:** Male

**DAY ON TEST:** 706

**DOSE:** 10 PPM 10-3

**DISP:** Moribund Sacrifice

**HISTO:** 852528

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Animal Note: TGL2-10, TESTIS SIZE IS WITHIN NORMAL LIMITS

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\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01  
**Test Type:** CHRONIC  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 08:38:07  
**First Dose M/F:** NA / NA  
**Lab:** BAT

**ANIMAL ID:** 8259

**TRT#:** 6

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** 10 PPM 10-3

**DISP:** Terminal Sacrifice

**HISTO:** 852529

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Bile Duct

Oval Cell

Eosinophilic Focus

Hyperplasia

Hyperplasia

Hypertrophy

Leukemia Mononuclear

Vacuolization Cytoplasmic

Leukemia Mononuclear

Moderate

Moderate

Mild

Mild

Moderate

Spleen

Note: LEUKEMIA MONUC TGLs = 2-3

Testes

Bilateral, Interstit Cell

Adenoma

Note: ADENOMA TGLs = 1-2

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8260

TRT#: 6

SEX: Male

DAY ON TEST: 546

DOSE: 10 PPM 10-3

DISP: Moribund Sacrifice

HISTO: 852530

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Epididymis	Esophagus
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Lung
Nose	Parathyroid Gland	Prostate	Salivary Glands
Skin	Stomach - Forestomach	Stomach - Glandular	Trachea
Urinary Bladder			

MISSING

Thymus

OBSERVATIONS

Adrenal Gland	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
Brain		Compression	
		Hydrocephalus	Mild
Heart		Degeneration	Chronic, Moderate
Kidney		Nephropathy	Chronic, Moderate
Liver		Eosinophilic Focus	Moderate
	Bile Duct	Hyperplasia	Marked
	Oval Cell	Hyperplasia	Mild
		Leukemia Mononuclear	
[ Hyperplasia TGLS = 2-4 ]			
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Minimal
Pituitary Gland	Pars Distalis	Adenoma	
Note: ADENOMA TGLs = 4-7			
Preputial Gland		Inflammation	Chronic Active, Mild
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-11 ]			
Testes	Bilateral, Interstit Cell	Adenoma	
Thyroid Gland	C Cell	Hyperplasia	Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:07

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8260

**TRT#:** 6

**SEX:** Male

**DAY ON TEST:** 546

**DOSE:** 10 PPM 10-3

**DISP:** Moribund Sacrifice

**HISTO:** 852530

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SAC. DUE TO LEUKEMIA AND PITUITARY TUMOR

---

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8261

TRT#: 6

SEX: Male

DAY ON TEST: 729

DOSE: 10 PPM 10-3

DISP: Terminal Sacrifice

HISTO: 852531

**OBSERVATIONS**

Kidney		Nephropathy	Chronic, Marked
Liver		Eosinophilic Focus	Marked
	Bile Duct	Hyperplasia	Moderate
		Hypertrophy	Minimal
		Leukemia Mononuclear	
Pituitary Gland	Pars Distalis	Adenoma	
Note: ADENOMA	TGLs = 1-2		
Preputial Gland	Duct	Dilatation	Moderate
Note: DILATATION	TGLs = 2-3		
Spleen		Leukemia Mononuclear	
Stomach	Forestomach	Ulcer	Marked
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA	TGLs = 5-6		

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL3-4, KIDNEY CYST CUT THROUGH

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8262

TRT#: 6

SEX: Male

DAY ON TEST: 730

DOSE: 10 PPM 10-3

DISP: Terminal Sacrifice

HISTO: 852532

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Stomach - Glandular

OBSERVATIONS

Kidney		Nephropathy	Chronic, Marked
Note: NEPHROPATHY	TGLs = 4-4		
Liver		Basophilic Focus	Mild
		Eosinophilic Focus	Moderate
	Bile Duct	Hyperplasia	Mild
		Hypertrophy	Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Moderate
Lymph Node	Mesenteric	Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 5-5		
Spleen		Leukemia Mononuclear	
Stomach	Forestomach	Acanthosis	Moderate
	Forestomach	Inflammation	Chronic, Minimal
	[ Acanthosis TGLS = 6-6 ]		
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA	TGLs = 1-2		
Tissue NOS			
Note: TGL2-2, TESTIS SIZE WITHIN NORMAL LIMITS			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8263

TRT#: 6

SEX: Male

DAY ON TEST: 577

DOSE: 10 PPM 10-3

DISP: Moribund Sacrifice

HISTO: 852533

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone Marrow	Brain
Epididymis	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lung	Lymph Node - Mesenteric	Lymph Node - Thoracic
Nose	Parathyroid Gland	Salivary Glands	Skin
Spleen	Stomach - Forestomach	Thymus	Trachea

OBSERVATIONS

Bone	Lumbar	Osteosarcoma	
Note: OSTEOSARC TGLs = 4-13			
Heart		Degeneration	Chronic, Moderate
Kidney		Nephropathy	Chronic, Moderate
Liver		Degeneration	Cystic, Mild
		Eosinophilic Focus	Mild
	Bile Duct	Hyperplasia	Mild
		Hypertrophy	Minimal
		Inflammation	Chronic, Multifocal, Mild
		Necrosis	Mild
Note: DEGEN TGLs = 3-4			
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Minimal
Pituitary Gland	Pars Distalis	Cyst	
Preputial Gland		Inflammation	Chronic Active, Mild
Prostate		Inflammation	Chronic Active, Moderate
Stomach	Glandular	Ulcer	Mild
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA TGLs = 5-10			
Thyroid Gland	C Cell	Hyperplasia	Mild
Urinary Bladder		Hemorrhage	Marked
	Mucosa	Hyperplasia	Moderate
Note: HEMORRHAGE TGLs = 1-11			

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)

**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:07

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8263

**TRT#:** 6

**SEX:** Male

**DAY ON TEST:** 577

**DOSE:** 10 PPM 10-3

**DISP:** Moribund Sacrifice

**HISTO:** 852533

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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PRIMARY CAUSE OF DEATH

-

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Animal Note: MORIBUND SAC. DUE TO LUMBAR SPINAL CORD TUMOR

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8264

TRT#: 6

SEX: Male

DAY ON TEST: 644

DOSE: 10 PPM 10-3

DISP: Moribund Sacrifice

HISTO: 852534

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Brain	Esophagus	Heart
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Nose
Parathyroid Gland	Salivary Glands	Skin	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	Urinary Bladder

OBSERVATIONS

Adrenal Gland	Medulla	Pheochromocytoma Benign	
	Cortex	Vacuolization Cytoplasmic	Mild
Bone Marrow	Femoral	Leukemia Mononuclear	
Epididymis		Inflammation	Chronic Active, Mild
Kidney		Nephropathy	Chronic, Mild
Liver		Eosinophilic Focus	Moderate
	Bile Duct	Hepatocellular Adenoma	Multiple
	Oval Cell	Hyperplasia	Mild
		Hyperplasia	Mild
		Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 2-4,2-12,2-13		
Note: HEPATOCLR ADEN	TGLs = 3-4,3-12,3-13		
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
	Mediastinal	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Moderate
Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
Preputial Gland		Inflammation	Chronic Active, Mild
Prostate		Inflammation	Chronic Active, Minimal
		Metaplasia	Squamous, Minimal
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-11 ]			
Testes	Bilateral, Interstit Cell	Adenoma	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:07

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8264

**TRT#:** 6

**SEX:** Male

**DAY ON TEST:** 644

**DOSE:** 10 PPM 10-3

**DISP:** Moribund Sacrifice

**HISTO:** 852534

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

Thyroid Gland

Interstit Cell  
C Cell

Hyperplasia  
Hyperplasia

Mild  
Moderate

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**PRIMARY CAUSE OF DEATH**

-

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Animal Note: MORIBUND SAC. DUE TO LIVER TUMORS AND LEUKEMIA

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\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8265

TRT#: 6

SEX: Male

DAY ON TEST: 730

DOSE: 10 PPM 10-3

DISP: Terminal Sacrifice

HISTO: 852535

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Kidney

Nephropathy

Chronic, Marked

Note: NEPHROPATHY TGLs = 3-4

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Moderate

Bile Duct

Hyperplasia

Moderate

Oval Cell

Hyperplasia

Minimal

Hypertrophy

Mild

Leukemia Mononuclear

Vacuolization Cytoplasmic

Mild

Note: LEUKEMIA MONUC TGLs = 4-5

Skin

Basosquamous Tumor Benign

Note: BASOSQU TM BGN TGLs = 6-6

Spleen

Leukemia Mononuclear

Note: LEUKEMIA MONUC TGLs = 2-3

Testes

Bilateral, Interstit Cell

Adenoma

Note: ADENOMA TGLs = 1-2

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8266

TRT#: 6

SEX: Male

DAY ON TEST: 583

DOSE: 10 PPM 10-3

DISP: Moribund Sacrifice

HISTO: 852536

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Brain
Epididymis	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Nose	Pancreas	Prostate
Salivary Glands	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder		

MISSING

Parathyroid Gland

OBSERVATIONS

Bone Marrow	Femoral	Leukemia Mononuclear	
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Moderate
Liver		Degeneration	Cystic, Mild
		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Marked
	Oval Cell	Hyperplasia	Mild
		Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 3-4		
Note: HEPATOCLR ADEN	TGLs = 4-4		
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
	Mediastinal	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Mild
Pituitary Gland	Pars Distalis	Adenoma	
Preputial Gland		Inflammation	Chronic Active, Mild
Skin	Subcut Tiss	Fibrosarcoma	
Note: FIBROSARC	TGLs = 1-11		
Spleen		Leukemia Mononuclear	
	[ Leukemia Mononuclear TGLS = 2-12 ]		

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:07

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8266

**TRT#:** 6

**SEX:** Male

**DAY ON TEST:** 583

**DOSE:** 10 PPM 10-3

**DISP:** Moribund Sacrifice

**HISTO:** 852536

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

Testes

Interstit Cell

Adenoma

Thyroid Gland

C Cell

Hyperplasia

Mild

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**PRIMARY CAUSE OF DEATH**

-

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Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA AND SKIN TUMOR

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8267

TRT#: 6

SEX: Male

DAY ON TEST: 689

DOSE: 10 PPM 10-3

DISP: Natural Death

HISTO: 852537

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Intestine Small - Duodenum	Islets, Pancreatic
Nose	Pancreas	Parathyroid Gland	Pituitary Gland
Skin	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder		

MISSING

Lymph Node	Salivary Glands		
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AUTO PRECLUDES DIAG.

Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Ileum
Intestine Small - Jejunum			

OBSERVATIONS

Adrenal Gland	Medulla	Pheochromocytoma Malignant	
Note: [ PHEOCHROM MAL ] TGLs = 4-12			
Heart		Degeneration	Chronic, Moderate
Kidney		Nephropathy	Chronic, Marked
Liver		Eosinophilic Focus	Mild
	Bile Duct	Hyperplasia	Marked
		Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 3-4			
Lung		Leukemia Mononuclear	
Lymph Node			
Note: MANDIBULAR LN MISSING			
Preputial Gland		Inflammation	Chronic Active, Mild
Prostate		Inflammation	Chronic Active, Mild
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 2-11 ]			
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA TGLs = 1-10			
Thyroid Gland	C Cell	Hyperplasia	Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:07

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8267

**TRT#:** 6

**SEX:** Male

**DAY ON TEST:** 689

**DOSE:** 10 PPM 10-3

**DISP:** Natural Death

**HISTO:** 852537

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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PRIMARY CAUSE OF DEATH

-

Animal Note: CAUSE OF DEATH, LEUKEMIA AND ADRENAL TUMOR

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8268

TRT#: 6

SEX: Male

DAY ON TEST: 731

DOSE: 10 PPM 10-3

DISP: Terminal Sacrifice

HISTO: 852538

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Minimal

Eosinophilic Focus

Mild

Bile Duct

Hyperplasia

Mild

Hypertrophy

Mild

Leukemia Mononuclear

Vacuolization Cytoplasmic

Moderate

Leukemia Mononuclear

Spleen

Note: LEUKEMIA MONUC TGLs = 3-3

Testes

Bilateral, Interstit Cell

Adenoma

Note: ADENOMA TGLs = 1-2

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8269

TRT#: 6

SEX: Male

DAY ON TEST: 731

DOSE: 10 PPM 10-3

DISP: Terminal Sacrifice

HISTO: 852539

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Pituitary Gland

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Degeneration

Cystic, Mild

Eosinophilic Focus

Marked

Hepatocellular Adenoma

Bile Duct

Hyperplasia

Moderate

Oval Cell

Hyperplasia

Mild

Leukemia Mononuclear

Vacuolization Cytoplasmic

Mild

Note: LEUKEMIA MONUC TGLs = 5-2

Note: [ HEPATOCLR ADEN ] TGLs = 6-5

Spleen

Leukemia Mononuclear

Note: LEUKEMIA MONUC TGLs = 1-3

Testes

Bilateral, Interstit Cell

Adenoma

Note: ADENOMA TGLs = 3-6

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL4-6, TESTIS SIZE WITHIN NORMAL LIMITS

Animal Note: TGL2-4, PITUITARY WITHIN NORMAL LIMITS, NO FOCUS ON MICRO

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8270

TRT#: 6

SEX: Male

DAY ON TEST: 731

DOSE: 10 PPM 10-3

DISP: Terminal Sacrifice

HISTO: 852540

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Minimal

Eosinophilic Focus

Marked

Bile Duct

Hyperplasia

Moderate

Oval Cell

Hyperplasia

Mild

Hypertrophy

Mild

Leukemia Mononuclear

Vacuolization Cytoplasmic

Marked

Spleen

Leukemia Mononuclear

Testes

Bilateral, Interstit Cell

Adenoma

[ Adenoma TGLS = 2-3,3-3 ]

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8271

TRT#: 6

SEX: Male

DAY ON TEST: 667

DOSE: 10 PPM 10-3

DISP: Natural Death

HISTO: 852541

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Epididymis	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lung	Lymph Node	Nose
Parathyroid Gland	Prostate	Salivary Glands	Skin
Stomach - Forestomach	Stomach - Glandular	Trachea	Urinary Bladder

OBSERVATIONS

Brain		Compression Hydrocephalus	Mild
Harderian Gland			
Note: CAUSE OF DEATH, PITUITARY LESIONS AND LIVER LESIONS			
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Moderate
Liver		Basophilic Focus	Mild
		Eosinophilic Focus	Moderate
	Bile Duct	Hyperplasia	Marked
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Marked
Note: LEUKEMIA MONUC TGLs = 1-4			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Pancreas	Acinus	Atrophy	Mild
Pituitary Gland	Pars Distalis	Adenoma	
	Pars Distalis	Hemorrhage	Marked
Note: HEMORRHAGE TGLs = 3-7			
Preputial Gland		Inflammation	Chronic Active, Mild
Spleen		Leukemia Mononuclear	
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA TGLs = 4-10			
Thymus		Leukemia Mononuclear	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:07

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8271

**TRT#:** 6

**SEX:** Male

**DAY ON TEST:** 667

**DOSE:** 10 PPM 10-3

**DISP:** Natural Death

**HISTO:** 852541

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**ORGAN AND ACCOUNTABLE SITE STATUS**

Thyroid Gland

C Cell

Adenoma

C Cell

Hyperplasia

Mild

Note: ADENOMA TGLs = 5-7

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PRIMARY CAUSE OF DEATH

-

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Animal Note: CAUSE OF DEATH, PITUITARY LESIONS AND LIVER LESIONS

---

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8272

TRT#: 6

SEX: Male

DAY ON TEST: 706

DOSE: 10 PPM 10-3

DISP: Moribund Sacrifice

HISTO: 852542

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lung	Lymph Node - Mesenteric	Lymph Node - Thoracic
Nose	Parathyroid Gland	Pituitary Gland	Prostate
Salivary Glands	Spleen	Stomach - Glandular	Thymus
Trachea	Urinary Bladder		

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Cortex	Vacuolization Cytoplasmic	Mild
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Marked
Liver		Basophilic Focus	Minimal
		Eosinophilic Focus	Moderate
	Bile Duct	Hyperplasia	Mild
		Hypertrophy	Minimal
		Inflammation	Chronic, Multifocal, Minimal
		Vacuolization Cytoplasmic	Mild
Pancreas	Acinus	Atrophy	Moderate
Preputial Gland		Inflammation	Chronic Active, Mild
Skin	Subcut Tiss	Fibroma	
Note: FIBROMA	TGLs = 1-11		
Stomach	Forestomach	Acanthosis	Moderate
	Forestomach	Inflammation	Chronic Active, Moderate
	Forestomach	Ulcer	Moderate
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA	TGLs = 4-10		
Thyroid Gland	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL1-11, MASS IN SUBCUTIS IS NOT MAMMARY GLAND

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)

**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:07

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8272

**TRT#:** 6

**SEX:** Male

**DAY ON TEST:** 706

**DOSE:** 10 PPM 10-3

**DISP:** Moribund Sacrifice

**HISTO:** 852542

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Animal Note: MORIBUND SAC, DUE TO SKIN TUMOR AND LEUKEMIA

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8273

TRT#: 6

SEX: Male

DAY ON TEST: 710

DOSE: 10 PPM 10-3

DISP: Moribund Sacrifice

HISTO: 852543

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Brain	Epididymis
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Lung	Nose	Parathyroid Gland	Salivary Glands
Skin	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder		

OBSERVATIONS

Adrenal Gland	Medulla	Hyperplasia	Mild
	Cortex	Hypertrophy	Mild
	Cortex	Vacuolization Cytoplasmic	Moderate
Heart		Degeneration	Chronic, Mild
		Thrombosis	
Kidney		Nephropathy	Chronic, Moderate
Liver		Eosinophilic Focus	Minimal
	Bile Duct	Hyperplasia	Moderate
		Vacuolization Cytoplasmic	Marked
Lymph Node	Mandibular	Lymphoma Malignant Lymphocytic	
	Mediastinal	Lymphoma Malignant Lymphocytic	
	Pancreatic	Lymphoma Malignant Lymphocytic	
Pancreas	Acinus	Atrophy	Mild
Pituitary Gland	Pars Distalis	Hyperplasia	Moderate
Preputial Gland		Inflammation	Chronic Active, Mild
Prostate		Inflammation	Chronic Active, Marked
		Metaplasia	Squamous, Moderate
Spleen		Lymphoma Malignant Lymphocytic	
Testes	Seminif Tub	Atrophy	Marked
	Seminif Tub	Mineralization	Moderate
Note: ATROPHY	TGLs = 2-10		
Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:07

**First Dose M/F:** NA / NA

**Lab:** BAT

---

**ANIMAL ID:** 8273

**TRT#:** 6

**SEX:** Male

**DAY ON TEST:** 710

**DOSE:** 10 PPM 10-3

**DISP:** Moribund Sacrifice

**HISTO:** 852543

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

Animal Note: TGL3-4, LIVER SURFACE IS ROUGH BUT THERE ARE NO NODULES

Animal Note: TGL1-6, URINARY BLADDER WITHIN NORMAL LIMITS

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8274

TRT#: 6

SEX: Male

DAY ON TEST: 654

DOSE: 10 PPM 10-3

DISP: Moribund Sacrifice

HISTO: 852544

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Epididymis
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Lung	Nose	Pancreas	Parathyroid Gland
Prostate	Salivary Glands	Skin	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
Brain		Compression	
		Hydrocephalus	Moderate
Heart		Degeneration	Chronic, Moderate
Kidney		Nephropathy	Chronic, Marked
Liver		Eosinophilic Focus	Moderate
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Note: LEUKEMIA MONUC TGLs = 2-4			
Lymph Node	Mandibular	Hyperplasia	Lymphoid, Moderate
Mammary Gland		Hyperplasia	Cystic, Mild
Pituitary Gland	Pars Distalis	Adenoma	
Note: ADENOMA TGLs = 3-7			
Preputial Gland		Carcinoma	
		Inflammation	Chronic Active, Moderate
Note: CARCINOMA TGLs = 1-11			
Spleen		Leukemia Mononuclear	
Stomach	Forestomach	Acanthosis	Moderate
	Forestomach	Inflammation	Chronic Active, Moderate
	Forestomach	Ulcer	Moderate
Testes	Bilateral, Interstit Cell	Adenoma	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:07

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8274

**TRT#:** 6

**SEX:** Male

**DAY ON TEST:** 654

**DOSE:** 10 PPM 10-3

**DISP:** Moribund Sacrifice

**HISTO:** 852544

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Thyroid Gland

C Cell

Hyperplasia

Moderate

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PRIMARY CAUSE OF DEATH

-

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Animal Note: MORIBUND SACRIFICE DUE TO PREPUTIAL GLAND TUMOR

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\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8275

TRT#: 6

SEX: Male

DAY ON TEST: 734

DOSE: 10 PPM 10-3

DISP: Terminal Sacrifice

HISTO: 852545

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

**OBSERVATIONS**

Liver		Basophilic Focus	Minimal
		Eosinophilic Focus	Moderate
	Bile Duct	Hyperplasia	Moderate
		Hypertrophy	Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Moderate
Spleen		Leukemia Mononuclear	
Stomach	Glandular	Mineralization	Mild
Testes	Bilateral, Interstit Cell	Adenoma	
	[ Adenoma TGLS = 1-3 ]		

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01  
**Test Type:** CHRONIC  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 08:38:07  
**First Dose M/F:** NA / NA  
**Lab:** BAT

**ANIMAL ID:** 8276

**TRT#:** 6

**SEX:** Male

**DAY ON TEST:** 734

**DOSE:** 10 PPM 10-3

**DISP:** Terminal Sacrifice

**HISTO:** 852546

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Minimal

Eosinophilic Focus

Moderate

Bile Duct

Hyperplasia

Marked

Oval Cell

Hyperplasia

Minimal

Hypertrophy

Moderate

Vacuolization Cytoplasmic

Moderate

Testes

Bilateral, Interstit Cell

Adenoma

[ Adenoma TGLS = 1-2 ]

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01  
**Test Type:** CHRONIC  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 08:38:07  
**First Dose M/F:** NA / NA  
**Lab:** BAT

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<b>ANIMAL ID:</b> 8277	<b>TRT#:</b> 6	<b>SEX:</b> Male	<b>DAY ON TEST:</b> 734
	<b>DOSE:</b> 10 PPM 10-3	<b>DISP:</b> Terminal Sacrifice	<b>HISTO:</b> 852547

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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**NORMAL**

Spleen	Stomach - Forestomach	Stomach - Glandular
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**OBSERVATIONS**

Liver		Eosinophilic Focus	Moderate
	Bile Duct	Hyperplasia	Mild
		Hypertrophy	Mild
		Vacuolization Cytoplasmic	Moderate
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA	TGLs = 1-2		

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**PRIMARY CAUSE OF DEATH**

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8278

TRT#: 6

SEX: Male

DAY ON TEST: 661

DOSE: 10 PPM 10-3

DISP: Moribund Sacrifice

HISTO: 852548

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lung	Nose	Parathyroid Gland
Pituitary Gland	Prostate	Salivary Glands	Skin
Stomach - Glandular	Thymus	Trachea	Urinary Bladder

OBSERVATIONS

Adrenal Gland	Cortex	Vacuolization Cytoplasmic	Mild
Heart		Degeneration	Chronic, Moderate
Kidney		Nephropathy	Chronic, Marked
Note: NEPHROPATHY TGLs = 3-1			
Liver		Basophilic Focus	Mild
		Clear Cell Focus	Mild
		Eosinophilic Focus	Minimal
	Bile Duct	Hyperplasia	Mild
		Hypertrophy	Minimal
		Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 1-4			
Note: EOSIN FOCUS TGLs = 2-4			
Lymph Node	Mandibular	Hyperplasia	Lymphoid, Marked
Pancreas	Acinus	Atrophy	Mild
Preputial Gland		Inflammation	Chronic Active, Moderate
Spleen		Leukemia Mononuclear	
Stomach	Forestomach	Acanthosis	Moderate
	Forestomach	Inflammation	Chronic Active, Moderate
	Forestomach	Ulcer	Moderate
Note: INFLAMMATION TGLs = 4-11			
Testes	Bilateral, Interstit Cell	Adenoma	
Thyroid Gland	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:07

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8278

**TRT#:** 6

**SEX:** Male

**DAY ON TEST:** 661

**DOSE:** 10 PPM 10-3

**DISP:** Moribund Sacrifice

**HISTO:** 852548

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Animal Note: MORIBUND SAC. DUE TO NEPHROPATHY AND STOMACH LESIONS

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\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01  
**Test Type:** CHRONIC  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 08:38:07  
**First Dose M/F:** NA / NA  
**Lab:** BAT

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<b>ANIMAL ID:</b> 8279	<b>TRT#:</b> 6	<b>SEX:</b> Male	<b>DAY ON TEST:</b> 735
	<b>DOSE:</b> 10 PPM 10-3	<b>DISP:</b> Terminal Sacrifice	<b>HISTO:</b> 852549

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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**NORMAL**

Spleen	Stomach - Forestomach	Stomach - Glandular
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**OBSERVATIONS**

Liver		Eosinophilic Focus	Moderate
	Bile Duct	Hyperplasia	Marked
		Hypertrophy	Mild
		Vacuolization Cytoplasmic	Mild
Testes	Bilateral, Interstit Cell	Adenoma	
[ Adenoma TGLS = 1-2,2-2 ]			

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**PRIMARY CAUSE OF DEATH**

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8280

TRT#: 6

SEX: Male

DAY ON TEST: 735

DOSE: 10 PPM 10-3

DISP: Terminal Sacrifice

HISTO: 852550

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Kidney

Nephropathy

Chronic, Marked

Note: NEPHROPATHY TGLs = 1-2

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Marked

Bile Duct

Hyperplasia

Mild

Oval Cell

Hyperplasia

Minimal

Hypertrophy

Mild

Vacuolization Cytoplasmic

Moderate

Testes

Bilateral, Interstit Cell

Adenoma

Note: ADENOMA TGLs = 4-5,5-5

**PRIMARY CAUSE OF DEATH**

-

Animal Note: TGL3-4, NO FOCUS ON PITUITARY, NCL

Animal Note: TGL6-5, TESTIS SIZE WITHIN NORMAL LIMITS

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8281

TRT#: 6

SEX: Male

DAY ON TEST: 397

DOSE: 10 PPM 10-3

DISP: Natural Death

HISTO: 852551

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Epididymis	Esophagus	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Jejunum	Parathyroid Gland	Pituitary Gland
Preputial Gland	Prostate	Salivary Glands	Seminal Vesicle
Skin	Stomach - Forestomach	Stomach - Glandular	Testes
Trachea			

MISSING

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Lymph Node
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AUTO PRECLUDES DIAG.

Bone Marrow	Intestine Large - Cecum	Intestine Small - Duodenum	Intestine Small - Ileum
Islets, Pancreatic	Nose	Pancreas	Thyroid Gland
Urinary Bladder			

OBSERVATIONS

Brain	Hemorrhage	Moderate
Heart	Degeneration	Chronic, Moderate
Kidney	Leukemia Mononuclear	
Liver	Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 1-4		
Lung	Leukemia Mononuclear	
Lymph Node		
Note: MANDIBULAR LN MISSING		
Mammary Gland	Hyperplasia	Cystic, Mild
Spleen	Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 2-11 ]		
Thymus	Leukemia Mononuclear	

PRIMARY CAUSE OF DEATH

-

Animal Note: CAUSE OF DEATH LEUKEMIA MONONUCLEAR

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8282

TRT#: 6

SEX: Male

DAY ON TEST: 735

DOSE: 10 PPM 10-3

DISP: Terminal Sacrifice

HISTO: 852552

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Stomach - Forestomach

Stomach - Glandular

OBSERVATIONS

Eye

Retina

Atrophy

Marked

Lens

Cataract

Marked

Note: ATROPHY TGLs = 1-2

Note: CATARACT TGLs = 1-2

Liver

Eosinophilic Focus

Marked

Hepatocellular Adenoma

Multiple

Hepatocellular Carcinoma

Bile Duct

Hyperplasia

Moderate

Oval Cell

Hyperplasia

Mild

Hypertrophy

Mild

Leukemia Mononuclear

Vacuolization Cytoplasmic

Moderate

Note: HEPATOCLR CARC TGLs = 4-5

Note: HEPATOCLR ADEN TGLs = 5-5

Spleen

Leukemia Mononuclear

Note: LEUKEMIA MONUC TGLs = 2-3

Testes

Bilateral, Interstit Cell

Adenoma

Note: ADENOMA TGLs = 3-4

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8283

TRT#: 6

SEX: Male

DAY ON TEST: 547

DOSE: 10 PPM 10-3

DISP: Moribund Sacrifice

HISTO: 852553

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Heart	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Jejunum	Islets, Pancreatic
Lung	Nose	Pancreas	Parathyroid Gland
Salivary Glands	Skin	Spleen	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	

OBSERVATIONS

Adrenal Gland	Cortex	Vacuolization Cytoplasmic	Mild
Intestine Small	Ileum	Parasite Metazoan	
Kidney		Nephropathy	Chronic, Mild
Liver		Eosinophilic Focus	Mild
	Bile Duct	Hyperplasia	Mild
		Hypertrophy	Mild
		Inflammation	Chronic, Multifocal, Mild
		Vacuolization Cytoplasmic	Mild
Lymph Node	Mandibular	Hyperplasia	Lymphoid, Moderate
Mammary Gland		Hyperplasia	Cystic, Mild
Pituitary Gland	Pars Distalis	Adenoma	
Note: ADENOMA	TGLs = 2-11		
Preputial Gland		Inflammation	Chronic Active, Marked
Prostate		Inflammation	Chronic Active, Mild
Stomach	Forestomach	Acanthosis	Moderate
	Forestomach	Inflammation	Chronic Active, Moderate
Testes	Interstitial Cell	Adenoma	
	Interstitial Cell	Hyperplasia	Mild
Thyroid Gland	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO PITUITARY TUMOR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8284

TRT#: 6

SEX: Male

DAY ON TEST: 694

DOSE: 10 PPM 10-3

DISP: Moribund Sacrifice

HISTO: 852554

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Epididymis	Esophagus	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Lung	Nose
Prostate	Salivary Glands	Skin	Stomach - Glandular
Trachea	Urinary Bladder		

MISSING

Thymus

OBSERVATIONS

Eye	Retina	Atrophy	Marked
	Lens	Cataract	Moderate
	Cornea	Inflammation	Chronic Active, Moderate
Note: ATROPHY	TGLs = 1-13		
Note: CATARACT	TGLs = 1-13		
Note: INFLAMMATION	TGLs = 1-13		
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Marked
Note: NEPHROPATHY	TGLs = 3-11		
Liver		Basophilic Focus	Minimal
		Eosinophilic Focus	Mild
	Bile Duct	Hyperplasia	Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Moderate
Lymph Node	Mandibular	Leukemia Mononuclear	
Pancreas	Acinus	Atrophy	Minimal
Parathyroid Gland		Hyperplasia	Moderate
Pituitary Gland	Pars Distalis	Adenoma	
Preputial Gland		Inflammation	Chronic Active, Mild
Spleen		Leukemia Mononuclear	
Stomach	Forestomach	Acanthosis	Moderate

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:07

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8284

**TRT#:** 6

**SEX:** Male

**DAY ON TEST:** 694

**DOSE:** 10 PPM 10-3

**DISP:** Moribund Sacrifice

**HISTO:** 852554

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Testes

Bilateral, Interstit Cell

Adenoma

Note: ADENOMA

TGLs = 2-12

Thyroid Gland

C Cell

Hyperplasia

Moderate

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**PRIMARY CAUSE OF DEATH**

-

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Animal Note: MORIBUND SAC. DUE TO LEUKEMIA AND NEPHROPATHY

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8285

TRT#: 6

SEX: Male

DAY ON TEST: 531

DOSE: 10 PPM 10-3

DISP: Moribund Sacrifice

HISTO: 852555

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Brain	Esophagus	Heart
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Nose
Parathyroid Gland	Pituitary Gland	Prostate	Salivary Glands
Skin	Stomach - Glandular	Thymus	Trachea
Urinary Bladder			

OBSERVATIONS

Adrenal Gland	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
	Cortex	Vacuolization Cytoplasmic	Moderate
Bone Marrow	Femoral	Leukemia Mononuclear	
Epididymis		Inflammation	Chronic Active, Mild
Kidney		Nephropathy	Chronic, Moderate
Liver		Eosinophilic Focus	Marked
	Bile Duct	Hyperplasia	Moderate
		Hypertrophy	Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Moderate
Note: LEUKEMIA MONUC TGLs = 3-4,3-12			
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Moderate
Pancreas	Acinus	Atrophy	Marked
Preputial Gland		Inflammation	Chronic Active, Moderate
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-11 ]			
Stomach	Forestomach	Acanthosis	Mild
	Forestomach	Erosion	Mild
Testes	Bilateral, Interstit Cell	Adenoma	
Thyroid Gland	C Cell	Adenoma	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:07

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8285

**TRT#:** 6

**SEX:** Male

**DAY ON TEST:** 531

**DOSE:** 10 PPM 10-3

**DISP:** Moribund Sacrifice

**HISTO:** 852555

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

Animal Note: TGL2-10, TESTIS SIZE WITHIN NORMAL LIMITS

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8286

TRT#: 6

SEX: Male

DAY ON TEST: 639

DOSE: 10 PPM 10-3

DISP: Moribund Sacrifice

HISTO: 852556

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone Marrow	Brain	Esophagus
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Nose
Parathyroid Gland	Prostate	Salivary Glands	Skin
Stomach - Forestomach	Stomach - Glandular	Trachea	Urinary Bladder

OBSERVATIONS

Adrenal Gland	Cortex	Vacuolization Cytoplasmic	Minimal
Bone	Femur	Hemangiosarcoma	
Note: [ HEMANGIOSARC ] TGLs = 1-11			
Epididymis	Serosa	Mesothelioma Benign	
Heart		Degeneration	Chronic, Moderate
Kidney		Nephropathy	Chronic, Moderate
Liver		Eosinophilic Focus	Mild
	Bile Duct	Hepatocellular Adenoma	
		Hyperplasia	Moderate
		Hypertrophy	Minimal
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Note: LEUKEMIA MONUC TGLs = 3-4			
Note: HEPATOCLR ADEN TGLs = 4-13			
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
	Mediastinal	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Mild
Pituitary Gland	Pars Distalis	Hyperplasia	Moderate
Preputial Gland		Inflammation	Chronic Active, Mild
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 2-12 ]			
Testes	Bilateral, Interstit Cell	Adenoma	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:07

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8286

**TRT#:** 6

**SEX:** Male

**DAY ON TEST:** 639

**DOSE:** 10 PPM 10-3

**DISP:** Moribund Sacrifice

**HISTO:** 852556

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Thymus	Tunic	Mesothelioma Malignant	
Thyroid Gland	C Cell	Leukemia Mononuclear	
	C Cell	Adenoma	
		Hyperplasia	Mild

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**PRIMARY CAUSE OF DEATH**

-

Animal Note: MORIBUND SAC. DUE TO BONE TUMOR AND LEUKEMIA

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\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8287

TRT#: 6

SEX: Male

DAY ON TEST: 699

DOSE: 10 PPM 10-3

DISP: Moribund Sacrifice

HISTO: 852557

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Lung	Lymph Node	Nose	Pancreas
Parathyroid Gland	Prostate	Salivary Glands	Skin
Spleen	Stomach - Glandular	Trachea	Urinary Bladder

MISSING

Thymus

OBSERVATIONS

Adrenal Gland	Cortex	Atrophy	Moderate
Epididymis	Serosa	Mesothelioma Malignant	
Note: MESOTHELIO MAL TGLs = 5-12			
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Marked
Liver		Basophilic Focus	Moderate
		Eosinophilic Focus	Mild
		Hepatocellular Adenoma	
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Moderate
		Hypertrophy	Mild
		Inflammation	Chronic, Multifocal, Moderate
		Vacuolization Cytoplasmic	Mild
Note: [ HEPATOCLR ADEN ] TGLs = 3-13			
Mammary Gland		Hyperplasia	Cystic, Mild
Mesentery		Mesothelioma Malignant	
Note: MESOTHELIO MAL TGLs = 6-11			
Pituitary Gland	Pars Distalis	Adenoma	
Preputial Gland		Inflammation	Chronic Active, Mild
Stomach	Forestomach	Acanthosis	Moderate
	Forestomach	Inflammation	Chronic Active, Moderate

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:07

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8287

**TRT#:** 6

**SEX:** Male

**DAY ON TEST:** 699

**DOSE:** 10 PPM 10-3

**DISP:** Moribund Sacrifice

**HISTO:** 852557

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

Testes

Bilateral, Interstit Cell  
Tunic

Adenoma  
Mesothelioma Malignant

Note: MESOTHELIO MAL TGLs = 1-12

Note: ADENOMA TGLs = 2-12

Thyroid Gland

C Cell

Hyperplasia

Moderate

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**PRIMARY CAUSE OF DEATH**

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Animal Note: MORIBUND SAC. DUE TO MALIGNANT MESOTHELIOOMA AND LEUKEMIA

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8288

TRT#: 6

SEX: Male

DAY ON TEST: 736

DOSE: 10 PPM 10-3

DISP: Terminal Sacrifice

HISTO: 852558

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Kidney

Cortex

Cyst

Nephropathy

Chronic, Marked

[ Nephropathy TGLS = 2-3 ]

Liver

Basophilic Focus

Minimal

Eosinophilic Focus

Mild

Bile Duct

Hyperplasia

Mild

Hypertrophy

Mild

Vacuolization Cytoplasmic

Mild

Pituitary Gland

Pars Distalis

Adenoma

Note: ADENOMA TGLs = 3-4

Testes

Bilateral, Interstit Cell

Adenoma

[ Adenoma TGLS = 1-2 ]

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8289

TRT#: 6

SEX: Male

DAY ON TEST: 623

DOSE: 10 PPM 10-3

DISP: Moribund Sacrifice

HISTO: 852559

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Brain	Epididymis
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Nose	Pancreas	Parathyroid Gland	Pituitary Gland
Salivary Glands	Skin	Stomach - Forestomach	Stomach - Glandular
Trachea	Urinary Bladder		

OBSERVATIONS

Adrenal Gland	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
	Medulla	Pheochromocytoma Benign	
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Moderate
Liver		Degeneration	Cystic, Mild
		Eosinophilic Focus	Moderate
	Bile Duct	Hepatocellular Adenoma	
	Oval Cell	Hyperplasia	Moderate
		Hyperplasia	Moderate
		Hypertrophy	Mild
		Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 2-4,2-12		
Note: HEPATOCLR ADEN	TGLs = 3-12		
Note: [ HYPERTROPHY ]	TGLs = 4-4, 4-12		
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Mild
Preputial Gland		Inflammation	Chronic Active, Mild
Prostate		Inflammation	Chronic Active, Minimal
		Metaplasia	Squamous, Minimal
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-11 ]			

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:07

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8289

**TRT#:** 6

**SEX:** Male

**DAY ON TEST:** 623

**DOSE:** 10 PPM 10-3

**DISP:** Moribund Sacrifice

**HISTO:** 852559

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA TGLs = 5-10			
Thymus		Leukemia Mononuclear	
Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Mild

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**PRIMARY CAUSE OF DEATH**

-

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8290

TRT#: 6

SEX: Male

DAY ON TEST: 666

DOSE: 10 PPM 10-3

DISP: Moribund Sacrifice

HISTO: 852560

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Brain	Epididymis	Esophagus
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Nose
Parathyroid Gland	Pituitary Gland	Prostate	Salivary Glands
Skin	Stomach - Forestomach	Stomach - Glandular	Trachea
Urinary Bladder			

MISSING

Thymus

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Medulla	Hyperplasia	Mild
	Cortex	Vacuolization Cytoplasmic	Mild
Bone Marrow	Femoral	Leukemia Mononuclear	
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Moderate
Liver		Eosinophilic Focus	Moderate
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Mild
		Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 3-4		
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
	Mediastinal	Leukemia Mononuclear	
	Renal	Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 4-12		
Pancreas	Acinus	Atrophy	Mild
Preputial Gland		Inflammation	Chronic Active, Mild
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-11 ]			
Testes	Bilateral, Interstit Cell	Adenoma	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:07

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8290

**TRT#:** 6

**SEX:** Male

**DAY ON TEST:** 666

**DOSE:** 10 PPM 10-3

**DISP:** Moribund Sacrifice

**HISTO:** 852560

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

Thyroid Gland

Follicle

Cyst

C Cell

Hyperplasia

Moderate

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**PRIMARY CAUSE OF DEATH**

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**Animal Note:** MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8291

TRT#: 6

SEX: Male

DAY ON TEST: 691

DOSE: 10 PPM 10-3

DISP: Moribund Sacrifice

HISTO: 852561

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Bone	Brain	Epididymis
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Nose	Parathyroid Gland	Salivary Glands	Skin
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder			

OBSERVATIONS

Adrenal Gland	Medulla	Hyperplasia	Mild
	Medulla	Pheochromocytoma Benign	
Bone Marrow	Femoral	Myelofibrosis	Mild
Heart		Degeneration	Chronic, Moderate
Kidney		Nephropathy	Chronic, Marked
Note: NEPHROPATHY TGLs = 3-1			
Liver		Eosinophilic Focus	Moderate
	Bile Duct	Hyperplasia	Mild
	Oval Cell	Hyperplasia	Mild
		Hypertrophy	Mild
		Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 2-4			
Lung	Alveolar Epith	Hyperplasia	Mild
		Leukemia Mononuclear	
Note: HYPERPLASIA TGLs = 4-3			
Lymph Node	Mandibular	Leukemia Mononuclear	
	Mediastinal	Leukemia Mononuclear	
Pancreas	Acinus	Atrophy	Minimal
Pituitary Gland	Pars Distalis	Adenoma	
Preputial Gland		Inflammation	Chronic Active, Mild
Prostate		Inflammation	Chronic Active, Mild
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-11 ]			

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:07

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8291

**TRT#:** 6

**SEX:** Male

**DAY ON TEST:** 691

**DOSE:** 10 PPM 10-3

**DISP:** Moribund Sacrifice

**HISTO:** 852561

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Testes	Interstit Cell	Adenoma	
	Interstit Cell	Hyperplasia	Minimal
Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Mild

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**PRIMARY CAUSE OF DEATH**

-

Animal Note: MORIBUND SAC. DUE TO LEUKEMIA AND NEPHROPATHY

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8292

TRT#: 6

SEX: Male

DAY ON TEST: 731

DOSE: 10 PPM 10-3

DISP: Moribund Sacrifice

HISTO: 852562

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Heart	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Nose	Pancreas	Pituitary Gland
Salivary Glands	Skin	Stomach - Forestomach	Stomach - Glandular
Trachea	Urinary Bladder		

OBSERVATIONS

Adrenal Gland	Cortex	Degeneration	Cystic, Mild
Intestine Small	Duodenum	Ulcer	Mild
Note: ULCER TGLs = 4-13			
Kidney		Nephropathy	Chronic, Moderate
Liver		Eosinophilic Focus	Marked
	Bile Duct	Hepatocellular Adenoma	
	Oval Cell	Hyperplasia	Moderate
		Hyperplasia	Moderate
		Leukemia Mononuclear	
Note: HEPATOCLR ADEN TGLs = 2-12			
Lymph Node	Mandibular	Leukemia Mononuclear	
	Mediastinal	Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 3-2			
Parathyroid Gland		Adenoma	
Preputial Gland		Inflammation	Chronic Active, Moderate
Prostate		Inflammation	Chronic Active, Minimal
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLs = 5-11 ]			
Testes	Bilateral, Interstit Cell	Adenoma	
Thymus		Depletion Lymphoid	Marked
Thyroid Gland	Bilateral, Follicular Cel	Adenoma	
	C Cell	Adenoma	
	C Cell	Hyperplasia	Moderate

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)

**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:07

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8292

**TRT#:** 6

**SEX:** Male

**DAY ON TEST:** 731

**DOSE:** 10 PPM 10-3

**DISP:** Moribund Sacrifice

**HISTO:** 852562

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SAC. DUE TO LEUKEMIA MONONUCLEAR AND LIVER CHANGES

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8293

TRT#: 6

SEX: Male

DAY ON TEST: 594

DOSE: 10 PPM 10-3

DISP: Moribund Sacrifice

HISTO: 852563

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Brain	Epididymis
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Nose	Parathyroid Gland	Pituitary Gland	Preputial Gland
Prostate	Salivary Glands	Skin	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	Urinary Bladder

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Cortex	Vacuolization Cytoplasmic	Mild
Bone Marrow	Femoral	Leukemia Mononuclear	
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Moderate
Liver		Eosinophilic Focus	Moderate
	Bile Duct	Hyperplasia	Moderate
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Note: LEUKEMIA MONUC TGLs = 2-4,3-4			
Lung		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 4-2,4-3 ]			
Lymph Node	Mandibular	Leukemia Mononuclear	
	Mediastinal	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Mild
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-11 ]			
Testes	Bilateral, Interstit Cell	Adenoma	
	Tunic	Mesothelioma Malignant	
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)

**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:07

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8293

**TRT#:** 6

**SEX:** Male

**DAY ON TEST:** 594

**DOSE:** 10 PPM 10-3

**DISP:** Moribund Sacrifice

**HISTO:** 852563

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8294

TRT#: 6

SEX: Male

DAY ON TEST: 522

DOSE: 10 PPM 10-3

DISP: Moribund Sacrifice

HISTO: 852564

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Bone	Bone Marrow	Brain	Epididymis
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Nose	Parathyroid Gland	Prostate	Salivary Glands
Skin	Stomach - Forestomach	Stomach - Glandular	Trachea
Urinary Bladder			

**OBSERVATIONS**

Adrenal Gland	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
	Cortex	Vacuolization Cytoplasmic	Mild
Heart		Degeneration	Chronic, Moderate
Kidney		Nephropathy	Chronic, Moderate
Liver	Bile Duct	Hyperplasia	Mild
		Leukemia Mononuclear	
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Pancreas	Acinus	Atrophy	Mild
Pituitary Gland	Pars Distalis	Hyperplasia	Moderate
Preputial Gland		Inflammation	Chronic Active, Mild
Spleen		Leukemia Mononuclear	
		[ Leukemia Mononuclear TGLS = 1-11 ]	
Testes	Interstitial Cell	Hyperplasia	Mild
Thymus		Leukemia Mononuclear	
Thyroid Gland	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8295

TRT#: 6

SEX: Male

DAY ON TEST: 619

DOSE: 10 PPM 10-3

DISP: Moribund Sacrifice

HISTO: 852565

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Epididymis	Esophagus	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Nose	Pancreas
Parathyroid Gland	Prostate	Salivary Glands	Skin
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder			

OBSERVATIONS

Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Marked
Liver		Eosinophilic Focus	Moderate
	Bile Duct	Hyperplasia	Marked
	Oval Cell	Hyperplasia	Mild
		Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 2-4			
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
	Mediastinal	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Moderate
Pituitary Gland	Pars Distalis	Hyperplasia	Mild
Preputial Gland		Inflammation	Chronic Active, Mild
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLs = 1-11 ]			
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA TGLs = 4-10			
Thyroid Gland	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8296

TRT#: 6

SEX: Male

DAY ON TEST: 657

DOSE: 10 PPM 10-3

DISP: Moribund Sacrifice

HISTO: 852566

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Brain	Epididymis
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Nose
Parathyroid Gland	Pituitary Gland	Skin	Stomach - Forestomach
Stomach - Glandular	Trachea	Urinary Bladder	

MISSING

Mammary Gland

OBSERVATIONS

Adrenal Gland	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
	Cortex	Vacuolization Cytoplasmic	Mild
Heart		Leukemia Mononuclear	
Islets, Pancreatic		Necrosis	Marked
Kidney		Leukemia Mononuclear	
		Nephropathy	Chronic, Mild
Liver		Eosinophilic Focus	Minimal
	Bile Duct	Hyperplasia	Moderate
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Note: LEUKEMIA MONUC	TGLs = 3-4		
Lung		Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 4-2,4-3		
Lymph Node	Mandibular	Leukemia Mononuclear	
Pancreas		Leukemia Mononuclear	
		Necrosis	Marked
Note: LEUKEMIA MONUC	TGLs = 1-11		
Preputial Gland		Inflammation	Chronic Active, Mild
Prostate		Inflammation	Chronic Active, Mild
Salivary Glands		Leukemia Mononuclear	
Spleen		Leukemia Mononuclear	

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:07

**First Dose M/F:** NA / NA

**Lab:** BAT

---

**ANIMAL ID:** 8296

**TRT#:** 6

**SEX:** Male

**DAY ON TEST:** 657

**DOSE:** 10 PPM 10-3

**DISP:** Moribund Sacrifice

**HISTO:** 852566

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

[ Leukemia Mononuclear TGLS = 2-11 ]

Testes

Bilateral, Interstit Cell

Adenoma

Thymus

Leukemia Mononuclear

Necrosis

Marked

[ Necrosis TGLS = 5-2 ]

Thyroid Gland

C Cell

Hyperplasia

Moderate

---

**PRIMARY CAUSE OF DEATH**

-

**Animal Note:** MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

---

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8297

TRT#: 6

SEX: Male

DAY ON TEST: 736

DOSE: 10 PPM 10-3

DISP: Terminal Sacrifice

HISTO: 852567

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Kidney

Nephropathy

Chronic, Marked

Note: NEPHROPATHY TGLs = 3-4

Liver

Basophilic Focus

Minimal

Eosinophilic Focus

Moderate

Bile Duct

Hyperplasia

Moderate

Hypertrophy

Mild

Inflammation

Chronic, Mild

Vacuolization Cytoplasmic

Mild

Adenosquamous Carcinoma

Lung

Note: CARC ADENOSQUA TGLs = 1-2

Spleen

Capsule

Cyst

Note: CYST TGLs = 2-3

Testes

Bilateral, Interstit Cell

Adenoma

Note: ADENOMA TGLs = 5-6

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8298

TRT#: 6

SEX: Male

DAY ON TEST: 630

DOSE: 10 PPM 10-3

DISP: Moribund Sacrifice

HISTO: 852568

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Brain	Epididymis	Esophagus
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Nose
Parathyroid Gland	Preputial Gland	Prostate	Salivary Glands
Stomach - Forestomach	Stomach - Glandular	Trachea	Urinary Bladder

OBSERVATIONS

Adrenal Gland	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
Bone Marrow	Femoral	Leukemia Mononuclear	
Heart		Leukemia Mononuclear	
Kidney		Leukemia Mononuclear	
Liver		Nephropathy	Chronic, Mild
		Eosinophilic Focus	Moderate
	Bile Duct	Hepatocellular Adenoma	Multiple
	Oval Cell	Hyperplasia	Moderate
		Hyperplasia	Mild
		Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 4-4		
Note: HEPATOCLR ADEN	TGLs = 6-14,7-14		
Lung		Alveolar/Bronchiolar Adenoma	
		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Moderate
Pancreas		Leukemia Mononuclear	
Pituitary Gland	Pars Distalis	Leukemia Mononuclear	
Skin	Subcut Tiss	Fibroma	
Note: FIBROMA	TGLs = 1-11		
Spleen		Leukemia Mononuclear	
Testes	Interstit Cell	Adenoma	
	Seminif Tub	Atrophy	Moderate

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:07

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8298

**TRT#:** 6

**SEX:** Male

**DAY ON TEST:** 630

**DOSE:** 10 PPM 10-3

**DISP:** Moribund Sacrifice

**HISTO:** 852568

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Note: ADENOMA TGLs = 2-12

Note: ATROPHY TGLs = 3-10

Thymus

Leukemia Mononuclear

Note: LEUKEMIA MONUC TGLs = 5-13

Thyroid Gland

C Cell

Adenoma

C Cell

Hyperplasia

Moderate

---

**PRIMARY CAUSE OF DEATH**

-

Animal Note: LIVER MASS MULTIPLE COVERED BY TGL 6 AND 7

Animal Note: MORIBUND SAC. DUE TO LEUKEMIA AND SKIN TUMOR

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8299

TRT#: 6

SEX: Male

DAY ON TEST: 531

DOSE: 10 PPM 10-3

DISP: Natural Death

HISTO: 852569

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Brain	Epididymis	Esophagus
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Nose
Pancreas	Parathyroid Gland	Prostate	Salivary Glands
Skin	Stomach - Forestomach	Stomach - Glandular	Trachea
Urinary Bladder			

OBSERVATIONS

Adrenal Gland	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
Bone Marrow	Femoral	Leukemia Mononuclear	
Heart		Leukemia Mononuclear	
Kidney		Leukemia Mononuclear	
		Nephropathy	Chronic, Moderate
Liver		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Marked
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Note: LEUKEMIA MONUC TGLs = 2-4			
Note: [ HEPATOCLR ADEN ] TGLs = 6-12,7-12			
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
	Mediastinal	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Mild
Pituitary Gland	Pars Distalis	Hyperplasia	Mild
Preputial Gland		Inflammation	Chronic Active, Marked
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-11 ]			
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA TGLs = 5-10			
Thymus		Leukemia Mononuclear	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:07

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8299

**TRT#:** 6

**SEX:** Male

**DAY ON TEST:** 531

**DOSE:** 10 PPM 10-3

**DISP:** Natural Death

**HISTO:** 852569

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Thyroid Gland

C Cell

Hyperplasia

Moderate

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**PRIMARY CAUSE OF DEATH**

-

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Animal Note: TGL3, MASS MULTIPLE IS COVERED BY TGL 6 AND 7

Animal Note: CAUSE OF DEATH, DUE TO LEUKEMIA AND LIVER TUMORS

---

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8300

TRT#: 6

SEX: Male

DAY ON TEST: 674

DOSE: 10 PPM 10-3

DISP: Moribund Sacrifice

HISTO: 852570

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Nose	Parathyroid Gland	Preputial Gland
Prostate	Salivary Glands	Skin	Stomach - Forestomach
Thymus	Trachea	Urinary Bladder	

MISSING

Mammary Gland

OBSERVATIONS

Adrenal Gland	Cortex	Vacuolization Cytoplasmic	Mild
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Moderate
Liver		Degeneration	Cystic, Mild
	Bile Duct	Eosinophilic Focus	Moderate
		Hyperplasia	Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
[ Vacuolization Cytoplasmic TGLS = 2-4,2-13 ]			
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Pancreas	Acinus	Atrophy	Mild
Pituitary Gland	Pars Distalis	Hyperplasia	Mild
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 4-12,1-11 ]			
Stomach	Glandular	Hyperplasia	Focal, Mild
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA	TGLs = 5-10		
Thyroid Gland	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)

**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:07

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8300

**TRT#:** 6

**SEX:** Male

**DAY ON TEST:** 674

**DOSE:** 10 PPM 10-3

**DISP:** Moribund Sacrifice

**HISTO:** 852570

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Animal Note: TGL4-12,SMALL FOLD IN SPLEEN WITHIN NORMAL LIMITS

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

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\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8301

TRT#: 7

SEX: Male

DAY ON TEST: 659

DOSE: 30 PPM 0-10

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Islets, Pancreatic	Lung
Lymph Node	Nose	Parathyroid Gland	Pituitary Gland
Prostate	Salivary Glands	Skin	Spleen
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder			

OBSERVATIONS

Adrenal Gland	Cortex	Vacuolization Cytoplasmic	Mild
Epididymis		Inflammation	Chronic Active, Mild
Heart		Degeneration	Chronic, Mild
Intestine Small	Jejunum	Leiomyosarcoma	Metastatic (Mesentery)
Kidney		Nephropathy	Chronic, Mild
Liver		Eosinophilic Focus	Marked
	Bile Duct	Hepatocellular Adenoma	Multiple
	Oval Cell	Hyperplasia	Moderate
		Hyperplasia	Mild
		Necrosis	Moderate
Note: HEPATOCLR ADEN TGLs = 2-13,3-14			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mesentery		Fibrosarcoma	
Note: FIBROSARC TGLs = 1-11,1-12			
Pancreas	Acinus	Atrophy	Marked
Preputial Gland		Inflammation	Chronic Active, Mild
Testes	Bilateral, Interstit Cell	Adenoma	
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO ABDOMINAL TUMOR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8302

TRT#: 7

SEX: Male

DAY ON TEST: 656

DOSE: 30 PPM 0-10

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Brain	Esophagus	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Nose	Parathyroid Gland
Pituitary Gland	Prostate	Salivary Glands	Skin
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder			

OBSERVATIONS

Adrenal Gland	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 11-7		
Bone Marrow	Femoral	Leukemia Mononuclear	
Epididymis		Inflammation	Chronic Active, Mild
Heart		Leukemia Mononuclear	
Kidney		Leukemia Mononuclear	
		Nephropathy	Chronic, Marked
Liver		Eosinophilic Focus	Moderate
		Hepatocellular Carcinoma	Multiple
	Bile Duct	Hyperplasia	Marked
	Oval Cell	Hyperplasia	Moderate
		Hypertrophy	Moderate
		Leukemia Mononuclear	
Note: HYPERPLASIA	TGLs = 6-17		
Note: HEPATOCLR CARC	TGLs = 4-15,5-16		
Note: LEUKEMIA MONUC	TGLs = 3-4		
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
	Pancreatic	Leukemia Mononuclear	
	Renal	Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 9-14,10-12		
Mammary Gland		Hyperplasia	Cystic, Mild

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8302

TRT#: 7

SEX: Male

DAY ON TEST: 656

DOSE: 30 PPM 0-10

DISP: Moribund Sacrifice

HISTO:

**ORGAN AND ACCOUNTABLE SITE STATUS**

Pancreas	Acinus	Atrophy	Mild
Preputial Gland	Duct	Dilatation	Moderate
Note: DILATATION	TGLs = 1-11		
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 2-13 ]			
Testes	Interstit Cell	Adenoma	
	Interstit Cell	Hyperplasia	Mild
Note: ADENOMA	TGLs = 8-10		
Note: HYPERPLASIA	TGLs = 7-10		
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL10-12, PANCREATIC MASS IS LYMPH NODE WITH LEUKEMIA

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8303

TRT#: 7

SEX: Male

DAY ON TEST: 727

DOSE: 30 PPM 0-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Lung	Lymph Node	Pancreas	Parathyroid Gland
Pituitary Gland	Salivary Glands	Spleen	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	Urinary Bladder

MISSING

Nose	Preputial Gland
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OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Cortex	Hypertrophy	Mild
Heart		Degeneration	Chronic, Moderate
Intestine Small	Jejunum	Leiomyosarcoma	
Note: LEIOMYOSAR TGLs = 4-11			
Islets, Pancreatic		Adenoma	
Kidney		Nephropathy	Chronic, Moderate
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Moderate
		Hypertrophy	Mild
Note: HEPATOCLR ADEN TGLs = 3-12			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Prostate		Inflammation	Chronic Active, Mild
		Metaplasia	Squamous, Mild
Skin	Subcut Tiss	Hemangioma	
Testes	Interstit Cell	Adenoma	
	Seminif Tub	Atrophy	Moderate
Note: ATROPHY TGLs = 2-10			

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:07

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8303

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 727

**DOSE:** 30 PPM 0-10

**DISP:** Terminal Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

Note: ADENOMA TGLs = 1-10

Thyroid Gland

C Cell

Hyperplasia

Moderate

---

**PRIMARY CAUSE OF DEATH**

-

---

Animal Note: NOSE MISSING FROM WET TISSUE

---

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8304

TRT#: 7

SEX: Male

DAY ON TEST: 643

DOSE: 30 PPM 0-10

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Brain	Epididymis
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Nose	Pituitary Gland	Prostate	Salivary Glands
Skin	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder		

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
Bone Marrow	Femoral	Leukemia Mononuclear	
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Mild
Liver		Degeneration	Cystic, Moderate
		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Minimal
Note: HEPATOCLR ADEN	TGLs = 3-4,3-12,3-13		
Note: LEUKEMIA MONUC	TGLs = 2-4,2-12,2-13		
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Minimal
Parathyroid Gland		Hypertrophy	Minimal
Preputial Gland		Inflammation	Chronic Active, Mild
Spleen		Leukemia Mononuclear	
	[ Leukemia Mononuclear TGLS = 1-11 ]		
Testes	Bilateral, Interstit Cell	Adenoma	
Thyroid Gland	C Cell	Hyperplasia	Moderate

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)

**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:07

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8304

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 643

**DOSE:** 30 PPM 0-10

**DISP:** Moribund Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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PRIMARY CAUSE OF DEATH

-

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Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8305

TRT#: 7

SEX: Male

DAY ON TEST: 631

DOSE: 30 PPM 0-10

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Bone	Brain	Epididymis
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Nose	Parathyroid Gland	Pituitary Gland	Salivary Glands
Skin	Stomach - Forestomach	Stomach - Glandular	Tooth
Trachea	Urinary Bladder		

OBSERVATIONS

Adrenal Gland	Medulla	Hyperplasia	Mild
Bone Marrow	Femoral	Leukemia Mononuclear	
Heart		Degeneration	Chronic, Mild
Kidney		Leukemia Mononuclear	
		Nephropathy	Chronic, Mild
Liver		Clear Cell Focus	Mild
		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
		Hepatocellular Carcinoma	Multiple
	Bile Duct	Hyperplasia	Marked
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Minimal
Note: LEUKEMIA MONUC	TGLs = 4-4,4-14,4-15		
Note: HEPATOCLR ADEN	TGLs = 5-4,5-14,8-15		
Note: HEPATOCLR CARC	TGLs = 8-15,5-14		
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
	Mediastinal	Leukemia Mononuclear	
	Mesenteric	Leukemia Mononuclear	
	Pancreatic	Leukemia Mononuclear	
	[ Leukemia Mononuclear TGLS = 3-12,7-13,9-7 ]		
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Mild

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:07

**First Dose M/F:** NA / NA

**Lab:** BAT

**ANIMAL ID:** 8305

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 631

**DOSE:** 30 PPM 0-10

**DISP:** Moribund Sacrifice

**HISTO:**

**ORGAN AND ACCOUNTABLE SITE STATUS**

Preputial Gland

Adenoma

Note: ADENOMA TGLs = 1-16

Prostate

Inflammation

Chronic Active, Mild

Spleen

Leukemia Mononuclear

Note: LEUKEMIA MONUC TGLs = 2-11

Testes

Bilateral, Interstit Cell

Adenoma

Thymus

Leukemia Mononuclear

Note: LEUKEMIA MONUC TGLs = 6-2

Thyroid Gland

C Cell

Hyperplasia

Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA AND LIVER TUMORS

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8306

TRT#: 7

SEX: Male

DAY ON TEST: 727

DOSE: 30 PPM 0-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Epididymis	Esophagus	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Lung	Nose
Parathyroid Gland	Prostate	Salivary Glands	Skin
Stomach - Forestomach	Stomach - Glandular	Trachea	Urinary Bladder

MISSING

Thymus

OBSERVATIONS

Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Moderate
Liver		Angiectasis	Mild
		Basophilic Focus	Mild
		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
		Hepatocellular Carcinoma	
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Note: HEPATOCLR ADEN	TGLs = 2-4,2-11		
Note: HEPATOCLR CARC	TGLs = 2-4,3-11		
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Moderate
Pituitary Gland	Pars Distalis	Hyperplasia	Moderate
Preputial Gland		Inflammation	Chronic Active, Mild
Spleen		Leukemia Mononuclear	
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA	TGLs = 1-10		

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:07

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8306

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 727

**DOSE:** 30 PPM 0-10

**DISP:** Terminal Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Thyroid Gland	C Cell	Hyperplasia	Mild
PRIMARY CAUSE OF DEATH	-		

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8307

TRT#: 7

SEX: Male

DAY ON TEST: 604

DOSE: 30 PPM 0-10

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Brain	Esophagus
Intestine Large - Cecum	Intestine Large - Colon	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Lung	Lymph Node
Nose	Parathyroid Gland	Prostate	Salivary Glands
Skin	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder		

MISSING

Preputial Gland

OBSERVATIONS

Adrenal Gland	Cortex	Hypertrophy	Mild
Bone Marrow	Femoral	Leukemia Mononuclear	
Epididymis	Serosa	Mesothelioma Malignant	
Heart		Degeneration	Chronic, Mild
Intestine Large	Rectum	Parasite Metazoan	
Kidney		Nephropathy	Chronic, Mild
Liver		Eosinophilic Focus	Moderate
		Hepatocellular Adenoma	Multiple
		Hepatocellular Carcinoma	Multiple
	Bile Duct	Hyperplasia	Moderate
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Note: HEPATOCLR CARC	TGLs = 5-14,5-15		
Note: HEPATOCLR ADEN	TGLs = 5-4,5-14		
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Minimal
Mesentery		Mesothelioma Malignant	
Note: MESOTHELIO MAL	TGLs = 4-13		
Pancreas	Acinus	Atrophy	Moderate
	Acinus	Cytomegaly	Mild

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8307

TRT#: 7

SEX: Male

DAY ON TEST: 604

DOSE: 30 PPM 0-10

DISP: Moribund Sacrifice

HISTO:

**ORGAN AND ACCOUNTABLE SITE STATUS**

Pituitary Gland	Pars Distalis	Hyperplasia	Mild
Spleen		Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 6-12		
Testes	Interstit Cell	Adenoma	
	Seminif Tub	Atrophy	Marked
	Tunic	Mesothelioma Malignant	
	Seminif Tub	Mineralization	Moderate
Note: ADENOMA	TGLs = 3-10		
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA AND MESOTHELIOMA

Animal Note: TGL2, STOMACH NODULES ARE IN MESENTERY

Animal Note: TGL1-11, NO PANCREAS, JUST MORE MESENTERY NODULES

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8308

TRT#: 7

SEX: Male

DAY ON TEST: 727

DOSE: 30 PPM 0-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lung	Lymph Node	Nose
Pituitary Gland	Prostate	Salivary Glands	Skin
Spleen	Stomach - Glandular	Trachea	Urinary Bladder

MISSING

Thymus

OBSERVATIONS

Adrenal Gland	Cortex	Hypertrophy	Minimal
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Moderate
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Mild
	Oval Cell	Hyperplasia	Mild
		Hypertrophy	Mild
		Vacuolization Cytoplasmic	Mild
Note: HEPATOCLR ADEN TGLs = 2-4,2-11,2-12,2-13			
Note: HEPATOCLR ADEN TGLs = 1-4,1-11,1-12,1-13			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Moderate
Parathyroid Gland		Hyperplasia	Mild
Preputial Gland		Inflammation	Chronic Active, Mild
Stomach	Forestomach	Acanthosis	Marked
	Forestomach	Inflammation	Chronic Active, Moderate
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA TGLs = 3-10			

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:07

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8308

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 727

**DOSE:** 30 PPM 0-10

**DISP:** Terminal Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

Thyroid Gland

C Cell

Hyperplasia

Mild

---

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8309

TRT#: 7

SEX: Male

DAY ON TEST: 728

DOSE: 30 PPM 0-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Brain	Epididymis
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Lung	Lymph Node	Nose	Parathyroid Gland
Prostate	Salivary Glands	Skin	Spleen
Stomach - Glandular	Thymus	Trachea	Urinary Bladder

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Medulla	Pheochromocytoma Benign	
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Marked
Liver		Basophilic Focus	Mild
		Eosinophilic Focus	Marked
	Bile Duct	Hyperplasia	Mild
	Oval Cell	Hyperplasia	Mild
		Hypertrophy	Mild
		Vacuolization Cytoplasmic	Moderate
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Pancreas	Acinus	Atrophy	Moderate
Pituitary Gland	Pars Distalis	Vacuolization Cytoplasmic	Mild
Preputial Gland		Inflammation	Chronic Active, Mild
Stomach	Forestomach	Acanthosis	Mild
	Forestomach	Inflammation	Chronic Active, Mild
	Forestomach	Ulcer	Mild
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA TGLs = 1-12			
Thyroid Gland	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8310

TRT#: 7

SEX: Male

DAY ON TEST: 693

DOSE: 30 PPM 0-10

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Epididymis	Esophagus	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Lymph Node	Nose
Parathyroid Gland	Pituitary Gland	Prostate	Salivary Glands
Skin	Spleen	Stomach - Glandular	Thymus
Trachea	Urinary Bladder		

MISSING

Preputial Gland

OBSERVATIONS

Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Marked
Liver		Eosinophilic Focus	Marked
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Mild
		Squamous Cell Carcinoma	Metastatic (Stomach)
		Vacuolization Cytoplasmic	Mild
Note: SQUAM CEL CARC	TGLs = 5-4,6-11		
Lung		Squamous Cell Carcinoma	Metastatic (Stomach)
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Mesentery		Squamous Cell Carcinoma	Metastatic (Stomach)
Note: SQUAM CEL CARC	TGLs = 3-13		
Pancreas		Squamous Cell Carcinoma	Metastatic (Stomach)
Note: SQUAM CEL CARC	TGLs = 1-13,2-13		
Stomach	Forestomach	Squamous Cell Carcinoma	
Note: SQUAM CEL CARC	TGLs = 7-12		
Testes	Bilateral, Interstit Cell	Adenoma	
Thyroid Gland	C Cell	Adenoma	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:07

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8310

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 693

**DOSE:** 30 PPM 0-10

**DISP:** Moribund Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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C Cell

Hyperplasia

Mild

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**PRIMARY CAUSE OF DEATH**

-

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Animal Note: MORIBUND SACRIFICE DUE TO STOMACH TUMOR

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8311

TRT#: 7

SEX: Male

DAY ON TEST: 728

DOSE: 30 PPM 0-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Epididymis	Esophagus	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Lung	Lymph Node	Parathyroid Gland
Prostate	Salivary Glands	Skin	Spleen
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder			

OBSERVATIONS

Heart		Degeneration	Chronic, Mild
Islets, Pancreatic		Adenoma	
Kidney		Nephropathy	Chronic, Moderate
Liver		Eosinophilic Focus	Marked
	Bile Duct	Hepatocellular Carcinoma	
		Hyperplasia	Mild
		Hypertrophy	Mild
		Vacuolization Cytoplasmic	Mild
Note: HEPATOCLR CARC TGLs = 1-4			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Nose	Mucosa	Inflammation	Chronic Active, Mild
Pancreas	Acinus	Atrophy	Mild
Pituitary Gland	Pars Distalis	Hyperplasia	Mild
Preputial Gland		Inflammation	Chronic Active, Mild
Testes	Bilateral, Interstit Cell	Adenoma	
	Seminif Tub	Atrophy	Moderate
Note: ATROPHY TGLs = 3-10			
Note: ADENOMA TGLs = 2-10			
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8312

TRT#: 7

SEX: Male

DAY ON TEST: 682

DOSE: 30 PPM 0-10

DISP: Moribund Sacrifice

HISTO:

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Epididymis	Esophagus	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Lung	Lymph Node
Nose	Parathyroid Gland	Pituitary Gland	Prostate
Salivary Glands	Skin	Stomach - Glandular	Thymus
Trachea	Urinary Bladder		

**OBSERVATIONS**

Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Marked
Note: NEPHROPATHY	TGLs = 3-1		
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
		Hepatocellular Carcinoma	
	Bile Duct	Hyperplasia	Mild
		Vacuolization Cytoplasmic	Moderate
Note: HEPATOCLR ADEN	TGLs = 5-12,6-11		
Note: VACUOLIZ CYTO	TGLs = 4-4		
Note: HEPATOCLR CARC	TGLs = 5-12		
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Minimal
Preputial Gland		Inflammation	Chronic Active, Mild
Spleen		Fibrosis	Mild
Stomach	Forestomach	Acanthosis	Marked
	Forestomach	Inflammation	Chronic Active, Moderate
	Forestomach	Ulcer	Moderate
Testes	Interstitial Cell	Adenoma	
	Seminif Tub	Atrophy	Marked

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:07

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8312

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 682

**DOSE:** 30 PPM 0-10

**DISP:** Moribund Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

Note: ATROPHY      TGLs = 2-10

Note: ADENOMA      TGLs = 1-10

Thyroid Gland

C Cell

Hyperplasia

Moderate

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**PRIMARY CAUSE OF DEATH**

-

Animal Note: EYE DISCHARGE IS NOT A SIGNIFICANT LESION

Animal Note: MORIBUND SACRIFICE DUE TO LIVER TUMORS

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8313

TRT#: 7

SEX: Male

DAY ON TEST: 643

DOSE: 30 PPM 0-10

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Brain
Epididymis	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lung	Nose	Pancreas
Parathyroid Gland	Pituitary Gland	Prostate	Salivary Glands
Skin	Stomach - Glandular	Thymus	Trachea
Urinary Bladder			

OBSERVATIONS

Bone Marrow	Femoral	Leukemia Mononuclear	
Heart		Degeneration	Chronic, Moderate
Kidney	Cortex	Cyst	
		Nephropathy	Chronic, Marked
Liver		Eosinophilic Focus	Marked
	Bile Duct	Hyperplasia	Marked
	Oval Cell	Hyperplasia	Mild
		Hypertrophy	Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Moderate
Note: LEUKEMIA MONUC TGLs = 2-4			
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Moderate
Preputial Gland		Inflammation	Chronic Active, Mild
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLs = 1-11 ]			
Stomach	Forestomach	Acanthosis	Moderate
	Forestomach	Inflammation	Chronic Active, Moderate
Testes	Bilateral, Interstit Cell	Adenoma	
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:07

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8313

**TRT#:** 7

**DOSE:** 30 PPM 0-10

**SEX:** Male

**DISP:** Moribund Sacrifice

**DAY ON TEST:** 643

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:07

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8314

TRT#: 7

SEX: Male

DAY ON TEST: 729

DOSE: 30 PPM 0-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Epididymis	Esophagus	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Lung	Lymph Node
Nose	Parathyroid Gland	Pituitary Gland	Prostate
Salivary Glands	Skin	Spleen	Stomach - Forestomach
Trachea	Urinary Bladder		

MISSING

Thymus

OBSERVATIONS

Heart		Degeneration	Chronic, Moderate
Kidney		Nephropathy	Chronic, Moderate
Liver		Eosinophilic Focus	Moderate
		Hepatocellular Adenoma	Multiple
		Hepatocellular Carcinoma	Multiple
	Bile Duct	Hyperplasia	Moderate
		Vacuolization Cytoplasmic	Moderate
Note: HEPATOCLR ADEN TGLs = 4-4,4-11,4-12,5-4,5-11,5-12			
Note: HEPATOCLR CARC TGLs = 3-11,3-12			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Mild
Preputial Gland		Inflammation	Chronic Active, Mild
Stomach	Glandular	Hyperplasia	Focal, Mild
Note: HYPERPLASIA TGLs = 6-13			
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA TGLs = 1-10			
Thyroid Gland	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)

**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:08

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8314

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** 30 PPM 0-10

**DISP:** Terminal Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Animal Note: TGL2-10, TESTIOS SIZE WITHIN NORMAL LIMITS

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8315

TRT#: 7

SEX: Male

DAY ON TEST: 729

DOSE: 30 PPM 0-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lung	Lymph Node	Nose
Parathyroid Gland	Pituitary Gland	Preputial Gland	Prostate
Salivary Glands	Skin	Spleen	Stomach - Glandular
Trachea	Urinary Bladder		

MISSING

Thymus

OBSERVATIONS

Adrenal Gland	Cortex	Vacuolization Cytoplasmic	Mild
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Moderate
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
		Hepatocellular Carcinoma	
	Bile Duct	Hyperplasia	Mild
	Oval Cell	Hyperplasia	Mild
		Hypertrophy	Mild
		Vacuolization Cytoplasmic	Moderate
Note: HEPATOCLR ADEN TGLs = 2-4			
Note: [ HEPATOCLR CARC ] TGLs = 1-11			
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Marked
Stomach	Forestomach	Acanthosis	Focal, Marked
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA TGLs = 3-10			
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8316

TRT#: 7

SEX: Male

DAY ON TEST: 729

DOSE: 30 PPM 0-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Epididymis	Esophagus	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Lung	Nose
Parathyroid Gland	Prostate	Salivary Glands	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	Urinary Bladder

OBSERVATIONS

Heart		Degeneration	Chronic, Moderate
Kidney		Leukemia Mononuclear	
		Nephropathy	Chronic, Moderate
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Mild
		Leukemia Mononuclear	
Note: HEPATOCLR ADEN	TGLs = 3-4,4-13,5-12		
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Moderate
Pancreas	Acinus	Atrophy	Mild
	Acinus	Hyperplasia	Mild
Pituitary Gland	Pars Distalis	Hyperplasia	Mild
Preputial Gland		Inflammation	Chronic Active, Mild
Skin		Squamous Cell Carcinoma	
Note: SQUAM CEL CARC	TGLs = 2-11		
Spleen		Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 6-1		
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA	TGLs = 1-10		
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8317

TRT#: 7

SEX: Male

DAY ON TEST: 729

DOSE: 30 PPM 0-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Intestine Large	Intestine Small
Islets, Pancreatic	Nose	Parathyroid Gland	Pituitary Gland
Prostate	Salivary Glands	Skin	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	Urinary Bladder

OBSERVATIONS

Adrenal Gland	Cortex	Hypertrophy	Mild
Heart		Degeneration	Chronic, Moderate
Kidney		Inflammation	Chronic, Multifocal, Mild
		Nephropathy	Chronic, Moderate
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Mild
		Inflammation	Chronic, Multifocal, Mild
Note: HEPATOCLR ADEN	TGLs = 5-4,6-4,7-4,5-11,6-11,7-11		
Lung		Alveolar/Bronchiolar Adenoma	
Lymph Node	Mandibular	Hyperplasia	Lymphoid, Moderate
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Marked
Preputial Gland		Inflammation	Chronic Active, Mild
Spleen		Fibrosis	Mild
Note: FIBROSIS	TGLs = 4-1		
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA	TGLs = 1-10,3-10		
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL2-10, TESTIS SIZE WITHIN NORMAL LIMITS

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8318

TRT#: 7

SEX: Male

DAY ON TEST: 730

DOSE: 30 PPM 0-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Epididymis	Esophagus	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Lung	Lymph Node
Nose	Parathyroid Gland	Preputial Gland	Prostate
Salivary Glands	Skin	Stomach - Forestomach	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	

OBSERVATIONS

Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Moderate
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
		Hepatocellular Carcinoma	
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Note: HEPATOCLR CARC	TGLs = 5-12		
Note: HEPATOCLR ADEN	TGLs = 5-12,6-4,7-4		
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Mild
Pituitary Gland	Pars Distalis	Adenoma	
Note: ADENOMA	TGLs = 4-7		
Spleen		Leukemia Mononuclear	
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA	TGLs = 1-10,2-10		
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)

**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:08

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8318

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** 30 PPM 0-10

**DISP:** Terminal Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

Animal Note: ORIGINAL BLOCK 5 MISSING, 5-I SUBSTITUTED

Animal Note: TGL3-10, TESTIS SIZE WITHIN NORMAL LIMITS

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8319

TRT#: 7

SEX: Male

DAY ON TEST: 725

DOSE: 30 PPM 0-10

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Brain	Epididymis
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Mesentery	Nose	Pituitary Gland	Prostate
Salivary Glands	Stomach - Glandular	Trachea	Urinary Bladder

OBSERVATIONS

Adrenal Gland	Capsule, Cortex Cortex	Ectopic Tissue Necrosis	Moderate
Bone Marrow	Femoral	Leukemia Mononuclear	
Heart		Degeneration	Chronic, Moderate
Kidney		Nephropathy	Chronic, Moderate
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
		Hepatocellular Carcinoma	
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Mild
Note: HEPATOCLR ADEN	TGLs = 5-4,7-13		
Note: HEPATOCLR CARC	TGLs = 7-14		
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular Mesenteric	Leukemia Mononuclear Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 8-15		
Mammary Gland		Hyperplasia	Cystic, Moderate
Pancreas	Acinus	Atrophy	Moderate
Parathyroid Gland		Cyst	
Preputial Gland	Duct	Dilatation	Moderate
		Inflammation	Chronic Active, Mild
Note: DILATATION	TGLs = 6-10		
Skin	Subcut Tiss	Neurofibroma	
Note: NEUROFIBROMA	TGLs = 1-12		

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:08

**First Dose M/F:** NA / NA

**Lab:** BAT

**ANIMAL ID:** 8319

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 725

**DOSE:** 30 PPM 0-10

**DISP:** Moribund Sacrifice

**HISTO:**

**ORGAN AND ACCOUNTABLE SITE STATUS**

Spleen

Leukemia Mononuclear

Thrombosis

Multiple

Note: LEUKEMIA MONUC TGLs = 2-11

Stomach

Forestomach

Acanthosis

Moderate

Testes

Bilateral, Interstit Cell

Adenoma

Note: ADENOMA TGLs = 3-10

Thymus

Leukemia Mononuclear

Thyroid Gland

C Cell

Hyperplasia

Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL4-10, TESTIS SIZE WITHIN NORMAL LIMITS

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8320

TRT#: 7

SEX: Male

DAY ON TEST: 730

DOSE: 30 PPM 0-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex  
Brain  
Intestine Large - Colon  
Intestine Small - Jejunum  
Parathyroid Gland  
Skin  
Urinary Bladder

Adrenal Gland - Medulla  
Epididymis  
Intestine Large - Rectum  
Islets, Pancreatic  
Pituitary Gland  
Stomach - Forestomach

Bone  
Esophagus  
Intestine Small - Duodenum  
Lung  
Prostate  
Stomach - Glandular

Bone Marrow  
Intestine Large - Cecum  
Intestine Small - Ileum  
Nose  
Salivary Glands  
Trachea

MISSING

Thymus

OBSERVATIONS

Heart  
Kidney  
Liver

Degeneration  
Nephropathy  
Eosinophilic Focus  
Hepatocellular Adenoma  
Hepatocellular Carcinoma  
Hyperplasia  
Leukemia Mononuclear  
Vacuolization Cytoplasmic

Chronic, Mild  
Chronic, Moderate  
Marked  
Multiple  
Moderate  
Mild

Note: HEPATOCLR ADEN TGLs = 2-11,3-4

Note: HEPATOCLR CARC TGLs = 2-11

Lymph Node

Deep Cervical  
Mandibular

Carcinoma  
Leukemia Mononuclear

Metastatic (Thyroid Gland)

Pancreas

Acinus

Atrophy

Moderate

Preputial Gland

Inflammation

Chronic Active, Minimal

Spleen

Leukemia Mononuclear

Testes

Bilateral, Interstit Cell

Adenoma

Note: ADENOMA TGLs = 1-10

Thyroid Gland

C Cell

Carcinoma

Mild

C Cell

Hyperplasia

Note: CARCINOMA TGLs = 4-7

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:08

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8320

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** 30 PPM 0-10

**DISP:** Terminal Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8321

TRT#: 7

SEX: Male

DAY ON TEST: 731

DOSE: 30 PPM 0-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lung	Nose	Pancreas
Parathyroid Gland	Pituitary Gland	Prostate	Salivary Glands
Spleen	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder		

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Moderate
Eye	Retina	Atrophy	Marked
	Lens	Cataract	Moderate
Note: CATARACT	TGLs = 5-11		
Note: ATROPHY	TGLs = 5-11		
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Mild
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
		Hepatocellular Carcinoma	
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Mild
		Hypertrophy	Mild
		Vacuolization Cytoplasmic	Mild
Note: HEPATOCLR CARC	TGLs = 4-15		
Note: HEPATOCLR ADEN	TGLs = 3-13,3-14,3-15		
Lymph Node	Mandibular	Inflammation	Chronic, Multifocal, Mild
	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Moderate
Preputial Gland		Inflammation	Chronic Active, Mild
Skin	Subcut Tiss	Fibrosarcoma	
Note: FIBROSARC	TGLs = 6-12		

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:08

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8321

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 731

**DOSE:** 30 PPM 0-10

**DISP:** Terminal Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA	TGLs = 1-10,2-10		
Thyroid Gland	C Cell	Hyperplasia Inflammation	Moderate Chronic, Mild

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**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8322

TRT#: 7

SEX: Male

DAY ON TEST: 731

DOSE: 30 PPM 0-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Nose	Parathyroid Gland	Pituitary Gland
Prostate	Salivary Glands	Skin	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	Urinary Bladder

OBSERVATIONS

Adrenal Gland	Cortex	Hypertrophy	Mild
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Moderate
Liver		Eosinophilic Focus	Moderate
		Hepatocellular Adenoma	
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Minimal
Note: HEPATOCLR ADEN	TGLs = 3-4		
Note: LEUKEMIA MONUC	TGLs = 4-4		
Note: PANCREATIC ACINAR CELL DIFFERENTIATION			
Lung	Alveolar Epith	Hyperplasia	Mild
		Leukemia Mononuclear	
Note: HYPERPLASIA	TGLs = 5-3		
Lymph Node	Mandibular	Leukemia Mononuclear	
Pancreas	Acinus	Atrophy	Mild
Preputial Gland		Inflammation	Chronic Active, Mild
Spleen		Leukemia Mononuclear	
	[ Leukemia Mononuclear TGLS = 2-11 ]		
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA	TGLs = 1-10		
Thyroid Gland	C Cell	Hyperplasia	Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:08

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8322

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 731

**DOSE:** 30 PPM 0-10

**DISP:** Terminal Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8323

TRT#: 7

SEX: Male

DAY ON TEST: 623

DOSE: 30 PPM 0-10

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Nose	Parathyroid Gland	Prostate
Salivary Glands	Skin	Stomach - Forestomach	Stomach - Glandular
Trachea	Urinary Bladder		

MISSING

Thymus

OBSERVATIONS

Adrenal Gland	Medulla	Hyperplasia	Moderate
Heart		Leukemia Mononuclear	
Kidney		Nephropathy	Chronic, Moderate
Liver	Bile Duct	Hyperplasia	Mild
	Oval Cell	Hyperplasia	Moderate
		Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 4-4,5-4			
Lung		Leukemia Mononuclear	
Lymph Node	Inguinal	Leukemia Mononuclear	
	Mandibular	Leukemia Mononuclear	
	Mediastinal	Leukemia Mononuclear	
	Mesenteric	Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 1-7,2-6 [ Leukemia Mononuclear TGLS = 6-11 ]			
Mammary Gland		Hyperplasia	Cystic, Mild
Mesentery		Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 3-12			
Pancreas	Acinus	Atrophy	Moderate
Pituitary Gland	Pars Distalis	Hyperplasia	Mild
Preputial Gland		Inflammation	Chronic Active, Mild
Spleen		Leukemia Mononuclear	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:08

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8323

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 623

**DOSE:** 30 PPM 0-10

**DISP:** Moribund Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Testes	Interstit Cell	Adenoma	
	Seminif Tub	Atrophy	Moderate
	Interstit Cell	Hyperplasia	Mild
Thyroid Gland	C Cell	Hyperplasia	Mild

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**PRIMARY CAUSE OF DEATH**

-

Animal Note: TGL6-11, SKIN MASS IS INGUINAL LYMPH NODE

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

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\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8324

TRT#: 7

SEX: Male

DAY ON TEST: 701

DOSE: 30 PPM 0-10

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lung	Lymph Node	Nose
Parathyroid Gland	Prostate	Salivary Glands	Skin
Spleen	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder		

MISSING

Preputial Gland

OBSERVATIONS

Adrenal Gland	Cortex	Vacuolization Cytoplasmic	Mild
Heart		Degeneration	Chronic, Moderate
Kidney		Nephropathy	Chronic, Marked
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Mild
		Vacuolization Cytoplasmic	Moderate
Note: HEPATOCLR ADEN TGLs = 1-4,1-11,2-4,2-11,3-4,3-11			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Moderate
Pancreas	Acinus	Atrophy	Mild
Pituitary Gland	Pars Distalis	Hyperplasia	Mild
Stomach	Forestomach	Inflammation	Chronic Active, Moderate
	Forestomach	Ulcer	Moderate
Testes	Bilateral, Interstit Cell	Adenoma	
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:08

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8324

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 701

**DOSE:** 30 PPM 0-10

**DISP:** Moribund Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Animal Note: MORIBUND SACRIFICE DUE TO STOMACH ULCER AND INFLAMMATION

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8325

TRT#: 7

SEX: Male

DAY ON TEST: 731

DOSE: 30 PPM 0-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Intestine Large - Cecum	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Lung	Mammary Gland	Nose	Pancreas
Parathyroid Gland	Preputial Gland	Salivary Glands	Spleen
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder			

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Moderate
	Cortex	Vacuolization Cytoplasmic	Mild
Heart		Degeneration	Chronic, Mild
Intestine Large	Colon	Parasite Metazoan	
Kidney		Nephropathy	Chronic, Moderate
Liver		Eosinophilic Focus	Marked
		Hepatocellular Carcinoma	
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Mild
		Hypertrophy	Mild
		Inflammation	Chronic, Multifocal, Mild
Note: HEPATOCLR CARC	TGLs = 4-11		
Pituitary Gland	Pars Distalis	Hyperplasia	Mild
Prostate		Inflammation	Chronic Active, Mild
		Metaplasia	Squamous, Mild
Skin	Subcut Tiss	Fibroma	
Note: FIBROMA	TGLs = 1-12		
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA	TGLs = 2-10		
Thyroid Gland	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL3-10, TESTIS SIZE WITHIN NORMAL LIMITS

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:08

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8325

**TRT#:** 7

**DOSE:** 30 PPM 0-10

**SEX:** Male

**DISP:** Terminal Sacrifice

**DAY ON TEST:** 731

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8326

TRT#: 7

SEX: Male

DAY ON TEST: 619

DOSE: 30 PPM 0-10

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Brain	Epididymis	Esophagus
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Nose
Pancreas	Pituitary Gland	Prostate	Salivary Glands
Skin	Stomach - Forestomach	Stomach - Glandular	Trachea
Urinary Bladder			

MISSING

Parathyroid Gland	Thymus
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OBSERVATIONS

Adrenal Gland	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
Bone Marrow	Femoral	Leukemia Mononuclear	
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Mild
Liver		Eosinophilic Focus	Marked
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Moderate
		Hypertrophy	Moderate
		Leukemia Mononuclear	
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
	Mediastinal	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Mild
Preputial Gland	Duct	Dilatation	Mild
		Inflammation	Chronic Active, Mild
Spleen		Leukemia Mononuclear	
Note: [ LEUKEMIA MONUC ] TGLs = 1-1			
Testes	Bilateral, Interstit Cell	Adenoma	
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:08

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8326

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 619

**DOSE:** 30 PPM 0-10

**DISP:** Moribund Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8327

TRT#: 7

SEX: Male

DAY ON TEST: 734

DOSE: 30 PPM 0-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Bone	Bone Marrow	Brain
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Lung	Lymph Node	Nose	Parathyroid Gland
Pituitary Gland	Prostate	Salivary Glands	Skin
Spleen	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder		

OBSERVATIONS

Adrenal Gland	Medulla	Hyperplasia	Mild
	Medulla	Pheochromocytoma Benign	
Epididymis		Inflammation	Chronic Active, Mild
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Moderate
Liver		Hepatocellular Adenoma	Multiple
		Hepatocellular Carcinoma	
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Mild
		Hypertrophy	Mild
		Inflammation	Chronic, Multifocal, Mild
		Vacuolization Cytoplasmic	Mild
Note: HEPATOCLR ADEN	TGLs = 4-11,4-12,4-13,4-14		
Note: HEPATOCLR CARC	TGLs = 3-12		
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Mild
Preputial Gland		Inflammation	Chronic Active, Mild
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA	TGLs = 1-10,2-10		
Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8328

TRT#: 7

SEX: Male

DAY ON TEST: 699

DOSE: 30 PPM 0-10

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Heart	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Nose	Parathyroid Gland
Prostate	Salivary Glands	Skin	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
Kidney		Nephropathy	Chronic, Moderate
Liver		Hepatocellular Adenoma	Multiple
		Hepatocellular Carcinoma	
	Bile Duct	Hyperplasia	Marked
	Oval Cell	Hyperplasia	Moderate
		Hypertrophy	Moderate
		Leukemia Mononuclear	
Note: HEPATOCLR CARC	TGLs = 5-12		
Note: HEPATOCLR ADEN	TGLs = 4-4,4-12		
Note: LEUKEMIA MONUC	TGLs = 3-4,3-12		
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Moderate
Pancreas	Acinus	Atrophy	Moderate
Pituitary Gland	Pars Distalis	Hyperplasia	Moderate
Preputial Gland		Inflammation	Chronic Active, Mild
Spleen		Fibrosis	Moderate
		Leukemia Mononuclear	
[ Fibrosis TGLS = 6-11 ]			
[ Leukemia Mononuclear TGLS = 1-11 ]			
Stomach	Forestomach	Acanthosis	Moderate
Testes	Bilateral, Interstit Cell	Adenoma	

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:08

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8328

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 699

**DOSE:** 30 PPM 0-10

**DISP:** Moribund Sacrifice

**HISTO:**

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

Thyroid Gland

C Cell

Adenoma

C Cell

Hyperplasia

Mild

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**PRIMARY CAUSE OF DEATH**

-

Animal Note: TGL2-10, TESTIS SIZE WITHIN NORMAL LIMITS

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA AND LIVER TUMORS

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8329

TRT#: 7

SEX: Male

DAY ON TEST: 700

DOSE: 30 PPM 0-10

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Heart	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Lung	Nose
Parathyroid Gland	Pituitary Gland	Salivary Glands	Skin
Stomach - Glandular	Thymus	Trachea	Urinary Bladder

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
Kidney		Nephropathy	Chronic, Marked
Liver		Basophilic Focus	Mild
		Eosinophilic Focus	Marked
	Bile Duct	Hepatocellular Adenoma	Multiple
		Hyperplasia	Moderate
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Moderate
Note: HEPATOCLR ADEN	TGLs = 2-4		
Note: LEUKEMIA MONUC	TGLs = 1-4		
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Moderate
Pancreas	Acinus	Atrophy	Moderate
	Acinus	Hyperplasia	Moderate
Preputial Gland		Inflammation	Chronic Active, Mild
Prostate		Inflammation	Chronic Active, Mild
		Metaplasia	Squamous, Mild
Spleen		Leukemia Mononuclear	
Stomach	Forestomach	Acanthosis	Moderate
	Forestomach	Inflammation	Chronic Active, Moderate
	Forestomach	Ulcer	Moderate
Testes	Bilateral, Interstit Cell	Adenoma	
Thyroid Gland	C Cell	Adenoma	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:08

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8329

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 700

**DOSE:** 30 PPM 0-10

**DISP:** Moribund Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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C Cell

Hyperplasia

Mild

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**PRIMARY CAUSE OF DEATH**

-

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Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA AND LIVER TUMORS

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8330

TRT#: 7

SEX: Male

DAY ON TEST: 734

DOSE: 30 PPM 0-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Intestine Large - Cecum	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Lung	Nose	Parathyroid Gland	Pituitary Gland
Preputial Gland	Prostate	Salivary Glands	Skin
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder			

OBSERVATIONS

Adrenal Gland	Cortex	Vacuolization Cytoplasmic	Mild
Heart		Degeneration	Chronic, Mild
Intestine Large	Colon	Parasite Metazoan	
Kidney		Nephropathy	Chronic, Moderate
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
		Hepatocellular Carcinoma	Multiple
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Mild
		Leukemia Mononuclear	
Note: HEPATOCLR CARC	TGLs = 4-12,5-13		
Note: HEPATOCLR ADEN	TGLs = 4-12,5-13,6-14		
Lymph Node	Mandibular	Leukemia Mononuclear	
	Mediastinal	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Moderate
Pancreas	Acinus	Atrophy	Mild
Spleen		Leukemia Mononuclear	
	[ Leukemia Mononuclear TGLS = 3-11 ]		
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA	TGLs = 1-10		
Thyroid Gland	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:08

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8330

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 734

**DOSE:** 30 PPM 0-10

**DISP:** Terminal Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Animal Note: TGL2-10, TESTIS SIZE WITHIN NORMAL LIMITS

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8331

TRT#: 7

SEX: Male

DAY ON TEST: 734

DOSE: 30 PPM 0-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lymph Node	Mammary Gland	Nose
Parathyroid Gland	Pituitary Gland	Prostate	Salivary Glands
Spleen	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder		

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
Heart		Degeneration	Chronic, Moderate
Kidney		Nephropathy	Chronic, Moderate
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Mild
	Oval Cell	Hyperplasia	Mild
		Hypertrophy	Mild
		Vacuolization Cytoplasmic	Moderate
Note: HEPATOCLR ADEN TGLs = 6-4,7-4			
Lung	Interstitial	Inflammation	Chronic Active, Mild
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Pancreas	Acinus	Atrophy	Mild
Preputial Gland		Inflammation	Chronic Active, Mild
Skin	Subcut Tiss	Fibroma	Multiple
Note: FIBROMA TGLs = 1-11,2-12			
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA TGLs = 3-10,4-10			
Thyroid Gland	C Cell	Adenoma	

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL5-10, TESTIS WITHIN NORMAL LIMITS

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:08

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8331

**TRT#:** 7

**DOSE:** 30 PPM 0-10

**SEX:** Male

**DISP:** Terminal Sacrifice

**DAY ON TEST:** 734

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8332

TRT#: 7

SEX: Male

DAY ON TEST: 733

DOSE: 30 PPM 0-10

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Epididymis	Esophagus	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Lung	Lymph Node
Nose	Parathyroid Gland	Pituitary Gland	Prostate
Salivary Glands	Stomach - Forestomach	Thymus	Trachea
Urinary Bladder			

OBSERVATIONS

Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Mild
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Mild
	Oval Cell	Hyperplasia	Mild
		Vacuolization Cytoplasmic	Mild
Note: HEPATOCLR ADEN TGLs = 4-4,5-4			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Pancreas	Acinus	Atrophy	Mild
Preputial Gland		Inflammation	Chronic Active, Mild
Skin	Subcut Tiss	Fibroma	Multiple
Note: FIBROMA TGLs = 1-11,2-12			
Spleen		Fibrosis	Mild
Stomach	Glandular	Mineralization	Mild
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA TGLs = 3-10			
Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO SKIN TUMORS

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:08

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8332

**TRT#:** 7

**DOSE:** 30 PPM 0-10

**SEX:** Male

**DISP:** Moribund Sacrifice

**DAY ON TEST:** 733

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8333

TRT#: 7

SEX: Male

DAY ON TEST: 683

DOSE: 30 PPM 0-10

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Nose	Pancreas	Parathyroid Gland
Pituitary Gland	Salivary Glands	Skin	Stomach - Glandular
Trachea	Urinary Bladder		

MISSING

Thymus

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
Eye	Retina	Atrophy	Marked
	Lens	Cataract	Moderate
Note: CATARACT	TGLs = 1-14		
Note: ATROPHY	TGLs = 1-14		
Heart		Degeneration	Chronic, Minimal
Kidney		Nephropathy	Chronic, Marked
Note: NEPHROPATHY	TGLs = 5-1		
Liver		Basophilic Focus	
		Eosinophilic Focus	Moderate
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Mild
	Oval Cell	Hyperplasia	Mild
		Vacuolization Cytoplasmic	Mild
Lung	Alveolar Epith	Hyperplasia	Mild
Lymph Node	Mediastinal	Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 2-13		
Note: MANDIBULAR LN NORMAL			
Preputial Gland		Inflammation	Chronic Active, Mild
Prostate		Inflammation	Chronic Active, Moderate
Spleen		Fibrosis	Mild

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8333

TRT#: 7

SEX: Male

DAY ON TEST: 683

DOSE: 30 PPM 0-10

DISP: Moribund Sacrifice

HISTO:

**ORGAN AND ACCOUNTABLE SITE STATUS**

Leukemia Mononuclear

[ Leukemia Mononuclear TGLS = 3-12 ]

Stomach	Forestomach	Acanthosis	Moderate
Testes	Interstit Cell	Adenoma	
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL6-10, TESTIS WITHIN NORMAL LIMITS

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA AND NEPHROPATHY

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8334

TRT#: 7

SEX: Male

DAY ON TEST: 707

DOSE: 30 PPM 0-10

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Parathyroid Gland	Prostate	Salivary Glands
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder			

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Moderate
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Marked
Liver		Basophilic Focus	Mild
		Eosinophilic Focus	Marked
	Bile Duct	Hepatocellular Adenoma	Multiple
	Oval Cell	Hyperplasia	Moderate
		Hyperplasia	Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Note: HEPATOCLR ADEN	TGLs = 3-4,3-12,3-14,4-4,4-12,4-14		
Note: HEPATOCLR ADEN	TGLs = 3-4,3-12,3-14		
Note: LEUKEMIA MONUC	TGLs = 2-4,2-12,2-14		
Lung	Alveolar Epith	Hyperplasia	Moderate
		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Moderate
Nose	Mucosa	Inflammation	Chronic Active, Mild
Pancreas	Acinus	Atrophy	Moderate
Pituitary Gland	Pars Distalis	Adenoma	
Note: ADENOMA	TGLs = 5-7		
Skin	Subcut Tiss	Lipoma	
Note: LIPOMA	TGLs = 6-13		

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:08

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8334

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 707

**DOSE:** 30 PPM 0-10

**DISP:** Moribund Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

Spleen

Leukemia Mononuclear

[ Leukemia Mononuclear TGLS = 1-11 ]

Testes

Interstit Cell

Hyperplasia

Minimal

Thyroid Gland

C Cell

Hyperplasia

Mild

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**PRIMARY CAUSE OF DEATH**

-

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Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA AND LIVER TUMORS

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8335

TRT#: 7

SEX: Male

DAY ON TEST: 588

DOSE: 30 PPM 0-10

DISP: Natural Death

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Epididymis	Esophagus	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Lymph Node	Nose
Pancreas	Parathyroid Gland	Prostate	Salivary Glands
Spleen	Stomach - Forestomach	Stomach - Glandular	Thymus
Thyroid Gland	Trachea	Urinary Bladder	

MISSING

Pituitary Gland	Preputial Gland
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OBSERVATIONS

Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Moderate
Liver		Eosinophilic Focus	Moderate
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Minimal
		Hypertrophy	Mild
		Vacuolization Cytoplasmic	Minimal
Lung	Interstitialium	Inflammation	Chronic Active, Moderate
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Skin	Subcut Tiss	Fibrosarcoma	
Note: FIBROSARC TGLs = 1-11			
Testes	Interstitial Cell	Adenoma	
	Interstitial Cell	Hyperplasia	Mild
Note: ADENOMA TGLs = 4-10			

PRIMARY CAUSE OF DEATH

-

Animal Note: CAUSE OF DEATH, LARGE TUMOR IN SUBCUTIS OF SKIN

Animal Note: TGL2-4, LIVER SIZE WITHIN NORMAL LIMITS

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8336

TRT#: 7

SEX: Male

DAY ON TEST: 536

DOSE: 30 PPM 0-10

DISP: Natural Death

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Brain
Epididymis	Esophagus	Lung	Nose
Parathyroid Gland	Preputial Gland	Prostate	Salivary Glands
Skin	Stomach - Glandular	Thymus	Trachea

AUTO PRECLUDES DIAG.

Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Pancreas
Pituitary Gland	Thyroid Gland	Urinary Bladder	

OBSERVATIONS

Bone Marrow	Femoral	Leukemia Mononuclear	
Heart		Degeneration	Chronic, Moderate
Kidney		Nephropathy	Chronic, Minimal
Liver		Eosinophilic Focus	Moderate
	Bile Duct	Hyperplasia	Moderate
		Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 2-11,3-11,3-12			
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Mild
Spleen		Fibrosis	Moderate
		Leukemia Mononuclear	
[ Fibrosis TGLS = 5-13 ]			
Stomach	Forestomach	Cyst Epithelial Inclusion	
Note: CYST EPITH INC TGLs = 7-14			
Testes	Interstit Cell	Adenoma	
Note: ADENOMA TGLs = 6-10			

PRIMARY CAUSE OF DEATH

-

Animal Note: CAUSE OF DEATH, LEUKEMIA MONONUCLEAR

Animal Note: TGL1, CECUM AUTOLYZED

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8337

TRT#: 7

SEX: Male

DAY ON TEST: 735

DOSE: 30 PPM 0-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Heart	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Lymph Node	Nose
Pancreas	Pituitary Gland	Prostate	Salivary Glands
Skin	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder		

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Moderate
	Cortex	Vacuolization Cytoplasmic	Mild
Kidney		Nephropathy	Chronic, Moderate
Note: NEPHROPATHY TGLs = 5-1			
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
		Hepatocellular Carcinoma	Multiple
	Bile Duct	Hyperplasia	Mild
	Oval Cell	Hyperplasia	Moderate
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Note: HEPATOCLR CARC TGLs = 2-11,3-12 [ Hyperplasia TGLS = 4-4,4-11,4-12,4-13 ]			
Lung	Alveolar Epith	Hyperplasia	Mild
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Moderate
Parathyroid Gland		Hyperplasia	Mild
Preputial Gland		Inflammation	Chronic Active, Mild
Spleen		Fibrosis	Mild
		Leukemia Mononuclear	
Note: FIBROSIS TGLs = 1-14			

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:08

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8337

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 735

**DOSE:** 30 PPM 0-10

**DISP:** Terminal Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA TGLs = 6-15			
Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Mild
PRIMARY CAUSE OF DEATH	-		

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8338

TRT#: 7

SEX: Male

DAY ON TEST: 493

DOSE: 30 PPM 0-10

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lung	Lymph Node	Nose
Parathyroid Gland	Salivary Glands	Skin	Stomach - Forestomach
Stomach - Glandular	Trachea	Urinary Bladder	

MISSING

Thymus

OBSERVATIONS

Adrenal Gland Note: VACUOLIZ CYTO TGLs = 5-7	Cortex	Vacuolization Cytoplasmic	Marked
Eye Note: INFLAMMATION TGLs = 3-12	Cornea	Inflammation	Chronic Active, Marked
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Moderate
Liver Note: VACUOLIZ CYTO TGLs = 2-4		Hypertrophy	Moderate
		Vacuolization Cytoplasmic	Marked
Lymph Node Note: MANDIBULAR LN NORMAL			
Pancreas	Acinus	Atrophy	Mild
Pituitary Gland Note: ADENOMA TGLs = 4-7	Pars Distalis	Adenoma	
Preputial Gland	Duct	Hyperplasia	Squamous, Moderate
Prostate		Dilatation	Moderate
		Inflammation	Chronic Active, Mild
Spleen Note: FIBROSIS TGLs = 6-11		Fibrosis	Mild
Testes	Seminif Tub	Atrophy	Moderate
	Interstit Cell	Hyperplasia	Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:08

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8338

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 493

**DOSE:** 30 PPM 0-10

**DISP:** Moribund Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

Note: ATROPHY      TGLs = 7-10

Thyroid Gland

C Cell

Hyperplasia

Mild

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**PRIMARY CAUSE OF DEATH**

-

Animal Note: TGL1-11, SPLEEN SIZE WITHIN NORMAL LIMITS

Animal Note: MORIBUND SACRIFICE DUE TO PITUITARY TUMOR

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8339

TRT#: 7

SEX: Male

DAY ON TEST: 735

DOSE: 30 PPM 0-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex  
Brain  
Intestine Large - Colon  
Intestine Small - Jejunum  
Parathyroid Gland  
Stomach - Forestomach  
Urinary Bladder

Adrenal Gland - Medulla  
Epididymis  
Intestine Large - Rectum  
Islets, Pancreatic  
Pituitary Gland  
Stomach - Glandular

Bone  
Esophagus  
Intestine Small - Duodenum  
Lymph Node  
Prostate  
Thymus

Bone Marrow  
Intestine Large - Cecum  
Intestine Small - Ileum  
Nose  
Salivary Glands  
Trachea

OBSERVATIONS

Heart  
Kidney  
Liver

Degeneration  
Nephropathy  
Basophilic Focus  
Eosinophilic Focus  
Hepatocellular Adenoma  
Hepatocellular Carcinoma  
Hyperplasia  
Hyperplasia  
Leukemia Mononuclear  
Vacuolization Cytoplasmic

Chronic, Mild  
Chronic, Marked  
Mild  
Marked  
Multiple  
Moderate  
Mild  
Mild

Bile Duct  
Oval Cell

Note: LEUKEMIA MONUC TGLs = 5-4,5-13,5-14  
Note: HEPATOCLR ADEN TGLs = 6-4,6-13,6-14  
Note: HEPATOCLR CARC TGLs = 6-13

Lung  
Lymph Node  
Note: MANDIBULAR LN NORMAL

Leukemia Mononuclear

Mammary Gland  
Pancreas  
Preputial Gland  
Skin

Acinus  
Subcut Tiss

Hyperplasia  
Atrophy  
Inflammation  
Fibroma  
Squamous Cell Papilloma

Cystic, Mild  
Mild  
Chronic Active, Mild

Note: FIBROMA TGLs = 1-11

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:08

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8339

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 735

**DOSE:** 30 PPM 0-10

**DISP:** Terminal Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

Note: PAPILLOMA SQUA TGLs = 2-15

Spleen

[ Leukemia Mononuclear TGLS = 4-12 ]

Leukemia Mononuclear

Testes

Bilateral, Interstit Cell

Adenoma

Note: ADENOMA TGLs = 3-10

Thyroid Gland

C Cell

Adenoma

C Cell

Hyperplasia

Moderate

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**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8340

TRT#: 7

SEX: Male

DAY ON TEST: 692

DOSE: 30 PPM 0-10

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lung	Lymph Node	Nose
Pancreas	Parathyroid Gland	Pituitary Gland	Prostate
Salivary Glands	Skin	Stomach - Glandular	Thymus
Trachea	Urinary Bladder		

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Cortex	Vacuolization Cytoplasmic	Moderate
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Marked
Liver		Eosinophilic Focus	Moderate
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Moderate
		Hypertrophy	Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Note: LEUKEMIA MONUC	TGLs = 1-4,1-11,1-12		
Note: HEPATOCLR ADEN	TGLs = 2-4,2-11,2-12		
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Preputial Gland		Inflammation	Chronic Active, Mild
Spleen		Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 3-13		
Stomach	Forestomach	Acanthosis	Moderate
	Forestomach	Inflammation	Chronic Active, Moderate
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA	TGLs = 4-14		

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:08

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8340

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 692

**DOSE:** 30 PPM 0-10

**DISP:** Moribund Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Thyroid Gland

C Cell

Hyperplasia

Mild

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**PRIMARY CAUSE OF DEATH**

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Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA AND LIVER TUMORS

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8341

TRT#: 7

SEX: Male

DAY ON TEST: 713

DOSE: 30 PPM 0-10

DISP: Natural Death

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lung	Lymph Node	Parathyroid Gland
Pituitary Gland	Prostate	Salivary Glands	Skin
Spleen	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder		

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Cortex	Vacuolization Cytoplasmic	Mild
Eye	Retina	Atrophy	Marked
	Lens	Cataract	Moderate
Note: CATARACT	TGLs = 1-11		
Note: ATROPHY	TGLs = 1-11		
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Marked
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Mild
		Inflammation	Chronic, Multifocal, Mild
		Vacuolization Cytoplasmic	Moderate
Note: HEPATOCLR ADEN	TGLs = 2-4,3-12		
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Nose	Mucosa	Inflammation	Chronic Active, Minimal
Pancreas	Acinus	Atrophy	Mild
Preputial Gland		Inflammation	Chronic Active, Mild
Testes	Bilateral, Interstit Cell	Adenoma	
Thyroid Gland	C Cell	Hyperplasia	Mild

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:08

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8341

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 713

**DOSE:** 30 PPM 0-10

**DISP:** Natural Death

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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PRIMARY CAUSE OF DEATH

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Animal Note: CAUSE OF DEATH, LEUKEMIA AND NEPHROPATHY

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8342

TRT#: 7

SEX: Male

DAY ON TEST: 735

DOSE: 30 PPM 0-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Heart	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Lung	Lymph Node
Nose	Parathyroid Gland	Pituitary Gland	Preputial Gland
Prostate	Salivary Glands	Skin	Spleen
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder			

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
Kidney		Nephropathy	Chronic, Moderate
Liver		Basophilic Focus	Mild
		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
		Hepatocellular Carcinoma	Multiple
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Mild
		Vacuolization Cytoplasmic	Mild

Note: HEPATOCLR ADEN TGLs = 2-4,4-11,5-12

Note: HEPATOCLR CARC TGLs = 3-11,5-12

Lymph Node

Note: MANDIBULAR LN NORMAL

Mammary Gland

Pancreas

Testes

Note: ADENOMA TGLs = 1-10

Thyroid Gland

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8343

TRT#: 7

SEX: Male

DAY ON TEST: 682

DOSE: 30 PPM 0-10

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Brain	Epididymis
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Nose	Pancreas	Parathyroid Gland	Pituitary Gland
Salivary Glands	Skin	Stomach - Forestomach	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Cortex	Hypertrophy	Mild
Bone Marrow	Femoral	Leukemia Mononuclear	
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Moderate
Liver		Eosinophilic Focus	Moderate
	Bile Duct	Hepatocellular Adenoma	Multiple
		Hyperplasia	Marked
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Note: LEUKEMIA MONUC TGLs = 7-4,7-12			
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
	Mesenteric	Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 4-13			
Mammary Gland		Hyperplasia	Cystic, Moderate
Preputial Gland		Inflammation	Chronic Active, Mild
Prostate		Inflammation	Chronic Active, Mild
Spleen		Fibrosis	Mild
		Leukemia Mononuclear	
[ Fibrosis TGLS = 3-11 ]			
[ Leukemia Mononuclear TGLS = 2-11 ]			
Testes	Bilateral, Interstit Cell	Adenoma	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:08

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8343

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 682

**DOSE:** 30 PPM 0-10

**DISP:** Moribund Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

Note: ADENOMA TGLs = 1-10

Thyroid Gland

C Cell

Adenoma

Multiple

C Cell

Hyperplasia

Moderate

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**PRIMARY CAUSE OF DEATH**

-

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8344

TRT#: 7

SEX: Male

DAY ON TEST: 517

DOSE: 30 PPM 0-10

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Brain	Epididymis
Esophagus	Eye	Heart	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Nose	Parathyroid Gland
Pituitary Gland	Prostate	Salivary Glands	Skin
Stomach - Forestomach	Stomach - Glandular	Trachea	Urinary Bladder

MISSING

Thymus

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Cortex	Vacuolization Cytoplasmic	Mild
Bone Marrow	Femoral	Leukemia Mononuclear	
Kidney		Nephropathy	Chronic, Mild
Liver		Eosinophilic Focus	Mild
	Bile Duct	Hyperplasia	Mild
		Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 2-4			
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Moderate
Pancreas	Acinus	Atrophy	Mild
Preputial Gland		Inflammation	Chronic Active, Mild
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-11 ]			
Testes	Interstit Cell	Hyperplasia	Mild
Thyroid Gland	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

Animal Note: EYES ARE NORMAL ON MICRO

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8345

TRT#: 7

SEX: Male

DAY ON TEST: 661

DOSE: 30 PPM 0-10

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Epididymis	Esophagus	Heart
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Nose
Parathyroid Gland	Preputial Gland	Salivary Glands	Skin
Stomach - Glandular	Thymus	Trachea	

MISSING

Prostate	Urinary Bladder
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OBSERVATIONS

Kidney		Nephropathy	Chronic, Moderate
Liver		Eosinophilic Focus	Marked
	Bile Duct	Hepatocellular Adenoma	
		Hyperplasia	Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Moderate
Note: HEPATOCLR ADEN TGLs = 3-4			
Note: LEUKEMIA MONUC TGLs = 2-4			
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Pancreas	Acinus	Atrophy	Moderate
Pituitary Gland	Pars Distalis	Hyperplasia	Mild
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-11 ]			
Stomach	Forestomach	Acanthosis	Mild
	Forestomach	Inflammation	Chronic Active, Mild
	Forestomach	Ulcer	Mild
Testes	Bilateral, Interstit Cell	Adenoma	
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:08

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8345

**TRT#:** 7

**DOSE:** 30 PPM 0-10

**SEX:** Male

**DISP:** Moribund Sacrifice

**DAY ON TEST:** 661

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8346

TRT#: 7

SEX: Male

DAY ON TEST: 736

DOSE: 30 PPM 0-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Epididymis	Esophagus	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Lung	Nose
Pancreas	Parathyroid Gland	Pituitary Gland	Prostate
Salivary Glands	Skin	Stomach - Forestomach	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	

OBSERVATIONS

Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Marked
Liver		Basophilic Focus	Mild
		Eosinophilic Focus	Moderate
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Mild
	Oval Cell	Hyperplasia	Minimal
		Hypertrophy	Minimal
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Note: HEPATOCLR ADEN TGLs = 5-4,5-12			
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Mild
Preputial Gland		Inflammation	Chronic Active, Mild
Spleen		Fibrosis	Mild
[ Fibrosis TGLS = 1-11 ]		Leukemia Mononuclear	
Testes	Interstitial Cell	Adenoma	
	Interstitial Cell	Hyperplasia	Mild
Note: ADENOMA TGLs = 2-10,4-10			
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:08

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8346

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 736

**DOSE:** 30 PPM 0-10

**DISP:** Terminal Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Animal Note: TGL3-10, TESTIS SIZE WITHIN NORMAL LIMITS

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8347

TRT#: 7

SEX: Male

DAY ON TEST: 661

DOSE: 30 PPM 0-10

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Epididymis	Esophagus	Heart
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Lung
Nose	Parathyroid Gland	Pituitary Gland	Prostate
Salivary Glands	Skin	Stomach - Forestomach	Stomach - Glandular
Trachea	Urinary Bladder		

OBSERVATIONS

Kidney		Nephropathy	Chronic, Moderate
Liver		Eosinophilic Focus	Moderate
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Mild
		Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 2-4			
Note: [ EOSIN FOCUS ] TGLs = 3-4			
Lymph Node	Mandibular	Leukemia Mononuclear	
	Mediastinal	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Moderate
Pancreas	Acinus	Atrophy	Mild
Preputial Gland		Inflammation	Chronic Active, Mild
Spleen		Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 1-11			
Testes	Bilateral, Interstit Cell	Adenoma	
Thymus		Leukemia Mononuclear	
Thyroid Gland	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8348

TRT#: 7

SEX: Male

DAY ON TEST: 605

DOSE: 30 PPM 0-10

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Brain	Epididymis
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Lung	Nose	Pancreas	Parathyroid Gland
Prostate	Salivary Glands	Skin	Stomach - Glandular
Testes	Thymus	Trachea	Urinary Bladder

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Medulla	Hyperplasia	Mild
	Cortex	Hypertrophy	Mild
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Moderate
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Note: HEPATOCLR ADEN	TGLs = 3-4		
Note: LEUKEMIA MONUC	TGLs = 2-4		
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Mild
Pituitary Gland	Pars Distalis	Hyperplasia	Moderate
Preputial Gland		Inflammation	Chronic Active, Mild
Spleen		Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 1-11		
Stomach	Forestomach	Acanthosis	Moderate
	Forestomach	Inflammation	Chronic Active, Moderate
	Forestomach	Ulcer	Mild
Thyroid Gland	C Cell	Hyperplasia	Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:08

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8348

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 605

**DOSE:** 30 PPM 0-10

**DISP:** Moribund Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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PRIMARY CAUSE OF DEATH

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Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8349

TRT#: 7

SEX: Male

DAY ON TEST: 736

DOSE: 30 PPM 0-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Epididymis	Esophagus	Heart
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Lymph Node
Nose	Parathyroid Gland	Prostate	Salivary Glands
Skin	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder		

OBSERVATIONS

Kidney		Nephropathy	Chronic, Moderate
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Mild
	Oval Cell	Hyperplasia	Marked
		Leukemia Mononuclear	
		Metaplasia	Minimal
Note: HEPATOCLR ADEN TGLs = 6-12,7-13			
Lung		Alveolar/Bronchiolar Adenoma	
		Leukemia Mononuclear	
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Mild
Pituitary Gland	Pars Distalis	Adenoma	
Note: ADENOMA TGLs = 4-7			
Preputial Gland		Inflammation	Chronic Active, Mild
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 3-11 ]			
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA TGLs = 1-10			
Thyroid Gland	Follicular Cel	Cytoplasmic Alteration	Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:08

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8349

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 736

**DOSE:** 30 PPM 0-10

**DISP:** Terminal Sacrifice

**HISTO:**

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

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C Cell

Hyperplasia

Mild

Follicular Cel

Hypertrophy

Minimal

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**PRIMARY CAUSE OF DEATH**

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Animal Note: TGL2-10, TESTIS SIZE WITHIN NORMAL LIMITS

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8350

TRT#: 7

SEX: Male

DAY ON TEST: 736

DOSE: 30 PPM 0-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Epididymis
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Nose	Pancreas	Parathyroid Gland	Pituitary Gland
Prostate	Salivary Glands	Skin	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	Urinary Bladder

OBSERVATIONS

Bone Marrow	Femoral	Leukemia Mononuclear	
Brain		Hydrocephalus	Marked
Note: HYDROCEPHALUS TGLs = 1-5			
Heart		Degeneration	Chronic, Moderate
Kidney		Nephropathy	Chronic, Moderate
[ Nephropathy TGLS = 6-1 ]			
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Moderate
		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 3-4,3-14 ]			
Lung		Alveolar/Bronchiolar Adenoma	
		Leukemia Mononuclear	
Note: [ ALV BRON ADEN ] TGLs = 2-2			
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Mild
Preputial Gland	Duct	Hyperplasia	Squamous, Moderate
		Inflammation	Chronic Active, Moderate
Note: INFLAMMATION TGLs = 5-11			
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 4-12 ]			
Testes	Bilateral, Interstit Cell	Adenoma	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:08

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8350

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 736

**DOSE:** 30 PPM 0-10

**DISP:** Terminal Sacrifice

**HISTO:**

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

Note: ADENOMA TGLs = 7-10

Thyroid Gland

C Cell

Hyperplasia

Moderate

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**PRIMARY CAUSE OF DEATH**

-

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Animal Note: TGL8-10, TESTIS SIZE WITHIN NORMAL LIMITS

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\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8351

TRT#: 8

SEX: Male

DAY ON TEST: 727

DOSE: 30 PPM 10-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lung	Lymph Node	Nose
Parathyroid Gland	Salivary Glands	Skin	Spleen
Stomach - Glandular	Trachea	Urinary Bladder	

INSUFFICIENT TISSUE

Thymus

OBSERVATIONS

Adrenal Gland	Cortex	Vacuolization Cytoplasmic	Mild
Heart		Degeneration	Chronic, Mild
		Schwannoma Malignant	
Note: [ SCHWANNOMA MAL ] TGLs = 4-11			
Kidney		Nephropathy	Chronic, Moderate
Note: NEPHROPATHY TGLs = 1-1			
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
		Hepatocellular Carcinoma	Multiple
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Mild
		Vacuolization Cytoplasmic	Mild
Note: HEPATOCLR ADEN TGLs = 3-12,3-13,3-14			
Note: HEPATOCLR CARC TGLs = 3-12,3-14			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Marked
Pituitary Gland	Pars Distalis	Adenoma	
Preputial Gland		Inflammation	Chronic Active, Mild
Prostate		Inflammation	Chronic Active, Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:08

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8351

**TRT#:** 8

**SEX:** Male

**DAY ON TEST:** 727

**DOSE:** 30 PPM 10-10

**DISP:** Terminal Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Stomach Note: SQUAM CEL CARC TGLs = 5-15	Forestomach	Squamous Cell Carcinoma	
Testes Note: ADENOMA TGLs = 2-10	Bilateral, Interstit Cell	Adenoma	
Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Mild

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**PRIMARY CAUSE OF DEATH**

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8352

TRT#: 8

SEX: Male

DAY ON TEST: 651

DOSE: 30 PPM 10-10

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Brain	Esophagus	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Nose	Parathyroid Gland
Salivary Glands	Skin	Stomach - Forestomach	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	

OBSERVATIONS

Adrenal Gland	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
Bone Marrow	Femoral	Leukemia Mononuclear	
Epididymis		Inflammation	Chronic Active, Moderate
Eye	Retina	Atrophy	Marked
	Lens	Cataract	Moderate
Note: CATARACT	TGLs = 5-13		
Note: ATROPHY	TGLs = 5-13		
Harderian Gland	Acinus	Atrophy	Mild
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Mild
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Note: HEPATOCLR ADEN	TGLs = 2-4,2-12,3-4,3-12,4-4,4-12		
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Mild
Pituitary Gland	Pars Distalis	Adenoma	
		Leukemia Mononuclear	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:08

**First Dose M/F:** NA / NA

**Lab:** BAT

**ANIMAL ID:** 8352

**TRT#:** 8

**SEX:** Male

**DAY ON TEST:** 651

**DOSE:** 30 PPM 10-10

**DISP:** Moribund Sacrifice

**HISTO:**

**ORGAN AND ACCOUNTABLE SITE STATUS**

Preputial Gland		Inflammation	Chronic Active, Minimal
Prostate		Inflammation	Chronic Active, Mild
		Metaplasia	Squamous, Mild
Spleen		Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 1-11		
Testes	Seminif Tub	Atrophy	Marked
	Interstit Cell	Hyperplasia	Mild
Note: ATROPHY	TGLs = 1-10		
Thyroid Gland	C Cell	Hyperplasia	Mild

**PRIMARY CAUSE OF DEATH**

-

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA AND LIVER TUMORS

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8353

TRT#: 8

SEX: Male

DAY ON TEST: 572

DOSE: 30 PPM 10-10

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Brain
Epididymis	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Nose
Pancreas	Parathyroid Gland	Pituitary Gland	Prostate
Salivary Glands	Skin	Stomach - Forestomach	Stomach - Glandular
Trachea	Urinary Bladder		

MISSING

Intestine Large - Rectum	Intestine Small - Duodenum	Thymus
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OBSERVATIONS

Bone Marrow	Femoral	Leukemia Mononuclear	
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Mild
Liver		Degeneration	Cystic, Mild
		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Marked
	Oval Cell	Hyperplasia	Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Note: HEPATOCLR ADEN	TGLs = 4-12		
Note: LEUKEMIA MONUC	TGLs = 3-4		
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Mild
Preputial Gland	Duct	Dilatation	Moderate
		Inflammation	Chronic Active, Mild
Spleen		Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 2-11		
Testes	Bilateral, Interstit Cell	Adenoma	
	Seminif Tub	Atrophy	Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:08

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8353

**TRT#:** 8

**SEX:** Male

**DAY ON TEST:** 572

**DOSE:** 30 PPM 10-10

**DISP:** Moribund Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

Note: ATROPHY      TGLs = 1-10

Thyroid Gland

C Cell

Hyperplasia

Minimal

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**PRIMARY CAUSE OF DEATH**

-

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Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA AND LIVER TUMORS

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8354

TRT#: 8

SEX: Male

DAY ON TEST: 684

DOSE: 30 PPM 10-10

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Brain	Epididymis	Esophagus
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Parathyroid Gland
Salivary Glands	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder		

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Medulla	Hyperplasia	Mild
	Cortex	Vacuolization Cytoplasmic	Mild
Bone Marrow	Femoral	Leukemia Mononuclear	
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Moderate
Liver		Degeneration	Cystic, Mild
		Eosinophilic Focus	Marked
		Fibrosis	Moderate
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Marked
	Oval Cell	Hyperplasia	Moderate
		Leukemia Mononuclear	
Note: HEPATOCLR ADEN TGLs = 3-14			
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Mild
Nose	Mucosa	Inflammation	Chronic Active, Moderate
Pancreas	Acinus	Atrophy	Mild
Pituitary Gland	Pars Distalis	Adenoma	
Preputial Gland		Adenoma	
		Inflammation	Chronic Active, Mild
Note: ADENOMA TGLs = 6-13			
Prostate		Inflammation	Chronic Active, Mild

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8354

TRT#: 8

SEX: Male

DAY ON TEST: 684

DOSE: 30 PPM 10-10

DISP: Moribund Sacrifice

HISTO:

**ORGAN AND ACCOUNTABLE SITE STATUS**

Skin	Subcut Tiss	Metaplasia	Squamous, Moderate
Note: FIBROMA TGLs = 1-11		Fibroma	
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 2-12 ]			
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ATROPHY TGLs = 5-10	Seminif Tub	Atrophy	Marked
Thyroid Gland	C Cell	Adenoma	
Note: ADENOMA TGLs = 4-7	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA AND LIVER TUMORS

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8355

TRT#: 8

SEX: Male

DAY ON TEST: 727

DOSE: 30 PPM 10-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Parathyroid Gland	Pituitary Gland	Prostate
Salivary Glands	Skin	Stomach - Forestomach	Stomach - Glandular
Trachea	Urinary Bladder		

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Moderate
Heart		Degeneration	Chronic, Moderate
Kidney		Nephropathy	Chronic, Marked
Note: NEPHROPATHY	TGLs = 3-1		
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
		Hepatocellular Carcinoma	Multiple
	Bile Duct	Hyperplasia	Marked
	Oval Cell	Hyperplasia	Moderate
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Note: HEPATOCLR ADEN	TGLs = 4-4,4-13,4-14,5-4,5-13,5-14		
Note: HEPATOCLR CARC	TGLs = 5-13,5-14		
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
	Mesenteric	Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 6-15		
Nose	Mucosa	Inflammation	Chronic Active, Mild
Pancreas	Acinus	Atrophy	Marked
Preputial Gland		Inflammation	Chronic Active, Mild
Spleen		Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 1-11		
Testes	Bilateral, Interstit Cell	Adenoma	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:08

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8355

**TRT#:** 8

**SEX:** Male

**DAY ON TEST:** 727

**DOSE:** 30 PPM 10-10

**DISP:** Terminal Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

Note: ADENOMA TGLs = 2-10,2-12

Thymus

Leukemia Mononuclear

Thyroid Gland

C Cell

Hyperplasia

Moderate

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**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8356

TRT#: 8

SEX: Male

DAY ON TEST: 728

DOSE: 30 PPM 10-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lung	Lymph Node	Nose
Pancreas	Salivary Glands	Spleen	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	Urinary Bladder

MISSING

Parathyroid Gland

OBSERVATIONS

Adrenal Gland	Medulla	Pheochromocytoma Benign	
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Moderate
Liver		Basophilic Focus	Mild
		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Minimal
		Hypertrophy	Mild
		Inflammation	Chronic, Multifocal, Mild
		Vacuolization Cytoplasmic	Mild
Note: HEPATOCLR ADEN	TGLs = 4-13,4-14		
Mammary Gland		Hyperplasia	Cystic, Mild
Pituitary Gland	Pars Distalis	Hyperplasia	Mild
Preputial Gland		Inflammation	Chronic Active, Moderate
Prostate		Inflammation	Chronic Active, Mild
		Metaplasia	Squamous, Mild
Skin		Squamous Cell Papilloma	
Note: PAPILLOMA SQUA	TGLs = 1-11		
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA	TGLs = 2-10		

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:08

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8356

**TRT#:** 8

**SEX:** Male

**DAY ON TEST:** 728

**DOSE:** 30 PPM 10-10

**DISP:** Terminal Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Thyroid Gland

C Cell  
Follicle

Hyperplasia  
Hyperplasia

Moderate  
Cystic, Moderate

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PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8357

TRT#: 8

SEX: Male

DAY ON TEST: 644

DOSE: 30 PPM 10-10

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Brain	Epididymis
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Lung	Lymph Node	Nose	Parathyroid Gland
Pituitary Gland	Prostate	Salivary Glands	Skin
Stomach - Forestomach	Stomach - Glandular	Trachea	Urinary Bladder

MISSING

Preputial Gland	Thymus
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OBSERVATIONS

Adrenal Gland	Cortex	Vacuolization Cytoplasmic	Mild
Bone Marrow	Femoral	Hyperplasia	Neutrophil, Moderate
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Moderate
Liver		Eosinophilic Focus	Moderate
		Hepatocellular Adenoma	
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Mild
		Necrosis	Moderate
		Vacuolization Cytoplasmic	Minimal
Note: HEPATOCLR ADEN TGLs = 4-4,5-4			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Pancreas	Acinus	Atrophy	Moderate
Skeletal Muscle		Rhabdomyosarcoma	
Spleen		Hematopoietic Cell Proliferation	Moderate
[ Hematopoietic Cell Proliferation TGLS = 3-11 ]			
Testes	Interstit Cell	Adenoma	
	Seminif Tub	Atrophy	Minimal
	Interstit Cell	Hyperplasia	Mild
Thyroid Gland	C Cell	Adenoma	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:08

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8357

**TRT#:** 8

**SEX:** Male

**DAY ON TEST:** 644

**DOSE:** 30 PPM 10-10

**DISP:** Moribund Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

C Cell

Hyperplasia

Moderate

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**PRIMARY CAUSE OF DEATH**

-

Animal Note: MORIBUND SACRIFICE DUE TO SUBCUTANEOUS SKIN MASS

Animal Note: TGL2-6, BLADDER WITHIN NORMAL LIMITS ON MICRO

---

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8358

TRT#: 8

SEX: Male

DAY ON TEST: 728

DOSE: 30 PPM 10-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lung	Lymph Node	Nose
Parathyroid Gland	Pituitary Gland	Prostate	Salivary Glands
Skin	Spleen	Stomach - Forestomach	Stomach - Glandular
Trachea	Urinary Bladder		

MISSING

Thymus

OBSERVATIONS

Adrenal Gland	Medulla	Hyperplasia	Mild
Heart		Degeneration	Chronic, Moderate
Kidney		Nephropathy	Chronic, Marked
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Mild
		Hypertrophy	Minimal
		Inflammation	Chronic, Multifocal, Minimal
		Vacuolization Cytoplasmic	Minimal
Note: HEPATOCLR ADEN TGLs = 3-4			
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Marked
Preputial Gland		Inflammation	Chronic Active, Moderate
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA TGLs = 1-10			
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8359

TRT#: 8

SEX: Male

DAY ON TEST: 696

DOSE: 30 PPM 10-10

DISP: Natural Death

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex  
Epididymis  
Islets, Pancreatic  
Prostate  
Stomach - Glandular

Adrenal Gland - Medulla  
Esophagus  
Lung  
Salivary Glands  
Trachea

Bone  
Intestine Large - Colon  
Pancreas  
Skin  
Urinary Bladder

Brain  
Intestine Small - Duodenum  
Parathyroid Gland  
Stomach - Forestomach

AUTO PRECLUDES DIAG.

Intestine Large - Cecum  
Pituitary Gland

Intestine Large - Rectum

Intestine Small - Ileum

Intestine Small - Jejunum

OBSERVATIONS

Bone Marrow  
Heart  
Kidney  
Liver

Femoral

Leukemia Mononuclear  
Degeneration  
Nephropathy  
Eosinophilic Focus  
Hepatocellular Carcinoma  
Hyperplasia  
Hypertrophy  
Leukemia Mononuclear  
Vacuolization Cytoplasmic

Chronic, Moderate  
Chronic, Mild  
Moderate

Bile Duct

Hyperplasia  
Hypertrophy  
Leukemia Mononuclear  
Vacuolization Cytoplasmic

Mild  
Moderate

Note: LEUKEMIA MONUC TGLs = 2-4  
Note: HEPATOCLR CARC TGLs = 3-4  
Note: [ EOSIN FOCUS ] TGLs = 3-4

Lymph Node  
Nose  
Preputial Gland  
Spleen

Mandibular  
Mucosa

Leukemia Mononuclear  
Inflammation  
Inflammation  
Leukemia Mononuclear

Chronic Active, Mild  
Chronic Active, Mild

[ Leukemia Mononuclear TGLS = 1-1 ]

Stomach

Glandular

Ulcer

Mild

Note: ULCER TGLs = 4-6

Testes

Interstit Cell  
Seminif Tub

Adenoma  
Atrophy

Marked

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:08

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8359

**TRT#:** 8

**SEX:** Male

**DAY ON TEST:** 696

**DOSE:** 30 PPM 10-10

**DISP:** Natural Death

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

Thymus  
Thyroid Gland

Interstit Cell  
C Cell

Hyperplasia  
Leukemia Mononuclear  
Hyperplasia

Mild

Mild

---

**PRIMARY CAUSE OF DEATH**

-

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Animal Note: CAUSE OF DEATH, LEUKEMIA MONONUCLEAR

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8360

TRT#: 8

SEX: Male

DAY ON TEST: 696

DOSE: 30 PPM 10-10

DISP: Natural Death

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Brain	Epididymis
Esophagus	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Jejunum	Islets, Pancreatic	Nose	Pancreas
Pituitary Gland	Prostate	Salivary Glands	Skin
Stomach - Forestomach	Trachea	Urinary Bladder	

MISSING

Thymus

AUTO PRECLUDES DIAG.

Intestine Large - Cecum	Intestine Small - Ileum
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OBSERVATIONS

Adrenal Gland	Cortex	Vacuolization Cytoplasmic	Mild
Bone Marrow	Femoral	Leukemia Mononuclear	
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Mild
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
		Hepatocellular Carcinoma	
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Moderate
Note: HEPATOCLR ADEN	TGLs = 2-4,3-4		
Note: HEPATOCLR CARC	TGLs = 3-4		
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Parathyroid Gland		Adenoma	
Preputial Gland		Inflammation	Chronic Active, Moderate
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-1 ]			
Stomach	Glandular	Ulcer	Moderate

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:08

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8360

**TRT#:** 8

**SEX:** Male

**DAY ON TEST:** 696

**DOSE:** 30 PPM 10-10

**DISP:** Natural Death

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

Note: ULCER      TGLs = 4-11

Testes

Bilateral, Interstit Cell

Adenoma

Seminif Tub

Atrophy

Moderate

Thyroid Gland

C Cell

Hyperplasia

Mild

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**PRIMARY CAUSE OF DEATH**

-

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Animal Note: CAUSE OF DEATH, LEUKEMIA AND LIVER TUMORS

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8361

TRT#: 8

SEX: Male

DAY ON TEST: 450

DOSE: 30 PPM 10-10

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Epididymis
Esophagus	Heart	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lung	Lymph Node	Nose
Pancreas	Parathyroid Gland	Preputial Gland	Salivary Glands
Skin	Spleen	Stomach - Forestomach	Stomach - Glandular
Trachea	Urinary Bladder		

INSUFFICIENT TISSUE

Thymus

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Cortex	Vacuolization Cytoplasmic	Mild
Brain		Compression	
Kidney		Nephropathy	Chronic, Moderate
Liver		Basophilic Focus	Minimal
		Eosinophilic Focus	Marked
	Bile Duct	Hyperplasia	Moderate
		Hypertrophy	Mild
		Inflammation	Chronic, Multifocal, Minimal
		Necrosis	Minimal
		Vacuolization Cytoplasmic	Mild
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Pituitary Gland	Pars Distalis	Adenoma	
Note: ADENOMA TGLs = 3-7			
Prostate		Inflammation	Chronic Active, Mild
		Metaplasia	Squamous, Mild
Testes	Seminif Tub	Atrophy	Mild
Thyroid Gland	C Cell	Hyperplasia	Minimal
	Follicular Cel	Hyperplasia	Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:08

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8361

**TRT#:** 8

**SEX:** Male

**DAY ON TEST:** 450

**DOSE:** 30 PPM 10-10

**DISP:** Moribund Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO PITUITARY TUMOR

Animal Note: TGL1-6, PANCREAS IS WITHIN NORMAL LIMITS ON MICRO

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8362

TRT#: 8

SEX: Male

DAY ON TEST: 729

DOSE: 30 PPM 10-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Lung	Nose	Pancreas	Parathyroid Gland
Pituitary Gland	Prostate	Salivary Glands	Skin
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder			

OBSERVATIONS

Adrenal Gland	Cortex	Vacuolization Cytoplasmic	Mild
Heart		Degeneration	Chronic, Moderate
Islets, Pancreatic		Hyperplasia	Mild
Kidney		Nephropathy	Chronic, Mild
Liver		Clear Cell Focus	
		Degeneration	Cystic, Mild
		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Mild
		Hypertrophy	Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Note: HEPATOCLR ADEN TGLs = 1-11,2-4,3-4			
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Mild
Preputial Gland		Inflammation	Chronic Active, Mild
Spleen		Leukemia Mononuclear	
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA TGLs = 4-10			
Thyroid Gland	C Cell	Hyperplasia	Minimal

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8363

TRT#: 8

SEX: Male

DAY ON TEST: 461

DOSE: 30 PPM 10-10

DISP: Natural Death

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Brain	Epididymis	Esophagus
Intestine Large - Cecum	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Nose	Pancreas
Parathyroid Gland	Pituitary Gland	Prostate	Salivary Glands
Skin	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder		

AUTO PRECLUDES DIAG.

Intestine Large - Colon

OBSERVATIONS

Adrenal Gland	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
Bone Marrow	Femoral	Leukemia Mononuclear	
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Moderate
Liver	Bile Duct	Hyperplasia	Moderate
		Infarct	Moderate
		Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 2-4		
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Preputial Gland		Inflammation	Chronic Active, Moderate
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-11 ]			
Testes	Interstit Cell	Adenoma	
	Interstit Cell	Hyperplasia	Mild
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: CAUSE OF DEATH, LEUKEMIA MONONUCLEAR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8364

TRT#: 8

SEX: Male

DAY ON TEST: 581

DOSE: 30 PPM 10-10

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Eye	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Nose	Pancreas
Parathyroid Gland	Pituitary Gland	Prostate	Salivary Glands
Skin	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder		

OBSERVATIONS

Adrenal Gland	Capsule, Spindle Cell Cortex	Hyperplasia Vacuolization Cytoplasmic	Mild Mild
Heart		Degeneration	Chronic, Moderate
Kidney		Nephropathy	Chronic, Mild
Liver		Eosinophilic Focus	Marked
	Bile Duct	Hyperplasia	Marked
	Oval Cell	Hyperplasia	Mild
		Hypertrophy	Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Note: LEUKEMIA MONUC TGLs = 2-4			
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Mild
Preputial Gland		Inflammation	Chronic Active, Mild
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-11 ]			
Testes	Bilateral, Interstit Cell	Adenoma	
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

Animal Note: BOTH EYES ARE NORMAL ON MICRO

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:08

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8364

**TRT#:** 8

**DOSE:** 30 PPM 10-10

**SEX:** Male

**DISP:** Moribund Sacrifice

**DAY ON TEST:** 581

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8365

TRT#: 8

SEX: Male

DAY ON TEST: 637

DOSE: 30 PPM 10-10

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Brain
Epididymis	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lymph Node	Nose	Pancreas
Parathyroid Gland	Salivary Glands	Skin	Stomach - Forestomach
Stomach - Glandular	Trachea	Urinary Bladder	

MISSING

Thymus

OBSERVATIONS

Bone Marrow	Femoral	Leukemia Mononuclear	
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Mild
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
		Hepatocellular Carcinoma	
	Bile Duct	Hyperplasia	Marked
	Oval Cell	Hyperplasia	Marked
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Minimal
Note: HEPATOCLR ADEN TGLs = 3-4,4-4,5-4			
Lung		Leukemia Mononuclear	
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Pituitary Gland	Pars Distalis	Hyperplasia	Mild
Preputial Gland		Inflammation	Chronic Active, Mild
Prostate		Inflammation	Chronic Active, Mild
		Metaplasia	Squamous, Mild
Spleen		Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 2-1			

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:08

**First Dose M/F:** NA / NA

**Lab:** BAT

---

**ANIMAL ID:** 8365

**TRT#:** 8

**SEX:** Male

**DAY ON TEST:** 637

**DOSE:** 30 PPM 10-10

**DISP:** Moribund Sacrifice

**HISTO:**

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

Testes

Bilateral, Interstit Cell

Adenoma

Thyroid Gland

C Cell

Hyperplasia

Moderate

---

**PRIMARY CAUSE OF DEATH**

-

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

Animal Note: TGL6-11, THIS IS SMALL EXTRA SPENIC NODULE, NOT LYMPH NODE

Animal Note: TGL1-12, PENIS IS NORMAL, NOT SIGNIFICANT LESION

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8366

TRT#: 8

SEX: Male

DAY ON TEST: 729

DOSE: 30 PPM 10-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Brain	Epididymis
Esophagus	Heart	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lung	Lymph Node	Nose
Parathyroid Gland	Pituitary Gland	Prostate	Salivary Glands
Skin	Stomach - Forestomach	Stomach - Glandular	Trachea
Urinary Bladder			

MISSING

Thymus

OBSERVATIONS

Adrenal Gland	Medulla	Pheochromocytoma Benign	
	Cortex	Vacuolization Cytoplasmic	Mild
Note: PHEOCHROM BGN TGLs = 5-7			
Kidney		Nephropathy	Chronic, Mild
Liver		Basophilic Focus	Mild
		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Mild
		Hypertrophy	Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Note: HEPATOCLR ADEN TGLs = 2-11,3-4,4-4			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Mild
Preputial Gland		Inflammation	Chronic Active, Mild
Spleen		Leukemia Mononuclear	
Testes	Bilateral, Interstit Cell	Adenoma	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:08

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8366

**TRT#:** 8

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** 30 PPM 10-10

**DISP:** Terminal Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

Note: ADENOMA TGLs = 1-10

Thyroid Gland

C Cell

Hyperplasia

Mild

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PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8367

TRT#: 8

SEX: Male

DAY ON TEST: 730

DOSE: 30 PPM 10-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lymph Node	Nose	Parathyroid Gland
Pituitary Gland	Prostate	Salivary Glands	Stomach - Forestomach
Stomach - Glandular	Trachea	Urinary Bladder	

MISSING

Thymus

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
Heart		Degeneration	Chronic, Moderate
Kidney		Nephropathy	Chronic, Moderate
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Mild
		Hypertrophy	Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Moderate
Note: HEPATOCLR ADEN TGLs = 5-4,6-4,5-14,6-14,5-15,6-15			
Lung	Alveolar Epith	Hyperplasia	Moderate
	Interstitium	Inflammation	Chronic Active, Moderate
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Mild
Preputial Gland		Inflammation	Chronic Active, Moderate
Skin		Squamous Cell Papilloma	
Note: PAPILLOMA SQUA TGLs = 1-11			
Spleen		Leukemia Mononuclear	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:08

**First Dose M/F:** NA / NA

**Lab:** BAT

---

**ANIMAL ID:** 8367

**TRT#:** 8

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** 30 PPM 10-10

**DISP:** Terminal Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

[ Leukemia Mononuclear TGLS = 4-13 ]

Stomach	Forestomach	Acanthosis	Moderate
Note: ACANTHOSIS TGLs = 7-16			
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA TGLs = 2-10,3-12			
Thyroid Gland	C Cell	Hyperplasia	Moderate

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**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8368

TRT#: 8

SEX: Male

DAY ON TEST: 730

DOSE: 30 PPM 10-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Lung	Nose	Pancreas	Parathyroid Gland
Pituitary Gland	Preputial Gland	Prostate	Salivary Glands
Skin	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder		

OBSERVATIONS

Adrenal Gland	Cortex	Vacuolization Cytoplasmic	Mild
Epididymis		Inflammation	Chronic Active, Mild
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Moderate
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Note: HEPATOCLR ADEN TGLs = 3-11,4-11,4-4			
Lymph Node	Mandibular	Leukemia Mononuclear	
Spleen		Leukemia Mononuclear	
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA TGLs = 1-10			
Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL2-10, TESTIS WITHIN NORMAL LIMITS

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8369

TRT#: 8

SEX: Male

DAY ON TEST: 730

DOSE: 30 PPM 10-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Epididymis	Esophagus	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Lymph Node	Nose
Parathyroid Gland	Pituitary Gland	Prostate	Salivary Glands
Skin	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder		

OBSERVATIONS

Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Moderate
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
		Hepatocellular Carcinoma	
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Minimal
Note: HEPATOCLR ADEN TGLs = 4-11			
Note: HEPATOCLR CARC TGLs = 4-11			
Lung		Leukemia Mononuclear	
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Pancreas	Acinus	Atrophy	Moderate
Preputial Gland	Duct	Dilatation	Moderate
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-12 ]			
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA TGLs = 2-10,3-10			
Thyroid Gland	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:08

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8369

**TRT#:** 8

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** 30 PPM 10-10

**DISP:** Terminal Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Animal Note: TGL3-10, TESTIS WITHIN NORMAL LIMITS, NSL

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8370

TRT#: 8

SEX: Male

DAY ON TEST: 575

DOSE: 30 PPM 10-10

DISP: Moribund Sacrifice

HISTO:

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Heart	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Parathyroid Gland	Pituitary Gland
Prostate	Salivary Glands	Skin	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	Urinary Bladder

**OBSERVATIONS**

Adrenal Gland	Cortex	Vacuolization Cytoplasmic	Mild
Kidney		Nephropathy	Chronic, Moderate
Liver		Eosinophilic Focus	Moderate
	Bile Duct	Hepatocellular Carcinoma	Marked
	Oval Cell	Hyperplasia	Moderate
		Hyperplasia	
		Leukemia Mononuclear	
Note: HEPATOCLR CARC	TGLs = 3-12		
Note: LEUKEMIA MONUC	TGLs = 2-4,2-12		
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Nose	Mucosa	Inflammation	Chronic Active, Mild
Pancreas	Acinus	Atrophy	Mild
Preputial Gland		Inflammation	Chronic Active, Mild
Spleen		Leukemia Mononuclear	
		[ Leukemia Mononuclear TGLS = 1-11 ]	
Testes	Bilateral, Interstit Cell	Adenoma	
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA AND LIVER TUMORS

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8371

TRT#: 8

SEX: Male

DAY ON TEST: 731

DOSE: 30 PPM 10-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex  
Brain  
Intestine Large - Colon  
Intestine Small - Jejunum  
Parathyroid Gland  
Stomach - Forestomach  
Urinary Bladder

Adrenal Gland - Medulla  
Epididymis  
Intestine Large - Rectum  
Lung  
Prostate  
Stomach - Glandular

Bone  
Esophagus  
Intestine Small - Duodenum  
Lymph Node  
Salivary Glands  
Thymus

Bone Marrow  
Intestine Large - Cecum  
Intestine Small - Ileum  
Pancreas  
Skin  
Trachea

OBSERVATIONS

Heart  
Islets, Pancreatic  
Kidney  
Liver

Degeneration  
Hyperplasia  
Nephropathy  
Basophilic Focus  
Eosinophilic Focus  
Hepatocellular Adenoma  
Hyperplasia  
Hyperplasia  
Hypertrophy  
Leukemia Mononuclear

Chronic, Mild  
Mild  
Chronic, Moderate  
Minimal  
Marked  
Multiple  
Moderate  
Mild  
Mild

Bile Duct  
Oval Cell

Note: HEPATOCLR ADEN TGLs = 3-4,4-4

Lymph Node

Note: MANDIBULAR LN NORMAL

Mammary Gland

Nose

Mucosa  
Pars Distalis  
Duct

Pituitary Gland

Preputial Gland

Hyperplasia  
Inflammation  
Adenoma  
Dilatation  
Inflammation  
Leukemia Mononuclear

Cystic, Mild  
Chronic Active, Mild  
Moderate  
Chronic Active, Mild

Spleen

Testes

Bilateral, Interstit Cell

Note: ADENOMA TGLs = 1-10,2-10

Thyroid Gland

C Cell

Hyperplasia

Moderate

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:08

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8371

**TRT#:** 8

**SEX:** Male

**DAY ON TEST:** 731

**DOSE:** 30 PPM 10-10

**DISP:** Terminal Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8372

TRT#: 8

SEX: Male

DAY ON TEST: 731

DOSE: 30 PPM 10-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Heart	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Lymph Node	Nose
Parathyroid Gland	Pituitary Gland	Prostate	Salivary Glands
Skin	Stomach - Forestomach	Stomach - Glandular	Trachea
Urinary Bladder			

MISSING

Thymus

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
Kidney		Nephropathy	Chronic, Moderate
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
		Hepatocellular Carcinoma	Multiple
	Bile Duct	Hyperplasia	Marked
	Oval Cell	Hyperplasia	Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Note: HEPATOCLR ADEN	TGLs = 4-4,5-4,5-11		
Note: HEPATOCLR CARC	TGLs = 5-4,5-11		
Lung		Leukemia Mononuclear	
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Mild
		Leukemia Mononuclear	
Preputial Gland		Carcinoma	
	Duct	Dilatation	Moderate
Note: CARCINOMA	TGLs = 2-10		

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:08

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8372

**TRT#:** 8

**SEX:** Male

**DAY ON TEST:** 731

**DOSE:** 30 PPM 10-10

**DISP:** Terminal Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Spleen		Fibrosis	Mild
		Leukemia Mononuclear	
[ Fibrosis TGLS = 3-12 ]			
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA TGLs = 1-10			
Thyroid Gland	C Cell	Hyperplasia	Moderate

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**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8373

TRT#: 8

SEX: Male

DAY ON TEST: 731

DOSE: 30 PPM 10-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lung	Nose	Parathyroid Gland
Prostate	Salivary Glands	Skin	Stomach - Forestomach
Stomach - Glandular	Trachea	Urinary Bladder	

MISSING

Thymus

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
Heart		Degeneration	Chronic, Mild
Kidney	Renal Tubule	Adenoma	
		Nephropathy	Chronic, Marked
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
		Hepatocellular Carcinoma	Multiple
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Moderate
		Hypertrophy	Mild
		Vacuolization Cytoplasmic	Mild
Note: HEPATOCLR CARC	TGLs = 4-4,4-12		
Note: HEPATOCLR ADEN	TGLs = 4-4,4-12		
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Mild
Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
Preputial Gland		Inflammation	Chronic Active, Mild
Spleen		Fibrosis	Mild
		Leukemia Mononuclear	
Note: FIBROSIS	TGLs = 3-11		

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:08

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8373

**TRT#:** 8

**SEX:** Male

**DAY ON TEST:** 731

**DOSE:** 30 PPM 10-10

**DISP:** Terminal Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA TGLs = 1-10			
Thyroid Gland	C Cell	Hyperplasia	Moderate

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**PRIMARY CAUSE OF DEATH**

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Animal Note: TGL2-10, TESTIS WITHIN NOTMAL LIMITS FOR SIZE

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8374

TRT#: 8

SEX: Male

DAY ON TEST: 731

DOSE: 30 PPM 10-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lung	Nose	Parathyroid Gland
Preputial Gland	Prostate	Salivary Glands	Skin
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder			

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Moderate
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Minimal
		Hypertrophy	Minimal
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Note: HEPATOCLR ADEN TGLs = 2-4,3-12,4-11,5-11,6-12			
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Minimal
Pancreas	Acinus	Atrophy	Mild
Pituitary Gland	Pars Distalis	Hyperplasia	Mild
Spleen		Leukemia Mononuclear	
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA TGLs = 1-10			
Thyroid Gland	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8375

TRT#: 8

SEX: Male

DAY ON TEST: 657

DOSE: 30 PPM 10-10

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Esophagus	Eye	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Nose	Parathyroid Gland
Preputial Gland	Prostate	Salivary Glands	Skin
Stomach - Glandular	Trachea	Urinary Bladder	

OBSERVATIONS

Adrenal Gland	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
Bone Marrow	Femoral	Leukemia Mononuclear	
Brain		Leukemia Mononuclear	
Epididymis		Leukemia Mononuclear	
Heart		Leukemia Mononuclear	
Kidney		Leukemia Mononuclear	
Liver		Nephropathy	Chronic, Moderate
		Eosinophilic Focus	Moderate
	Bile Duct	Hyperplasia	Marked
	Oval Cell	Hyperplasia	Moderate
		Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 3-4		
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
	Mesenteric	Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 2-12		
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Mild
Pituitary Gland	Pars Distalis	Hyperplasia	Moderate
		Leukemia Mononuclear	
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-11 ]			
Stomach	Forestomach	Leukemia Mononuclear	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:08

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8375

**TRT#:** 8

**SEX:** Male

**DAY ON TEST:** 657

**DOSE:** 30 PPM 10-10

**DISP:** Moribund Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

Note: LEUKEMIA MONUC TGLs = 5-12

Testes

Bilateral, Interstit Cell

Adenoma

Thymus

Leukemia Mononuclear

Thyroid Gland

Follicle

Cyst

C Cell

Hyperplasia

Moderate

Leukemia Mononuclear

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**PRIMARY CAUSE OF DEATH**

-

Animal Note: EYE IS NORMAL ON MICRO

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8376

TRT#: 8

SEX: Male

DAY ON TEST: 686

DOSE: 30 PPM 10-10

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Lymph Node	Mesentery	Nose	Parathyroid Gland
Prostate	Salivary Glands	Skin	Spleen
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder			

MISSING

Intestine Large - Rectum

OBSERVATIONS

Epididymis		Inflammation	Chronic Active, Moderate
Heart	Atrium	Thrombosis	
Note: THROMBUS	TGLs = 7-11		
Kidney		Nephropathy	Chronic, Mild
Liver	Bile Duct	Hepatocellular Carcinoma	Multiple
		Hyperplasia	Marked
		Hypertrophy	Marked
		Infarct	Marked
		Vacuolization Cytoplasmic	Moderate
Note: HEPATOCLR CARC	TGLs = 3-14,4-13,5-12		
Note: INFARCT	TGLs = 2-4,3-14,4-13,5-12		
Lung		Hepatocellular Carcinoma	Metastatic (Liver)
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Mild
Pituitary Gland	Pars Distalis	Hyperplasia	Mild
Preputial Gland		Inflammation	Chronic Active, Mild
Testes	Seminif Tub	Atrophy	Marked
	Interstit Cell	Hyperplasia	Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:08

**First Dose M/F:** NA / NA

**Lab:** BAT

---

**ANIMAL ID:** 8376

**TRT#:** 8

**SEX:** Male

**DAY ON TEST:** 686

**DOSE:** 30 PPM 10-10

**DISP:** Moribund Sacrifice

**HISTO:**

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

Note: ATROPHY      TGLs = 1-10

Thyroid Gland

C Cell

Hyperplasia

Mild

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**PRIMARY CAUSE OF DEATH**

-

Animal Note: TGL8, MESENTERIC LYMPH NODE MISSING AT TRIM

Animal Note: MORIBUND SACRIFICE DUE TO LIVER TUMORS

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8377

TRT#: 8

SEX: Male

DAY ON TEST: 674

DOSE: 30 PPM 10-10

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Brain	Epididymis
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Nose
Pancreas	Parathyroid Gland	Prostate	Salivary Glands
Skin	Stomach - Forestomach	Stomach - Glandular	Trachea
Urinary Bladder			

MISSING

Thymus

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
Bone Marrow	Femoral	Leukemia Mononuclear	
Heart		Degeneration	Chronic, Mild
Islets, Pancreatic		Adenoma	
Kidney		Nephropathy	Chronic, Mild
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
		Hepatocellular Carcinoma	
	Bile Duct	Hyperplasia	Moderate
		Leukemia Mononuclear	
		Necrosis	Mild
Note: HEPATOCLR CARC	TGLs = 4-14		
Note: HEPATOCLR ADEN	TGLs = 3-4,3-13,3-14,4-4,4-13,4-14		
Lung	Bronchiole, Epithelium	Hyperplasia	Marked
Lymph Node	Mandibular	Leukemia Mononuclear	
Pituitary Gland	Pars Distalis	Hyperplasia	Moderate
Preputial Gland		Carcinoma	
Note: CARCINOMA	TGLs = 1-12		
Spleen		Leukemia Mononuclear	
	[ Leukemia Mononuclear TGLS = 2-11 ]		
Testes	Bilateral, Interstit Cell	Adenoma	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:08

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8377

**TRT#:** 8

**SEX:** Male

**DAY ON TEST:** 674

**DOSE:** 30 PPM 10-10

**DISP:** Moribund Sacrifice

**HISTO:**

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

Thyroid Gland

C Cell

Hyperplasia

Moderate

---

**PRIMARY CAUSE OF DEATH**

-

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Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA AND PREPUTIAL LESION

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\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8378

TRT#: 8

SEX: Male

DAY ON TEST: 735

DOSE: 30 PPM 10-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Heart	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Islets, Pancreatic	Lung	Nose	Pancreas
Parathyroid Gland	Salivary Glands	Skin	Stomach - Forestomach
Stomach - Glandular	Trachea	Urinary Bladder	

MISSING

Thymus

OBSERVATIONS

Adrenal Gland Note: PHEOCHROM BGN TGLs = 9-7	Medulla	Pheochromocytoma Benign	
Intestine Small Note: LEIOMYOMA TGLs = 8-11	Jejunum	Leiomyoma	
Kidney		Nephropathy	Chronic, Moderate
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
		Hepatocellular Carcinoma	
	Bile Duct	Hyperplasia	Mild
	Oval Cell	Hyperplasia	Minimal
		Leukemia Mononuclear	
Note: HEPATOCLR CARC TGLs = 5-4			
Note: HEPATOCLR ADEN TGLs = 5-4,7-14			
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Mild
Pituitary Gland Note: [ ADENOMA ] TGLs = 4-7	Pars Distalis	Adenoma	
Preputial Gland Note: INFLAMMATION TGLs = 1-13		Inflammation	Chronic Active, Marked
Prostate		Metaplasia	Squamous, Mild
Spleen		Leukemia Mononuclear	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:08

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8378

**TRT#:** 8

**SEX:** Male

**DAY ON TEST:** 735

**DOSE:** 30 PPM 10-10

**DISP:** Terminal Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

[ Leukemia Mononuclear TGLS = 3-12 ]

Testes

Interstit Cell

Adenoma

Note: ADENOMA

TGLs = 2-10

Thyroid Gland

C Cell

Hyperplasia

Moderate

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PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8379

TRT#: 8

SEX: Male

DAY ON TEST: 596

DOSE: 30 PPM 10-10

DISP: Natural Death

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Brain	Epididymis
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Nose	Parathyroid Gland	Pituitary Gland	Prostate
Salivary Glands	Skin	Stomach - Forestomach	Stomach - Glandular
Trachea	Urinary Bladder		

MISSING

Thymus

OBSERVATIONS

Adrenal Gland	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
Heart		Leukemia Mononuclear	
Kidney		Nephropathy	Chronic, Moderate
Liver	Bile Duct	Cyst	
		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Note: HEPATOCLR ADEN TGLs = 5-4,5-12			
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Marked
Preputial Gland		Carcinoma	
Note: CARCINOMA TGLs = 1-11			
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 4-1 ]			
Testes	Interstit Cell	Adenoma	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:08

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8379

**TRT#:** 8

**SEX:** Male

**DAY ON TEST:** 596

**DOSE:** 30 PPM 10-10

**DISP:** Natural Death

**HISTO:**

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

Seminif Tub

Atrophy

Marked

Note: ATROPHY TGLs = 2-10

Note: ADENOMA TGLs = 3-10

Thyroid Gland

C Cell

Hyperplasia

Mild

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**PRIMARY CAUSE OF DEATH**

-

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Animal Note: TGL1-11, SKIN MASS IS PREPUTIAL GLAND TUMOR

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8380

TRT#: 8

SEX: Male

DAY ON TEST: 695

DOSE: 30 PPM 10-10

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Brain	Epididymis
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Nose	Parathyroid Gland	Pituitary Gland	Prostate
Salivary Glands	Stomach - Forestomach	Stomach - Glandular	Trachea
Urinary Bladder			

MISSING

Thymus

OBSERVATIONS

Adrenal Gland	Cortex Medulla	Leukemia Mononuclear Leukemia Mononuclear Degeneration	Chronic, Mild
Heart		Leukemia Mononuclear	
Kidney		Nephropathy	Chronic, Moderate
Liver		Eosinophilic Focus Hepatocellular Adenoma Hepatocellular Carcinoma	Marked Multiple
	Bile Duct Oval Cell	Hyperplasia Hyperplasia Leukemia Mononuclear Vacuolization Cytoplasmic	Marked Mild Minimal
Note: LEUKEMIA MONUC	TGLs = 4-4,4-11		
Note: HEPATOCLR CARC	TGLs = 5-11		
Note: HEPATOCLR ADEN	TGLs = 4-4,4-11,5-4,5-11,6-4,6-11		
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Pancreas	Acinus	Atrophy	Mild
Preputial Gland		Inflammation	Chronic Active, Mild
Skin	Subcut Tiss	Fibroma	
Note: FIBROMA	TGLs = 1-12		

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:08

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8380

**TRT#:** 8

**SEX:** Male

**DAY ON TEST:** 695

**DOSE:** 30 PPM 10-10

**DISP:** Moribund Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

Spleen

Leukemia Mononuclear

[ Leukemia Mononuclear TGLS = 2-1 ]

Testes

Bilateral, Interstit Cell

Adenoma

Thyroid Gland

C Cell

Hyperplasia

Moderate

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**PRIMARY CAUSE OF DEATH**

-

Animal Note: TGL3-10, TESTIS SIZE WITHIN NORMAL LIMITS

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA AND LIVER TUMORS

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8381

TRT#: 8

SEX: Male

DAY ON TEST: 735

DOSE: 30 PPM 10-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Epididymis	Esophagus	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Lung	Nose
Parathyroid Gland	Prostate	Salivary Glands	Skin
Spleen	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder		

OBSERVATIONS

Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Moderate
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
		Hepatocellular Carcinoma	Multiple
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Mild
		Vacuolization Cytoplasmic	Mild
Note: HEPATOCLR ADEN TGLs = 7-4,7-11,7-12,7-13 [ Hepatocellular Adenoma TGLS = 3-12,4-11,5-13 ] [ Hyperplasia TGLS = 6-4,6-11,6-12,6-13 ]			
Lymph Node	Mandibular	Leukemia Mononuclear	
Pancreas	Acinus	Atrophy	Moderate
Pituitary Gland	Pars Distalis	Hyperplasia	Moderate
Preputial Gland		Inflammation	Chronic Active, Mild
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA TGLs = 1-10			
Thyroid Gland	C Cell	Adenoma	
	C Cell	Carcinoma	
	C Cell	Hyperplasia	Mild
Note: ADENOMA TGLs = 8-7			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)

**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:08

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8381

**TRT#:** 8

**SEX:** Male

**DAY ON TEST:** 735

**DOSE:** 30 PPM 10-10

**DISP:** Terminal Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Animal Note: TGL2-10, TESTIS WITHIN NORMAL LIMITS

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\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8382

TRT#: 8

SEX: Male

DAY ON TEST: 581

DOSE: 30 PPM 10-10

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Brain	Epididymis
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Nose	Pancreas	Parathyroid Gland	Pituitary Gland
Prostate	Salivary Glands	Skin	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	Urinary Bladder

OBSERVATIONS

Adrenal Gland	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
Heart		Degeneration	Chronic, Mild
		Leukemia Mononuclear	
Kidney		Nephropathy	Chronic, Marked
Liver		Eosinophilic Focus	Moderate
		Hepatocellular Adenoma	Multiple
		Hepatocellular Carcinoma	
	Bile Duct	Hyperplasia	Marked
	Oval Cell	Hyperplasia	Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Note: LEUKEMIA MONUC	TGLs = 2-4		
Note: HEPATOCLR ADEN	TGLs = 3-12,4-4		
Note: HEPATOCLR CARC	TGLs = 3-12		
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Mild
Preputial Gland		Inflammation	Chronic Active, Mild
Spleen		Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 1-11		
Testes	Interstit Cell	Adenoma	
	Interstit Cell	Hyperplasia	Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:08

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8382

**TRT#:** 8

**SEX:** Male

**DAY ON TEST:** 581

**DOSE:** 30 PPM 10-10

**DISP:** Moribund Sacrifice

**HISTO:**

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

Thyroid Gland

C Cell

Hyperplasia

Moderate

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**PRIMARY CAUSE OF DEATH**

-

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Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8383

TRT#: 8

SEX: Male

DAY ON TEST: 642

DOSE: 30 PPM 10-10

DISP: Natural Death

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Brain	Epididymis	Esophagus
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Nose
Parathyroid Gland	Pituitary Gland	Prostate	Salivary Glands
Skin	Stomach - Glandular	Trachea	Urinary Bladder

MISSING

Thymus

OBSERVATIONS

Adrenal Gland	Cortex	Hypertrophy	Mild
	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
Bone Marrow	Femoral	Leukemia Mononuclear	
Heart		Degeneration	Chronic, Mild
		Leukemia Mononuclear	
Kidney		Leukemia Mononuclear	
		Nephropathy	Chronic, Marked
Note: NEPHROPATHY	TGLs = 3-1		
Liver		Eosinophilic Focus	Marked
	Bile Duct	Hyperplasia	Marked
	Oval Cell	Hyperplasia	Minimal
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Moderate
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Marked
Pancreas	Acinus	Atrophy	Mild
Preputial Gland	Duct	Dilatation	Moderate
		Inflammation	Chronic Active, Moderate
Spleen		Leukemia Mononuclear	
	[ Leukemia Mononuclear TGLS = 4-11 ]		

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8383

TRT#: 8

SEX: Male

DAY ON TEST: 642

DOSE: 30 PPM 10-10

DISP: Natural Death

HISTO:

**ORGAN AND ACCOUNTABLE SITE STATUS**

Stomach	Forestomach	Acanthosis	Mild
	Forestomach	Ulcer	Moderate
Note: ULCER	TGLs = 5-12		
Testes	Interstit Cell	Adenoma	
	Seminif Tub	Atrophy	Marked
	Interstit Cell	Hyperplasia	Mild
Note: ADENOMA	TGLs = 1-10		
Note: ATROPHY	TGLs = 2-10		
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: CAUSE OF DEATH, LEUKEMIA MONONUCLEAR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8384

TRT#: 8

SEX: Male

DAY ON TEST: 515

DOSE: 30 PPM 10-10

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Brain	Epididymis	Esophagus
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Nose
Pancreas	Parathyroid Gland	Pituitary Gland	Prostate
Salivary Glands	Skin	Stomach - Forestomach	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	

OBSERVATIONS

Adrenal Gland	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
Bone Marrow	Femoral	Leukemia Mononuclear	
Heart		Leukemia Mononuclear	
Kidney		Nephropathy	Chronic, Mild
Liver		Eosinophilic Focus	Mild
	Bile Duct	Hepatocellular Adenoma	Multiple
		Hyperplasia	Marked
		Leukemia Mononuclear	
Note: [ HEPATOCLR ADEN ] TGLs = 2-4			
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Preputial Gland		Inflammation	Chronic Active, Mild
Spleen		Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 1-11			
Testes	Interstit Cell	Adenoma	
	Interstit Cell	Hyperplasia	Mild
Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA

Animal Note: TGL3, PALE SLIN IS PART OF LEUKEMIA

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8385

TRT#: 8

SEX: Male

DAY ON TEST: 735

DOSE: 30 PPM 10-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Brain	Epididymis
Esophagus	Heart	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lymph Node	Nose	Pancreas
Prostate	Salivary Glands	Skin	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	

MISSING

Parathyroid Gland

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Medulla	Hyperplasia	Minimal
	Cortex	Vacuolization Cytoplasmic	Mild
Kidney		Nephropathy	Chronic, Marked
Note: NEPHROPATHY	TGLs = 2-1		
Liver		Basophilic Focus	Minimal
		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
		Hepatocellular Carcinoma	
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Mild
		Vacuolization Cytoplasmic	Mild
Note: HEPATOCLR CARC	TGLs = 4-13		
Note: HEPATOCLR ADEN	TGLs = 5-14,6-15,7-4		
Lung		Hepatocellular Carcinoma	Metastatic (Liver)
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Pituitary Gland	Pars Distalis	Hyperplasia	Moderate
Preputial Gland		Inflammation	Chronic Active, Mild
Spleen		Fibrosis	Mild
Note: FIBROSIS	TGLs = 3-11		

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:08

**First Dose M/F:** NA / NA

**Lab:** BAT

**ANIMAL ID:** 8385

**TRT#:** 8

**SEX:** Male

**DAY ON TEST:** 735

**DOSE:** 30 PPM 10-10

**DISP:** Terminal Sacrifice

**HISTO:**

**ORGAN AND ACCOUNTABLE SITE STATUS**

Stomach	Forestomach	Acanthosis	Mild
	Forestomach	Squamous Cell Carcinoma	
Note: SQUAM CEL CARC TGLs = 8-12			
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA TGLs = 1-10			
Thyroid Gland	C Cell	Hyperplasia	Mild
	Follicular Cel	Hypertrophy	Mild
PRIMARY CAUSE OF DEATH	-		

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8386

TRT#: 8

SEX: Male

DAY ON TEST: 729

DOSE: 30 PPM 10-10

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Brain	Epididymis
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Nose
Pancreas	Prostate	Salivary Glands	Skin
Urinary Bladder			

MISSING

Esophagus	Heart	Lung	Parathyroid Gland
Thymus	Thyroid Gland	Trachea	

OBSERVATIONS

Adrenal Gland	Medulla	Hyperplasia	Mild
	Cortex	Vacuolization Cytoplasmic	Mild
Kidney		Nephropathy	Chronic, Marked
Note: NEPHROPATHY TGLs = 4-1			
Liver		Eosinophilic Focus	Moderate
		Hepatocellular Adenoma	Multiple
		Hepatocellular Carcinoma	
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Note: HEPATOCLR CARC TGLs = 5-4			
Note: HEPATOCLR ADEN TGLs = 5-4			
Lymph Node	Mandibular, Sinus	Ectasia	Moderate
Mammary Gland		Hyperplasia	Cystic, Moderate
Pituitary Gland	Pars Distalis	Adenoma	
Note: ADENOMA TGLs = 1-7			
Preputial Gland		Inflammation	Chronic Active, Mild
Spleen		Leukemia Mononuclear	
Stomach	Forestomach	Acanthosis	Marked
	Glandular	Erosion	Moderate

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:08

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8386

**TRT#:** 8

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** 30 PPM 10-10

**DISP:** Moribund Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

Forestomach

Inflammation

Chronic Active, Minimal

Bilateral, Interstit Cell

Adenoma

Testes

Note: ADENOMA TGLs = 3-11

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**PRIMARY CAUSE OF DEATH**

-

Animal Note: NO THYMUS, TRACHEA, ESOPHAGUS, OR LUNG AT TRIM

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA AND LIVER TUMORS

Animal Note: THYROID AND PARA THYROID ALSO MISSING

Animal Note: TGL2-11, TESTIS IS WITHIN NORMAL LIMITS FOR SIZE

Animal Note: TGL6-6, MESENTERIC LN IS WITHIN NORMAL LIMITS FOR SIZE

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8387

TRT#: 8

SEX: Male

DAY ON TEST: 534

DOSE: 30 PPM 10-10

DISP: Moribund Sacrifice

HISTO:

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Adrenal Gland - Medulla	Bone	Brain	Epididymis
Esophagus	Heart	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Nose	Parathyroid Gland	Pituitary Gland
Preputial Gland	Salivary Glands	Skin	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	Urinary Bladder

**OBSERVATIONS**

Adrenal Gland	Cortex	Vacuolization Cytoplasmic	Mild
Bone Marrow	Femoral	Leukemia Mononuclear	
Kidney		Nephropathy	Chronic, Moderate
Liver		Eosinophilic Focus	Mild
	Bile Duct	Hyperplasia	Moderate
		Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 1-4,2-4			
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Moderate
Pancreas	Acinus	Atrophy	Mild
Prostate		Inflammation	Chronic Active, Mild
		Metaplasia	Squamous, Mild
Spleen		Leukemia Mononuclear	
Testes	Bilateral, Interstit Cell	Adenoma	
	Interstit Cell	Hyperplasia	Mild
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA

Animal Note: EYE DISCHARGE IS PORPHORIN, NSL

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8388

TRT#: 8

SEX: Male

DAY ON TEST: 726

DOSE: 30 PPM 10-10

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Eye	Heart
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Lymph Node
Nose	Parathyroid Gland	Salivary Glands	Stomach - Forestomach
Stomach - Glandular	Trachea		

MISSING

Thymus

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
Kidney		Nephropathy	Chronic, Marked
Note: NEPHROPATHY TGLs = 3-1			
Liver		Congestion	Moderate
		Hepatocellular Adenoma	Multiple
		Hepatocellular Carcinoma	Multiple
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Mild
		Vacuolization Cytoplasmic	Mild
[ Congestion TGLS = 6-12,6-13,7-12,7-13 ]			
[ Hepatocellular Adenoma TGLS = 8-13 ]			
Lung	Alveolar Epith	Hyperplasia	Minimal
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Pancreas	Acinus	Atrophy	Mild
Pituitary Gland	Pars Distalis	Adenoma	
	Pars Intermed	Adenoma	
Preputial Gland	Duct	Dilatation	Moderate
		Inflammation	Chronic Active, Moderate
Prostate		Inflammation	Chronic Active, Moderate
		Metaplasia	Squamous, Moderate

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8388

TRT#: 8

SEX: Male

DAY ON TEST: 726

DOSE: 30 PPM 10-10

DISP: Moribund Sacrifice

HISTO:

**ORGAN AND ACCOUNTABLE SITE STATUS**

Skin		Subcut Tiss	Fibroma	
Note: FIBROMA	TGLs = 1-11			
Spleen			Fibrosis	Mild
Note: FIBROSIS	TGLs = 2-14			
Testes		Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA	TGLs = 4-10			
Thyroid Gland		C Cell	Hyperplasia	Moderate
Urinary Bladder		Mucosa	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

Animal Note: RED EYE DISCHARGE IS DUE TO PORPHYRIN, NOT SIGNIFICANT

Animal Note: TGL5-10, TESTIS WITHIN NORMAL LIMITS FOR SIZE

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA AND LIVER TUMORS

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8389

TRT#: 8

SEX: Male

DAY ON TEST: 603

DOSE: 30 PPM 10-10

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Brain	Epididymis	Esophagus
Heart	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Nose	Parathyroid Gland
Pituitary Gland	Prostate	Salivary Glands	Skin
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder			

OBSERVATIONS

Adrenal Gland	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
	Cortex	Vacuolization Cytoplasmic	Moderate
Bone Marrow	Femoral	Leukemia Mononuclear	
Intestine Small	Jejunum	Leiomyoma	
Note: LEIOMYOMA	TGLs = 1-12		
Islets, Pancreatic		Hyperplasia	Mild
Kidney		Nephropathy	Chronic, Mild
Liver		Eosinophilic Focus	Marked
	Bile Duct	Hepatocellular Adenoma	
	Oval Cell	Hyperplasia	Moderate
		Hyperplasia	Moderate
		Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 2-4,2-13		
Note: HEPATOCLR ADEN	TGLs = 3-13		
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
	Mediastinal	Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 5-7		
Pancreas	Acinus	Atrophy	Mild
	Acinus	Hyperplasia	Mild
Preputial Gland		Inflammation	Chronic Active, Mild
Spleen		Leukemia Mononuclear	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:08

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8389

**TRT#:** 8

**SEX:** Male

**DAY ON TEST:** 603

**DOSE:** 30 PPM 10-10

**DISP:** Moribund Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

[ Leukemia Mononuclear TGLS = 4-11 ]

Testes

Bilateral, Interstit Cell

Adenoma

Thyroid Gland

C Cell

Adenoma

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**PRIMARY CAUSE OF DEATH**

-

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Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA AND LIVER TUMORS

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8390

TRT#: 8

SEX: Male

DAY ON TEST: 718

DOSE: 30 PPM 10-10

DISP: Natural Death

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Epididymis
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Nose
Parathyroid Gland	Prostate	Skin	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	Urinary Bladder

MISSING

Lymph Node	Salivary Glands
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OBSERVATIONS

Adrenal Gland	Cortex	Vacuolization Cytoplasmic	Moderate
Brain		Oligodendroglioma Malignant	
Note: OLIGODENDR MAL TGLs = 5-5			
Heart		Degeneration	Chronic, Moderate
Islets, Pancreatic		Hyperplasia	Moderate
Kidney		Nephropathy	Chronic, Moderate
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
		Hepatocellular Carcinoma	
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Moderate
Note: HEPATOCLR CARC TGLs = 4-12			
Lung		Leukemia Mononuclear	
Lymph Node			
Note: MANDIBULAR LN MISSING			
Mammary Gland		Hyperplasia	Cystic, Mild
Mesentery		Hemangiosarcoma	
Note: HEMANGIOSARC TGLs = 1-11,2-11			
Pancreas	Acinus	Atrophy	Moderate
Pituitary Gland	Pars Distalis	Adenoma	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:08

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8390

**TRT#:** 8

**SEX:** Male

**DAY ON TEST:** 718

**DOSE:** 30 PPM 10-10

**DISP:** Natural Death

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

Preputial Gland

Inflammation

Chronic Active, Mild

Spleen

Leukemia Mononuclear

Testes

Bilateral, Interstit Cell

Adenoma

Note: ADENOMA

TGLs = 3-10

Thyroid Gland

C Cell

Hyperplasia

Mild

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**PRIMARY CAUSE OF DEATH**

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Animal Note: CAUSE OF DEATH, BRAIN AND LIVER TUMORS PLUS LEUKEMIA

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Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8391

TRT#: 8

SEX: Male

DAY ON TEST: 605

DOSE: 30 PPM 10-10

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Brain	Epididymis	Esophagus
Intestine Large - Cecum	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Lymph Node	Nose
Pancreas	Parathyroid Gland	Pituitary Gland	Prostate
Salivary Glands	Skin	Stomach - Forestomach	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	

MISSING

Intestine Large - Colon

OBSERVATIONS

Adrenal Gland	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
Bone Marrow	Femoral	Leukemia Mononuclear	
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Moderate
Liver		Eosinophilic Focus	Moderate
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Mild
		Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 2-12		
Lung		Alveolar/Bronchiolar Adenoma	Multiple
		Leukemia Mononuclear	
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Preputial Gland		Inflammation	Chronic Active, Mild
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-11 ]			
Testes	Bilateral, Interstit Cell	Adenoma	
	Interstit Cell	Hyperplasia	Mild
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:08

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8391

**TRT#:** 8

**SEX:** Male

**DAY ON TEST:** 605

**DOSE:** 30 PPM 10-10

**DISP:** Moribund Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8392

TRT#: 8

SEX: Male

DAY ON TEST: 605

DOSE: 30 PPM 10-10

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Nose	Parathyroid Gland	Pituitary Gland
Prostate	Salivary Glands	Skin	Stomach - Forestomach
Stomach - Glandular	Trachea	Urinary Bladder	

OBSERVATIONS

Adrenal Gland	Medulla	Hyperplasia	Mild
Heart		Degeneration	Chronic, Minimal
Kidney		Nephropathy	Chronic, Mild
Liver		Eosinophilic Focus	Moderate
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Moderate
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Note: LEUKEMIA MONUC TGLs = 2-4			
Note: HEPATOCLR ADEN TGLs = 3-4			
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
	Mediastinal	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Mild
Preputial Gland		Inflammation	Chronic Active, Mild
Spleen		Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 1-1			
Testes	Bilateral, Interstit Cell	Adenoma	
Thymus		Leukemia Mononuclear	
Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:08

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8392

**TRT#:** 8

**SEX:** Male

**DAY ON TEST:** 605

**DOSE:** 30 PPM 10-10

**DISP:** Moribund Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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PRIMARY CAUSE OF DEATH

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Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8393

TRT#: 8

DOSE: 30 PPM 10-10

SEX: Male

DISP: Natural Death

DAY ON TEST: 679

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone Marrow	Brain	Epididymis
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Lung	Lymph Node	Nose	Pancreas
Pituitary Gland	Prostate	Salivary Glands	Skin
Stomach - Forestomach	Trachea	Urinary Bladder	

MISSING

Thymus

OBSERVATIONS

Adrenal Gland	Cortex	Adenoma	
	Cortex	Hypertrophy	Mild
Bone	Femur	Osteosarcoma	
Note: OSTEOSARC	TGLs = 3-12		
Heart		Degeneration	Chronic, Moderate
Kidney		Nephropathy	Chronic, Moderate
Liver		Eosinophilic Focus	Mild
		Fibrosis	Moderate
	Bile Duct	Hyperplasia	Mild
		Inflammation	Chronic, Multifocal, Mild
		Necrosis	Marked
		Vacuolization Cytoplasmic	Mild
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Parathyroid Gland		Adenoma	
Preputial Gland		Inflammation	Chronic Active, Mild
Spleen		Osteosarcoma	Metastatic (Bone)
Note: OSTEOSARC	TGLs = 7-11		
Stomach	Glandular	Ulcer	Mild
Note: ULCER	TGLs = 8-6		
Testes	Bilateral, Interstit Cell	Adenoma	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:08

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8393

**TRT#:** 8

**SEX:** Male

**DAY ON TEST:** 679

**DOSE:** 30 PPM 10-10

**DISP:** Natural Death

**HISTO:**

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

Note: ADENOMA TGLs = 4-10

Thyroid Gland

C Cell

Hyperplasia

Mild

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**PRIMARY CAUSE OF DEATH**

-

Animal Note: CAUSE OF DEATH, BONE TUMOR AND LEUKEMIA

Animal Note: TGL5-10, TESTIS WITHIN NORMAL LIMITS FOR SIZE

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8394

TRT#: 8

SEX: Male

DAY ON TEST: 708

DOSE: 30 PPM 10-10

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Intestine Large	Intestine Small
Islets, Pancreatic	Lung	Lymph Node	Nose
Parathyroid Gland	Pituitary Gland	Prostate	Salivary Glands
Skin	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder		

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
Heart		Degeneration	Chronic, Moderate
Kidney		Nephropathy	Chronic, Marked
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	
		Hepatocellular Carcinoma	
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Mild
		Hypertrophy	Mild
		Vacuolization Cytoplasmic	Mild
Note: HEPATOCLR CARC TGLs = 5-11			
Note: HEPATOCLR ADEN TGLs = 4-4			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Mild
Preputial Gland		Carcinoma	
Note: CARCINOMA TGLs = 1-12			
Spleen		Fibrosis	Moderate
[ Fibrosis TGLS = 2-1 ]			
Testes	Bilateral, Interstit Cell	Adenoma	
Thyroid Gland	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)

**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:08

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8394

**TRT#:** 8

**SEX:** Male

**DAY ON TEST:** 708

**DOSE:** 30 PPM 10-10

**DISP:** Moribund Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Animal Note: MORIBUND SACRIFICE DUE TO PREPUTIAL GLAND TUMOR

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\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8395

TRT#: 8

SEX: Male

DAY ON TEST: 736

DOSE: 30 PPM 10-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Epididymis	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lung	Lymph Node	Nose
Parathyroid Gland	Pituitary Gland	Prostate	Salivary Glands
Skin	Trachea	Urinary Bladder	

MISSING

Thymus

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
Heart		Degeneration	Chronic, Moderate
Kidney	Cortex	Cyst	
		Nephropathy	Chronic, Marked
Note: CYST TGLs = 7-12 [ Cyst TGLS = 6-1,6-12 ]			
Liver	Serosa	Eosinophilic Focus	Moderate
		Fibrosis	Moderate
		Hepatocellular Adenoma	Multiple
		Hepatocellular Carcinoma	Multiple
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Moderate
		Inflammation	Chronic, Multifocal, Mild
		Vacuolization Cytoplasmic	Mild
Note: HEPATOCLR ADEN TGLs = 3,4-4,13,14,15			
Note: HEPATOCLR CARC TGLs = 3-14,3-13,3-15			
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Marked
Preputial Gland		Inflammation	Chronic Active, Mild
Spleen		Fibrosis	Mild
Note: FIBROSIS TGLs = 2-11			

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:08

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8395

**TRT#:** 8

**SEX:** Male

**DAY ON TEST:** 736

**DOSE:** 30 PPM 10-10

**DISP:** Terminal Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Stomach	Forestomach	Acanthosis	Moderate
	Forestomach	Inflammation	Chronic Active, Moderate
Note: INFLAMMATION TGLs = 5-6			
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA TGLs = 1-10			
Thyroid Gland	C Cell	Hyperplasia	Mild
PRIMARY CAUSE OF DEATH	-		

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8396

TRT#: 8

SEX: Male

DAY ON TEST: 643

DOSE: 30 PPM 10-10

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Brain	Epididymis	Esophagus
Heart	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Nose	Pancreas	Parathyroid Gland	Preputial Gland
Prostate	Salivary Glands	Skin	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	

OBSERVATIONS

Adrenal Gland	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
Bone Marrow	Femoral	Leukemia Mononuclear	
Kidney		Nephropathy	Chronic, Mild
Liver		Eosinophilic Focus	Marked
	Bile Duct	Hepatocellular Adenoma	Multiple
	Oval Cell	Hyperplasia	Moderate
		Hyperplasia	Mild
		Leukemia Mononuclear	
Note: HEPATOCLR ADEN	TGLs = 2-4,3-4		
Note: LEUKEMIA MONUC	TGLs = 1-4		
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Pituitary Gland	Pars Distalis	Hyperplasia	Mild
Spleen		Leukemia Mononuclear	
Stomach	Forestomach	Erosion	Mild
Testes	Interstit Cell	Adenoma	
	Interstit Cell	Hyperplasia	Mild
Thyroid Gland	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

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Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8397

TRT#: 8

SEX: Male

DAY ON TEST: 695

DOSE: 30 PPM 10-10

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Brain	Epididymis	Esophagus
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Lymph Node
Nose	Parathyroid Gland	Pituitary Gland	Prostate
Salivary Glands	Skin	Stomach - Forestomach	Stomach - Glandular
Trachea	Urinary Bladder		

OBSERVATIONS

Adrenal Gland	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
Bone Marrow	Femoral	Leukemia Mononuclear	
Heart		Leukemia Mononuclear	
Kidney		Nephropathy	Chronic, Mild
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
		Hepatocellular Carcinoma	Multiple
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Moderate
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Moderate
Note: HEPATOCLR CARC TGLs = 3-12,3-13			
Note: LEUKEMIA MONUC TGLs = 2-4,2-12,2-13			
Lung		Hepatocellular Carcinoma	Metastatic (Liver)
		Leukemia Mononuclear	
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Mild
Preputial Gland		Inflammation	Chronic Active, Mild
Spleen		Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 1-11			

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:08

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8397

**TRT#:** 8

**SEX:** Male

**DAY ON TEST:** 695

**DOSE:** 30 PPM 10-10

**DISP:** Moribund Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Testes	Bilateral, Interstit Cell	Adenoma	
Thymus		Leukemia Mononuclear	
Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Moderate

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**PRIMARY CAUSE OF DEATH**

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Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA AND LIVER TUMORS

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8398

TRT#: 8

SEX: Male

DAY ON TEST: 462

DOSE: 30 PPM 10-10

DISP: Moribund Sacrifice

HISTO:

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Epididymis	Esophagus	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Lung	Lymph Node
Nose	Parathyroid Gland	Pituitary Gland	Salivary Glands
Skin	Spleen	Stomach - Forestomach	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	

**OBSERVATIONS**

Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Mild
Liver		Hypertrophy	Moderate
		Metaplasia	Minimal
Note: PANCREATIC ACINAR DIFFERENTIATION			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Pancreas	Acinus	Atrophy	Moderate
Preputial Gland		Carcinoma	
Note: CARCINOMA TGLs = 1-11			
Prostate		Inflammation	Chronic Active, Moderate
Testes	Interstitial Cell	Hyperplasia	Mild
Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO PREPUTIAL GLAND TUMOR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8399

TRT#: 8

SEX: Male

DAY ON TEST: 668

DOSE: 30 PPM 10-10

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla  
Esophagus  
Intestine Small - Ileum  
Pancreas  
Salivary Glands  
Urinary Bladder

Bone  
Intestine Large - Cecum  
Intestine Small - Jejunum  
Parathyroid Gland  
Skin

Brain  
Intestine Large - Colon  
Islets, Pancreatic  
Pituitary Gland  
Stomach - Glandular

Epididymis  
Intestine Large - Rectum  
Lung  
Preputial Gland  
Trachea

MISSING

Thymus

OBSERVATIONS

Adrenal Gland  
Bone Marrow  
Heart  
Intestine Small  
Kidney  
Liver

Cortex  
Femoral  
  
Duodenum  
  
  
Bile Duct  
Oval Cell

Hyperplasia  
Leukemia Mononuclear  
Degeneration  
Ulcer  
Nephropathy  
Eosinophilic Focus  
Hepatocellular Adenoma  
Hyperplasia  
Hyperplasia  
Leukemia Mononuclear  
Vacuolization Cytoplasmic

Mild  
  
Chronic, Mild  
Moderate  
Chronic, Moderate  
Marked  
Multiple  
Marked  
Marked  
  
Moderate

Note: HEPATOCLR ADEN TGLs = 2-11,2-12,3-11,3-12

Note: LEUKEMIA MONUC TGLs = 1-4,1-11,1-12

Lymph Node  
Mammary Gland  
Nose  
Prostate  
Spleen  
Stomach

Mandibular  
  
  
  
  
Forestomach  
Forestomach  
Forestomach

Leukemia Mononuclear  
Hyperplasia  
Hemorrhage  
Inflammation  
Leukemia Mononuclear  
Acanthosis  
Inflammation  
Ulcer

Cystic, Moderate  
Subacute, Moderate  
Chronic Active, Mild  
  
  
Mild  
Chronic Active, Moderate  
Moderate

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:08

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8399

**TRT#:** 8

**SEX:** Male

**DAY ON TEST:** 668

**DOSE:** 30 PPM 10-10

**DISP:** Moribund Sacrifice

**HISTO:**

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

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Testes

Interstit Cell

Adenoma

Seminif Tub

Atrophy

Moderate

Thyroid Gland

C Cell

Hyperplasia

Mild

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**PRIMARY CAUSE OF DEATH**

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**Animal Note:** MORIBUND SACRIFICE DUE TO LEUKEMIA AND LIVER TUMORS

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\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8400

TRT#: 8

SEX: Male

DAY ON TEST: 736

DOSE: 30 PPM 10-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Epididymis	Esophagus	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Lymph Node	Nose
Parathyroid Gland	Pituitary Gland	Prostate	Salivary Glands
Skin	Spleen	Stomach - Forestomach	Stomach - Glandular
Trachea	Urinary Bladder		

MISSING

Thymus

OBSERVATIONS

Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Mild
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
		Hepatocellular Carcinoma	Multiple
	Bile Duct	Hyperplasia	Mild
	Oval Cell	Hyperplasia	Mild
		Hypertrophy	Mild
		Vacuolization Cytoplasmic	Mild
Note: HEPATOCLR ADEN	TGLs = 3,4-4,11,12,13		
Note: HEPATOCLR CARC	TGLs = 3,4-11,12,13		
Lung		Alveolar/Bronchiolar Adenoma	
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Mild
Preputial Gland		Inflammation	Chronic Active, Mild
Testes	Bilateral, Interstit Cell	Adenoma	
Note: ADENOMA	TGLs = 1-10,2-10		
Thyroid Gland	C Cell	Adenoma	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:08

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8400

**TRT#:** 8

**SEX:** Male

**DAY ON TEST:** 736

**DOSE:** 30 PPM 10-10

**DISP:** Terminal Sacrifice

**HISTO:**

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

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C Cell

Hyperplasia

Mild

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**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8701

TRT#: 9

SEX: Female

DAY ON TEST: 729

DOSE: 0 PPM 0-0

DISP: Terminal Sacrifice

HISTO:

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Clitoral Gland	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Kidney	Lung	Lymph Node
Nose	Ovary	Pancreas	Parathyroid Gland
Salivary Glands	Skin	Spleen	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	Urinary Bladder

**OBSERVATIONS**

Adrenal Gland	Cortex	Hyperplasia	Mild
	Cortex	Hypertrophy	Mild
Heart		Degeneration	Chronic, Mild
Liver		Basophilic Focus	Mild
		Inflammation	Chronic Active, Mild
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Pituitary Gland	Pars Distalis	Adenoma	
Note: ADENOMA TGLs = 2-7			
Thyroid Gland	C Cell	Hyperplasia	Mild
Uterus		Polyp Stromal	
Note: POLYP STROMAL TGLs = 1-11			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8702

TRT#: 9

SEX: Female

DAY ON TEST: 729

DOSE: 0 PPM 0-0

DISP: Terminal Sacrifice

HISTO:

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Clitoral Gland	Esophagus	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Lung	Lymph Node
Nose	Ovary	Pancreas	Parathyroid Gland
Pituitary Gland	Salivary Glands	Skin	Spleen
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder			

**OBSERVATIONS**

Heart		Degeneration	Chronic, Mild
Kidney	Renal Tubule	Mineralization	Mild
Liver		Basophilic Focus	Minimal
		Inflammation	Chronic Active, Minimal
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Moderate
Thyroid Gland	C Cell	Hyperplasia	Mild
Uterus		Adenocarcinoma	
		Dilatation	Marked
Note: ADENOCARC TGLs = 1-11			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8703

TRT#: 9

SEX: Female

DAY ON TEST: 656

DOSE: 0 PPM 0-0

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Esophagus
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Lung
Lymph Node	Nose	Ovary	Pancreas
Parathyroid Gland	Salivary Glands	Spleen	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	Urinary Bladder
Uterus			

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Cortex	Vacuolization Cytoplasmic	Mild
Brain		Compression	
Clitoral Gland	Duct	Dilatation	Moderate
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Marked
Liver		Basophilic Focus	Minimal
		Hematopoietic Cell Proliferation	Moderate
		Necrosis	Minimal
		Vacuolization Cytoplasmic	Marked

Note: BASOPH FOCUS TGLs = 2-4

Lymph Node

Note: MANDIBULAR LN NORMAL

Mammary Gland

Pituitary Gland

Pars Distalis

Note: ADENOMA TGLs = 3-7

Skin

Note: BASAL CEL ADEN TGLs = 1-11

Thyroid Gland

C Cell

Hyperplasia	Cystic, Moderate
Adenoma	
Basal Cell Adenoma	
Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: MOREIBUND SACRIFICE DUE TO PITUITARY TUMOR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8704

TRT#: 9

SEX: Female

DAY ON TEST: 729

DOSE: 0 PPM 0-0

DISP: Terminal Sacrifice

HISTO:

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Lung	Lymph Node	Nose	Pancreas
Parathyroid Gland	Salivary Glands	Skin	Spleen
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder	Uterus		

**OBSERVATIONS**

Adrenal Gland	Cortex	Hyperplasia	Mild
	Cortex	Vacuolization Cytoplasmic	Mild
Clitoral Gland		Inflammation	Chronic Active, Mild
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Mild
Liver		Basophilic Focus	Mild
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Ovary	Periovarn Tiss	Cyst	
Note: CYST TGLs = 1-10			
Pituitary Gland	Pars Distalis	Adenoma	
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8705

TRT#: 9

SEX: Female

DAY ON TEST: 729

DOSE: 0 PPM 0-0

DISP: Terminal Sacrifice

HISTO:

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Clitoral Gland	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Kidney	Lung	Lymph Node
Nose	Ovary	Parathyroid Gland	Salivary Glands
Skin	Spleen	Stomach - Forestomach	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	Uterus

**OBSERVATIONS**

Adrenal Gland	Cortex	Hyperplasia	Mild
Heart		Degeneration	Chronic, Mild
Liver		Basophilic Focus	Mild
		Inflammation	Chronic Active, Mild
		Necrosis	Minimal
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Minimal
Pituitary Gland	Pars Distalis	Cyst	
Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8706

TRT#: 9

DOSE: 0 PPM 0-0

SEX: Female

DISP: Terminal Sacrifice

DAY ON TEST: 729

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Brain	Clitoral Gland
Esophagus	Heart	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lung	Nose	Ovary
Parathyroid Gland	Salivary Glands	Skin	Spleen
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder			

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
Eye	Retina	Atrophy	Marked
	Lens	Cataract	Moderate
Note: ATROPHY	TGLs = 1-13.1		
Note: CATARACT	TGLs = 1-13.1		
Kidney		Nephropathy	Chronic, Minimal
Liver		Basophilic Focus	Mild
Lymph Node	Mesenteric, Sinus	Ectasia	Marked
Note: ECTASIA	TGLs = 3-11		
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Moderate
Pancreas	Acinus	Atrophy	Minimal
Pituitary Gland	Pars Distalis	Adenoma	
Note: ADENOMA	TGLs = 4-7		
Thyroid Gland	C Cell	Hyperplasia	Mild
Uterus		Polyp Stromal	
Note: POLYP STROMAL	TGLs = 2-12		

PRIMARY CAUSE OF DEATH -

Animal Note: TGL1-13, EYE IS NORMAL ON MICRO

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8707

TRT#: 9

SEX: Female

DAY ON TEST: 730

DOSE: 0 PPM 0-0

DISP: Terminal Sacrifice

HISTO:

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Adrenal Gland - Medulla	Bone	Bone Marrow	Esophagus
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Kidney
Lung	Lymph Node	Nose	Ovary
Pancreas	Parathyroid Gland	Salivary Glands	Skin
Spleen	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder		

**OBSERVATIONS**

Adrenal Gland	Cortex	Hyperplasia	Moderate
	Cortex	Vacuolization Cytoplasmic	Mild
Brain		Necrosis	Moderate
Clitoral Gland	Duct	Dilatation	Moderate
Heart		Degeneration	Chronic, Mild
Liver		Basophilic Focus	Mild
		Inflammation	Chronic Active, Mild
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Pituitary Gland	Pars Distalis	Cyst	
Thyroid Gland	C Cell	Hyperplasia	Moderate
Uterus		Dilatation	Moderate

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8708

TRT#: 9

DOSE: 0 PPM 0-0

SEX: Female

DISP: Terminal Sacrifice

DAY ON TEST: 730

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Clitoral Gland
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Lung	Nose	Parathyroid Gland	Salivary Glands
Skin	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder	Uterus	

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Cortex	Leukemia Mononuclear	
	Cortex	Vacuolization Cytoplasmic	Mild
Brain		Compression	
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Minimal
Liver		Basophilic Focus	Moderate
	Bile Duct	Hyperplasia	Minimal
		Inflammation	Chronic Active, Mild
		Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 1-4			
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Moderate
Ovary	Periovarn Tiss	Cyst	
Note: CYST TGLs = 4-10			
Pancreas	Acinus	Atrophy	Mild
Pituitary Gland	Pars Distalis	Adenoma	
Note: ADENOMA TGLs = 3-7			
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 2-11 ]			
Thyroid Gland	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8709

TRT#: 9

SEX: Female

DAY ON TEST: 544

DOSE: 0 PPM 0-0

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Clitoral Gland	Esophagus	Heart	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Kidney	Lung
Lymph Node	Mammary Gland	Nose	Pancreas
Parathyroid Gland	Salivary Glands	Skin	Spleen
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder	Uterus		

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Cortex	Hypertrophy	Mild
Liver		Basophilic Focus	Mild
		Inflammation	Chronic Active, Mild
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Ovary	Periovarn Tiss	Cyst	
Note: CYST	TGLs = 1-10		
Pituitary Gland	Pars Distalis	Cyst	
Spinal Cord	Nerve	Demyelination	Mild
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO PARALYSIS

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8710

TRT#: 9

DOSE: 0 PPM 0-0

SEX: Female

DISP: Moribund Sacrifice

DAY ON TEST: 681

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Esophagus
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Lung
Nose	Ovary	Pancreas	Parathyroid Gland
Salivary Glands	Skin	Spleen	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	Urinary Bladder
Uterus			

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Cortex	Vacuolization Cytoplasmic	Mild
Brain		Compression	
Clitoral Gland		Inflammation	Chronic Active, Mild
Eye	Retina	Atrophy	Marked
	Lens	Cataract	Mild
Note: CATARACT	TGLs = 1-11		
Note: ATROPHY	TGLs = 1-11		
Heart		Degeneration	Chronic, Mild
Intestine Large	Cecum	Inflammation	Chronic Active, Moderate
Note: INFLAMMATION	TGLs = 8-6		
Liver		Basophilic Focus	Mild
		Inflammation	Chronic Active, Mild
Lymph Node	Mandibular	Hyperplasia	Moderate
	Mesenteric	Hyperplasia	Lymphoid, Marked
	Mediastinal	Infiltration Cellular	Histiocyte, Moderate
	Mesenteric	Infiltration Cellular	Histiocyte, Moderate
Note: INFILTRAT CELL	TGLs = 5-2		
Note: HYPERPLASIA	TGLs = 6-14		
Mammary Gland		Hyperplasia	Cystic, Moderate
Mesentery		Mesothelioma Malignant	Multifocal
Note: MESOTHELIO MAL	TGLs = 2-12		

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:08

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8710

**TRT#:** 9

**SEX:** Female

**DAY ON TEST:** 681

**DOSE:** 0 PPM 0-0

**DISP:** Moribund Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

Pituitary Gland

Pars Distalis

Adenoma

Note: ADENOMA

TGLs = 4-7

Skeletal Muscle

Abdominal

Mesothelioma Malignant

Multifocal

Note: MESOTHELIO MAL

TGLs = 7-13

Thyroid Gland

C Cell

Hyperplasia

Mild

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**PRIMARY CAUSE OF DEATH**

-

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Animal Note: MORIBUND SACRIFICE DUE TO MALIGNANT MESOTHELIOMA

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8711

TRT#: 9

SEX: Female

DAY ON TEST: 730

DOSE: 0 PPM 0-0

DISP: Terminal Sacrifice

HISTO:

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Kidney	Lung	Lymph Node
Nose	Parathyroid Gland	Salivary Glands	Skin
Spleen	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder	Uterus	

**OBSERVATIONS**

Clitoral Gland	Duct	Dilatation Inflammation	Moderate Chronic Active, Mild
Heart		Degeneration	Chronic, Mild
Liver		Basophilic Focus Inflammation	Mild Chronic Active, Minimal
Lymph Node Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Ovary Note: CYST TGLs = 1-11	Periovarn Tiss	Cyst	
Pancreas	Acinus	Atrophy	Mild
Pituitary Gland Note: CYST TGLs = 2-7	Pars Distalis	Cyst	
Thyroid Gland	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8712

TRT#: 9

SEX: Female

DAY ON TEST: 730

DOSE: 0 PPM 0-0

DISP: Terminal Sacrifice

HISTO:

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Adrenal Gland - Medulla  
Clitoral Gland  
Intestine Large - Colon  
Intestine Small - Jejunum  
Lung  
Salivary Glands  
Stomach - Glandular  
Uterus

Bone  
Esophagus  
Intestine Large - Rectum  
Islets, Pancreatic  
Lymph Node  
Skin  
Thymus

Bone Marrow  
Heart  
Intestine Small - Duodenum  
Kidney  
Nose  
Spleen  
Trachea

Brain  
Intestine Large - Cecum  
Intestine Small - Ileum  
Liver  
Ovary  
Stomach - Forestomach  
Urinary Bladder

**MISSING**

Parathyroid Gland

**OBSERVATIONS**

Adrenal Gland  
Cortex  
Cortex  
Lymph Node  
Note: MANDIBULAR LN NORMAL  
Mammary Gland  
Pancreas  
Pituitary Gland  
Note: ADENOMA TGLs = 1-7  
Thyroid Gland

Cortex  
Cortex  
Acinus  
Pars Distalis  
C Cell

Adenoma  
Hyperplasia  
Hyperplasia  
Atrophy  
Adenoma  
Hyperplasia

Mild  
Cystic, Moderate  
Minimal  
Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8713

TRT#: 9

SEX: Female

DAY ON TEST: 730

DOSE: 0 PPM 0-0

DISP: Terminal Sacrifice

HISTO:

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Clitoral Gland	Esophagus	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Kidney	Lung
Lymph Node	Nose	Ovary	Salivary Glands
Skin	Spleen	Stomach - Forestomach	Stomach - Glandular
Trachea	Urinary Bladder		

**MISSING**

Parathyroid Gland	Thymus
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**OBSERVATIONS**

Heart		Degeneration	Chronic, Minimal
Liver		Basophilic Focus	Mild
		Eosinophilic Focus	Minimal
		Inflammation	Chronic Active, Mild
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Moderate
Pancreas	Acinus	Atrophy	Minimal
Pituitary Gland	Pars Distalis	Adenoma	
Note: ADENOMA TGLs = 1-7			
Stomach	Glandular	Hyperplasia	Focal, Mild
Note: HYPERPLASIA TGLs = 2-11			
Thyroid Gland	Bilateral, C Cell	Adenoma	
	C Cell	Hyperplasia	Mild
Uterus		Dilatation	Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8714

TRT#: 9

SEX: Female

DAY ON TEST: 681

DOSE: 0 PPM 0-0

DISP: Moribund Sacrifice

HISTO:

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lung	Lymph Node	Nose
Ovary	Parathyroid Gland	Pituitary Gland	Salivary Glands
Skin	Spleen	Stomach - Forestomach	Stomach - Glandular
Trachea	Urinary Bladder	Uterus	

**MISSING**

Thymus

**OBSERVATIONS**

Clitoral Gland	Duct	Dilatation Inflammation	Moderate Chronic Active, Mild
Heart		Degeneration	Chronic, Mild
Kidney	Renal Tubule	Mineralization	Mild
Liver		Basophilic Focus Inflammation	Mild Chronic Active, Mild
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Moderate
Pancreas	Acinus	Atrophy	Mild
Spinal Cord	Nerve	Demyelination	Mild
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO PARALYSIS

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8715

TRT#: 9

SEX: Female

DAY ON TEST: 731

DOSE: 0 PPM 0-0

DISP: Terminal Sacrifice

HISTO:

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Lung	Lymph Node	Nose	Ovary
Pancreas	Parathyroid Gland	Salivary Glands	Spleen
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder	Uterus		

**OBSERVATIONS**

Adrenal Gland	Cortex	Hyperplasia	Moderate
	Cortex	Vacuolization Cytoplasmic	Minimal
Clitoral Gland	Duct	Dilatation	Moderate
		Inflammation	Chronic Active, Mild
Heart		Degeneration	Chronic, Moderate
Kidney		Nephropathy	Chronic, Minimal
Liver		Basophilic Focus	Moderate
		Eosinophilic Focus	Minimal
		Inflammation	Chronic Active, Mild
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Moderate
Pituitary Gland	Pars Distalis	Hyperplasia	Moderate
Skin		Squamous Cell Papilloma	
Note: PAPILLOMA SQUA TGLs = 1-11			
Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8716

TRT#: 9

DOSE: 0 PPM 0-0

SEX: Female

DISP: Terminal Sacrifice

DAY ON TEST: 731

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Lung	Lymph Node	Nose	Ovary
Pancreas	Parathyroid Gland	Salivary Glands	Skin
Spleen	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder	Uterus	

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Cortex	Hypertrophy	Mild
Clitoral Gland	Duct	Dilatation	Moderate
		Inflammation	Chronic Active, Mild
Heart		Degeneration	Chronic, Mild
Kidney	Renal Tubule	Mineralization	Mild
Liver		Basophilic Focus	Mild
		Inflammation	Chronic Active, Mild
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Pituitary Gland	Pars Distalis	Cyst	
Note: CYST TGLs = 1-7			
Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8717

TRT#: 9

SEX: Female

DAY ON TEST: 731

DOSE: 0 PPM 0-0

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Esophagus	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Lung	Lymph Node
Nose	Ovary	Pancreas	Parathyroid Gland
Salivary Glands	Skin	Spleen	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	Urinary Bladder

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Medulla	Hyperplasia	Mild
	Cortex	Hypertrophy	Mild
	Bilateral, Medulla	Pheochromocytoma Benign	
Brain		Compression	
Clitoral Gland	Duct	Dilatation	Moderate
		Inflammation	Chronic Active, Mild
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Mild
Liver		Basophilic Focus	Minimal
	Bile Duct	Hyperplasia	Mild
		Inflammation	Chronic Active, Mild
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Moderate
Pituitary Gland	Pars Distalis	Adenoma	
Note: ADENOMA TGLs = 2-7			
Thyroid Gland	C Cell	Hyperplasia	Mild
Uterus		Polyp Stromal	
Note: POLYP STROMAL TGLs = 1-10			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8718

TRT#: 9

SEX: Female

DAY ON TEST: 731

DOSE: 0 PPM 0-0

DISP: Terminal Sacrifice

HISTO:

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Kidney	Lung	Lymph Node
Nose	Ovary	Pancreas	Salivary Glands
Skin	Spleen	Stomach - Forestomach	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	Uterus

**OBSERVATIONS**

Clitoral Gland	Duct	Dilatation	Moderate
Heart		Degeneration	Chronic, Minimal
Liver		Basophilic Focus	Moderate
		Inflammation	Chronic Active, Mild
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Parathyroid Gland		Adenoma	
Pituitary Gland	Pars Distalis	Cyst	
	Pars Distalis	Hyperplasia	Mild
Note: CYST TGLs = 1-7			
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8719

TRT#: 9

SEX: Female

DAY ON TEST: 656

DOSE: 0 PPM 0-0

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Esophagus
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Lung
Lymph Node	Nose	Ovary	Pancreas
Parathyroid Gland	Salivary Glands	Skin	Spleen
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder	Uterus		

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
Brain		Astrocytoma Malignant	
		Compression	
Clitoral Gland		Inflammation	Chronic Active, Mild
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Mild
Liver		Basophilic Focus	Mild
		Inflammation	Chronic Active, Mild
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Moderate
Pituitary Gland	Pars Distalis	Adenoma	
Note: ADENOMA TGLs = 1-7			
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SAC DUE TO PITUITARY AND BRAIN TUMORS  
Animal Note: DISCHARGE FROM EYES DUE TO PORPHYRIN TEARS, NCL  
Animal Note: TGL2-7 THYROIDS ARE WITHIN NORMAL LIMITS ON MICRO

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8720

TRT#: 9

DOSE: 0 PPM 0-0

SEX: Female

DISP: Terminal Sacrifice

DAY ON TEST: 731

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Brain	Esophagus
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Lung
Lymph Node	Nose	Pancreas	Parathyroid Gland
Salivary Glands	Skin	Spleen	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	Urinary Bladder
Uterus			

OBSERVATIONS

Adrenal Gland	Medulla	Pheochromocytoma Benign	
	Cortex	Vacuolization Cytoplasmic	Minimal
Clitoral Gland	Duct	Dilatation	Moderate
		Inflammation	Chronic Active, Mild
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Mild
Liver		Basophilic Focus	Mild
		Inflammation	Chronic Active, Mild
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Ovary	Periovarn Tiss	Cyst	
		Infiltration Cellular	Lymphocyte, Moderate
Note: CYST TGLs = 1-10			
Pituitary Gland	Pars Distalis	Cyst	
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8721

TRT#: 9

SEX: Female

DAY ON TEST: 687

DOSE: 0 PPM 0-0

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Brain	Clitoral Gland
Esophagus	Heart	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Kidney	Nose	Pancreas
Parathyroid Gland	Pituitary Gland	Salivary Glands	Skin
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder	Uterus		

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Medulla	Hyperplasia	Mild
	Cortex	Vacuolization Cytoplasmic	Moderate
Liver		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Marked
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Moderate
Ovary	Periovarn Tiss	Cyst	
Note: CYST	TGLs = 2-12		
Spleen		Leukemia Mononuclear	
	[ Leukemia Mononuclear TGLS = 1-11 ]		
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8722

TRT#: 9

SEX: Female

DAY ON TEST: 732

DOSE: 0 PPM 0-0

DISP: Terminal Sacrifice

HISTO:

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Kidney	Lung	Lymph Node	Nose
Pancreas	Parathyroid Gland	Salivary Glands	Skin
Spleen	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder	Uterus	

**OBSERVATIONS**

Adrenal Gland	Cortex	Hyperplasia	Mild
	Cortex	Hypertrophy	Mild
Clitoral Gland		Inflammation	Chronic Active, Minimal
Eye	Retina	Atrophy	Marked
	Lens	Cataract	Moderate
Note: CATARACT	TGLs = 1-11		
Note: ATROPHY	TGLs = 1-11		
Heart		Degeneration	Chronic, Mild
Liver		Basophilic Focus	Mild
		Inflammation	Chronic Active, Minimal
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Moderate
Ovary	Periovarn Tiss	Cyst	
Note: CYST	TGLs = 2-12		
Pituitary Gland	Pars Distalis	Cyst	
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8723

TRT#: 9

SEX: Female

DAY ON TEST: 732

DOSE: 0 PPM 0-0

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Kidney
Lung	Lymph Node	Nose	Parathyroid Gland
Salivary Glands	Skin	Stomach - Forestomach	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	

INSUFFICIENT TISSUE

Islets, Pancreatic	Pancreas
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OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Cortex	Hypertrophy	Moderate
	Cortex	Vacuolization Cytoplasmic	Mild
Clitoral Gland	Duct	Dilatation	Moderate
		Inflammation	Chronic Active, Mild
Heart		Degeneration	Chronic, Mild
Liver		Basophilic Focus	Mild
		Clear Cell Focus	
		Inflammation	Chronic Active, Mild
		Leukemia Mononuclear	
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Moderate
Ovary	Follicle	Cyst	
Pituitary Gland	Pars Distalis	Cyst	
	Pars Distalis	Hyperplasia	Mild
Spleen		Leukemia Mononuclear	
Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Mild
Uterus	Cervix	Cyst	

Note: CYST TGLs = 1-11

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:08

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8723

**TRT#:** 9

**SEX:** Female

**DAY ON TEST:** 732

**DOSE:** 0 PPM 0-0

**DISP:** Terminal Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8724

TRT#: 9

DOSE: 0 PPM 0-0

SEX: Female

DISP: Terminal Sacrifice

DAY ON TEST: 732

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Brain	Clitoral Gland
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Kidney	Lung	Lymph Node	Nose
Ovary	Pancreas	Parathyroid Gland	Salivary Glands
Skin	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder		

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Medulla	Hyperplasia	Mild
Heart		Degeneration	Chronic, Moderate
Liver		Basophilic Focus	
		Clear Cell Focus	
		Leukemia Mononuclear	
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Pituitary Gland	Pars Distalis	Cyst	
Spleen		Leukemia Mononuclear	
Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Mild
Uterus		Polyp Stromal	
Note: POLYP STROMAL TGLs = 1-10			

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL2-7, ADRENALS WITHIN NORMAL LIMITS ON MICRO

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8725

TRT#: 9

DOSE: 0 PPM 0-0

SEX: Female

DISP: Terminal Sacrifice

DAY ON TEST: 732

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Brain	Esophagus
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Lung
Lymph Node	Nose	Ovary	Pancreas
Parathyroid Gland	Salivary Glands	Skin	Stomach - Forestomach
Stomach - Glandular	Trachea	Urinary Bladder	

MISSING

Thymus

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Medulla	Hyperplasia	Mild
Clitoral Gland	Duct	Dilatation	Moderate
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Moderate
Liver		Basophilic Focus	
		Leukemia Mononuclear	
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Pituitary Gland	Pars Distalis	Adenoma	
Note: ADENOMA TGLs = 2-11			
Spleen		Leukemia Mononuclear	
Thyroid Gland	C Cell	Hyperplasia	Mild
Uterus		Dilatation	Moderate
Note: DILATATION TGLs = 1-12			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8726

TRT#: 9

SEX: Female

DAY ON TEST: 732

DOSE: 0 PPM 0-0

DISP: Terminal Sacrifice

HISTO:

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Adrenal Gland - Cortex  
Brain  
Intestine Large - Colon  
Intestine Small - Jejunum  
Lymph Node  
Parathyroid Gland  
Stomach - Forestomach

Adrenal Gland - Medulla  
Clitoral Gland  
Intestine Large - Rectum  
Islets, Pancreatic  
Nose  
Salivary Glands  
Stomach - Glandular

Bone  
Esophagus  
Intestine Small - Duodenum  
Kidney  
Ovary  
Skin  
Trachea

Bone Marrow  
Intestine Large - Cecum  
Intestine Small - Ileum  
Lung  
Pancreas  
Spleen  
Urinary Bladder

**MISSING**

Thymus

**OBSERVATIONS**

Heart  
Liver  
Lymph Node  
Note: MANDIBULAR LN NORMAL  
Mammary Gland  
Pituitary Gland  
Thyroid Gland  
Uterus  
Note: ADENOCARC TGLs = 1-11

Pars Distalis  
Pars Distalis  
C Cell

Degeneration  
Basophilic Focus  
Hyperplasia  
Cyst  
Hyperplasia  
Hyperplasia  
Adenocarcinoma

Chronic, Mild  
Mild  
Cystic, Mild  
Mild  
Moderate

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8727

TRT#: 9

SEX: Female

DAY ON TEST: 733

DOSE: 0 PPM 0-0

DISP: Terminal Sacrifice

HISTO:

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Clitoral Gland	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Kidney	Lung	Lymph Node	Nose
Ovary	Parathyroid Gland	Salivary Glands	Spleen
Stomach - Forestomach	Stomach - Glandular	Trachea	Urinary Bladder
Uterus			

**MISSING**

Mammary Gland	Thymus
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**OBSERVATIONS**

Adrenal Gland	Cortex	Hyperplasia	Mild
	Cortex	Hypertrophy	Mild
Heart		Degeneration	Chronic, Mild
Intestine Large	Rectum	Parasite Metazoan	
Liver		Basophilic Focus	Mild
		Necrosis	Minimal
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Pancreas	Acinus	Atrophy	Mild
Pituitary Gland	Pars Distalis	Adenoma	
Skin		Trichoepithelioma	
Note: TRICHOEPITHEL TGLs = 1-11			
Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

<b>ANIMAL ID:</b> 8728	<b>TRT#:</b> 9 <b>DOSE:</b> 0 PPM 0-0	<b>SEX:</b> Female <b>DISP:</b> Terminal Sacrifice	<b>DAY ON TEST:</b> 733 <b>HISTO:</b>
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**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Kidney	Lung	Lymph Node	Nose
Ovary	Pancreas	Pituitary Gland	Salivary Glands
Skin	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder	Uterus	

**OBSERVATIONS**

Adrenal Gland	Cortex	Hyperplasia	Moderate
	Cortex	Hypertrophy	Mild
Clitoral Gland		Adenoma	
Heart		Degeneration	Chronic, Mild
Liver		Basophilic Focus	Mild
	Bile Duct	Hyperplasia	Mild
		Leukemia Mononuclear	
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Parathyroid Gland		Adenoma	
Spleen		Leukemia Mononuclear	
Thyroid Gland	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH -

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8729

TRT#: 9

SEX: Female

DAY ON TEST: 733

DOSE: 0 PPM 0-0

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Lung	Lymph Node	Nose	Ovary
Pancreas	Parathyroid Gland	Salivary Glands	Skin
Spleen	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder	Uterus	

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
Clitoral Gland	Duct	Dilatation	Moderate
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Mild
Liver		Basophilic Focus	Mild
	Bile Duct	Hyperplasia	Minimal
		Inflammation	Chronic Active, Minimal
Lymph Node			
Note: M			
Mammary Gland		Hyperplasia	Cystic, Moderate
Pituitary Gland	Pars Distalis	Cyst	
	Pars Distalis	Hyperplasia	Mild
Note: HYPERPLASIA TGLs = 1-7			
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: MANDIBULAR LN NORMAL

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8730

TRT#: 9

SEX: Female

DAY ON TEST: 733

DOSE: 0 PPM 0-0

DISP: Terminal Sacrifice

HISTO:

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Adrenal Gland - Medulla	Bone	Bone Marrow	Esophagus
Intestine Large - Cecum	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Kidney	Lung
Lymph Node	Nose	Pancreas	Parathyroid Gland
Salivary Glands	Skin	Spleen	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	Urinary Bladder

**OBSERVATIONS**

Adrenal Gland	Cortex	Hyperplasia	Mild
	Cortex	Hypertrophy	Mild
Brain		Astrocytoma Malignant	
Clitoral Gland	Duct	Dilatation	Moderate
		Inflammation	Chronic Active, Moderate
Heart		Degeneration	Chronic, Moderate
Intestine Large	Colon	Parasite Metazoan	
Liver		Basophilic Focus	Mild
		Inflammation	Chronic Active, Mild
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Moderate
Ovary		Infiltration Cellular	Lymphocyte, Moderate
Pituitary Gland	Pars Distalis	Cyst	
	Pars Distalis	Hyperplasia	Mild
Thyroid Gland	C Cell	Hyperplasia	Mild
Uterus	Epithelium	Adenoma	
Note: [ ADENOMA ] TGLs = 1-10			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8731

TRT#: 9

SEX: Female

DAY ON TEST: 733

DOSE: 0 PPM 0-0

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Brain	Clitoral Gland
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Lung	Nose	Parathyroid Gland	Salivary Glands
Skin	Spleen	Stomach - Forestomach	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Cortex	Hypertrophy	Mild
	Cortex	Vacuolization Cytoplasmic	Mild
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Minimal
Liver		Basophilic Focus	Mild
		Inflammation	Chronic Active, Mild
Mammary Gland		Hyperplasia	Cystic, Moderate
Ovary		Infiltration Cellular	Lymphocyte, Moderate
Pancreas	Acinus	Atrophy	Mild
Pituitary Gland	Pars Distalis	Cyst	
Note: CYST			
Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Mild
Uterus		Dilatation	Moderate
Note: DILATATION			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8732

TRT#: 9

SEX: Female

DAY ON TEST: 579

DOSE: 0 PPM 0-0

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Clitoral Gland	Esophagus	Heart	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Lung	Lymph Node
Nose	Ovary	Pancreas	Parathyroid Gland
Salivary Glands	Skin	Spleen	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	Urinary Bladder
Uterus			

OBSERVATIONS

Brain		Compression	
Kidney		Nephropathy	Chronic, Mild
Liver		Basophilic Focus	Minimal
		Inflammation	Chronic Active, Moderate
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Pituitary Gland	Pars Distalis	Adenoma	
Note: ADENOMA TGLs = 1-7			
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO PITUITARY TUMOR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:08

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8733

TRT#: 9

DOSE: 0 PPM 0-0

SEX: Female

DISP: Terminal Sacrifice

DAY ON TEST: 736

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Lung	Lymph Node	Nose	Ovary
Parathyroid Gland	Salivary Glands	Skin	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	Urinary Bladder

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Cortex	Hypertrophy	Mild
Clitoral Gland	Duct	Dilatation	Moderate
		Inflammation	Chronic Active, Mild
Note: DILATATION TGLs = 2-12			
Heart		Degeneration	Chronic, Moderate
Kidney		Nephropathy	Chronic, Minimal
Liver		Basophilic Focus	Mild
	Bile Duct	Hyperplasia	Mild
		Leukemia Mononuclear	
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Fibroadenoma	
		Hyperplasia	Cystic, Moderate
Note: FIBROADENOMA TGLs = 1-11			
Pancreas	Acinus	Atrophy	Minimal
Pituitary Gland	Pars Distalis	Adenoma	
Spleen		Leukemia Mononuclear	
Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Mild
Uterus		Polyp Stromal	

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL1-11, SKIN MASS IS MAMMARY TUMOR

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:09

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8733

**TRT#:** 9

**DOSE:** 0 PPM 0-0

**SEX:** Female

**DISP:** Terminal Sacrifice

**DAY ON TEST:** 736

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8734

TRT#: 9

SEX: Female

DAY ON TEST: 736

DOSE: 0 PPM 0-0

DISP: Terminal Sacrifice

HISTO:

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Bone	Bone Marrow	Brain	Clitoral Gland
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Lung	Lymph Node	Nose	Ovary
Pancreas	Salivary Glands	Skin	Spleen
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder	Uterus		

**MISSING**

Parathyroid Gland

**OBSERVATIONS**

Adrenal Gland	Cortex	Hyperplasia	Mild
	Medulla	Hyperplasia	Mild
	Cortex	Vacuolization Cytoplasmic	Mild
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Mild
Liver		Basophilic Focus	Mild
	Bile Duct	Hyperplasia	Minimal
		Inflammation	Chronic Active, Minimal
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Moderate
Pituitary Gland	Pars Distalis	Hyperplasia	Mild
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8735

TRT#: 9

DOSE: 0 PPM 0-0

SEX: Female

DISP: Terminal Sacrifice

DAY ON TEST: 736

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Brain	Esophagus
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Lung
Lymph Node	Nose	Ovary	Pancreas
Parathyroid Gland	Salivary Glands	Skin	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	Urinary Bladder

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Medulla	Hyperplasia	Mild
Clitoral Gland		Adenoma	
		Inflammation	Chronic Active, Mild
Note: ADENOMA TGLs = 1-12			
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Mild
Liver		Basophilic Focus	Mild
	Bile Duct	Hyperplasia	Mild
		Leukemia Mononuclear	
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Pituitary Gland	Pars Distalis	Cyst	
	Pars Distalis	Hyperplasia	Mild
Spleen		Leukemia Mononuclear	
Thyroid Gland	C Cell	Hyperplasia	Mild
Uterus		Polyp Stromal	
Note: POLYP STROMAL TGLs = 2-11			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8736

TRT#: 9

SEX: Female

DAY ON TEST: 736

DOSE: 0 PPM 0-0

DISP: Terminal Sacrifice

HISTO:

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Lung	Lymph Node	Nose	Ovary
Pancreas	Salivary Glands	Skin	Spleen
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder			

**MISSING**

Parathyroid Gland

**OBSERVATIONS**

Adrenal Gland	Cortex	Hyperplasia	Mild
	Cortex	Hypertrophy	Mild
	Cortex	Vacuolization Cytoplasmic	Mild
Clitoral Gland		Adenoma	
Note: ADENOMA	TGLs = 1-11		
Heart		Degeneration	Chronic, Moderate
Kidney		Nephropathy	Chronic, Minimal
Liver		Basophilic Focus	Mild
		Inflammation	Chronic Active, Mild
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Moderate
Pituitary Gland	Pars Distalis	Cyst	
Thyroid Gland	C Cell	Hyperplasia	Mild
Uterus		Dilatation	Marked

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8737

TRT#: 9

SEX: Female

DAY ON TEST: 736

DOSE: 0 PPM 0-0

DISP: Terminal Sacrifice

HISTO:

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Kidney	Lung	Lymph Node	Nose
Ovary	Pancreas	Parathyroid Gland	Pituitary Gland
Salivary Glands	Skin	Spleen	Stomach - Forestomach
Stomach - Glandular	Trachea	Urinary Bladder	Uterus

**MISSING**

Thymus

**OBSERVATIONS**

Adrenal Gland	Cortex	Hyperplasia	Mild
	Cortex	Vacuolization Cytoplasmic	Mild
Clitoral Gland		Inflammation	Chronic Active, Mild
Heart		Degeneration	Chronic, Mild
Liver		Basophilic Focus	Mild
		Inflammation	Chronic Active, Mild
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Fibroadenoma	
Note: FIBROADENOMA TGLs = 1-11			
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL1-11, SKIN MASS IS MAMMARY TUMOR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8738

TRT#: 9

DOSE: 0 PPM 0-0

SEX: Female

DISP: Terminal Sacrifice

DAY ON TEST: 737

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Clitoral Gland	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Kidney	Lung	Lymph Node
Nose	Parathyroid Gland	Salivary Glands	Skin
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder	Uterus		

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Cortex	Vacuolization Cytoplasmic	Mild
Heart		Degeneration	Chronic, Mild
Liver		Basophilic Focus	Minimal
	Bile Duct	Hyperplasia	Mild
		Inflammation	Chronic Active, Mild
		Leukemia Mononuclear	
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Ovary	Periovarn Tiss	Cyst	
Note: CYST TGLs = 1-12			
Pancreas	Acinus	Atrophy	Mild
Pituitary Gland	Pars Distalis	Cyst	
	Pars Distalis	Hyperplasia	Mild
Note: CYST TGLs = 3-7			
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 2-11 ]			
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8739

TRT#: 9

DOSE: 0 PPM 0-0

SEX: Female

DISP: Terminal Sacrifice

DAY ON TEST: 737

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Brain	Clitoral Gland
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Lung	Nose	Ovary	Pancreas
Parathyroid Gland	Salivary Glands	Skin	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	Urinary Bladder

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
Bone Marrow	Femoral	Leukemia Mononuclear	
Heart		Degeneration	Chronic, Moderate
Kidney		Nephropathy	Chronic, Mild
Liver		Basophilic Focus	Mild
		Inflammation	Chronic Active, Mild
		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Fibroadenoma	
		Hyperplasia	Cystic, Moderate
Note: FIBROADENOMA TGLs = 4-11			
Pituitary Gland	Pars Distalis	Adenoma	
Note: ADENOMA TGLs = 1-7			
Spleen		Leukemia Mononuclear	
Thyroid Gland	C Cell	Hyperplasia	Mild
Uterus		Schwannoma Malignant	
Note: [ SCHWANNOMA MAL ] TGLs = 2-12,3-10			

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL4-11, SKIN MASS IS MAMMARY TUMOR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8740

TRT#: 9

DOSE: 0 PPM 0-0

SEX: Female

DISP: Terminal Sacrifice

DAY ON TEST: 737

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Clitoral Gland	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lung	Nose	Pancreas
Parathyroid Gland	Salivary Glands	Skin	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	Urinary Bladder
Uterus			

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
Heart		Degeneration	Chronic, Moderate
Kidney		Nephropathy	Chronic, Minimal
Liver		Basophilic Focus	Mild
		Inflammation	Chronic Active, Mild
		Leukemia Mononuclear	
Lymph Node	Mesenteric, Sinus	Ectasia	Marked
	Mandibular	Leukemia Mononuclear	
Note: ECTASIA TGLs = 4-12			
Mammary Gland		Hyperplasia	Cystic, Moderate
Mesentery		Inflammation	Chronic Active, Moderate
Note: INFLAMMATION TGLs = 2-11			
Ovary	Follicle	Cyst	
Note: CYST TGLs = 1-10			
Pituitary Gland	Pars Distalis	Adenoma	
Note: ADENOMA TGLs = 3-7			
Spleen		Leukemia Mononuclear	
Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8741

TRT#: 9

SEX: Female

DAY ON TEST: 737

DOSE: 0 PPM 0-0

DISP: Terminal Sacrifice

HISTO:

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Kidney	Lung	Lymph Node	Nose
Ovary	Pancreas	Parathyroid Gland	Salivary Glands
Skin	Spleen	Stomach - Forestomach	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	Uterus

**OBSERVATIONS**

Adrenal Gland	Cortex	Hyperplasia	Mild
Clitoral Gland		Inflammation	Chronic Active, Mild
Heart		Degeneration	Chronic, Mild
Liver		Basophilic Focus	Mild
		Clear Cell Focus	Mild
	Bile Duct	Hyperplasia	Mild
		Inflammation	Chronic Active, Mild
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Pituitary Gland	Pars Distalis	Hyperplasia	Mild
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8742

TRT#: 9

SEX: Female

DAY ON TEST: 678

DOSE: 0 PPM 0-0

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Brain	Clitoral Gland
Esophagus	Heart	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Nose	Ovary	Pancreas
Parathyroid Gland	Salivary Glands	Skin	Stomach - Forestomach
Stomach - Glandular	Trachea	Urinary Bladder	Uterus

OBSERVATIONS

Adrenal Gland	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
	Cortex	Vacuolization Cytoplasmic	Moderate
Intestine Large	Cecum	Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 6-14			
Kidney		Nephropathy	Chronic, Minimal
Liver		Leukemia Mononuclear	
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
	Mediastinal	Leukemia Mononuclear	
	Mesenteric	Leukemia Mononuclear	
	Renal	Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 2-7,3-2,4-12,5-13			
Mammary Gland		Hyperplasia	Cystic, Moderate
Pituitary Gland	Pars Distalis	Hyperplasia	Moderate
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLs = 1-11 ]			
Stomach	Forestomach	Acanthosis	Mild
Note: ACANTHOSIS TGLs = 7-15			
Thymus		Leukemia Mononuclear	
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:09

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8742

**TRT#:** 9

**DOSE:** 0 PPM 0-0

**SEX:** Female

**DISP:** Moribund Sacrifice

**DAY ON TEST:** 678

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8743

TRT#: 9

SEX: Female

DAY ON TEST: 737

DOSE: 0 PPM 0-0

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Kidney	Lung	Lymph Node	Nose
Ovary	Parathyroid Gland	Salivary Glands	Skin
Spleen	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder		

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Cortex	Hypertrophy	Mild
Clitoral Gland	Duct	Dilatation	Moderate
	Duct	Dilatation	Moderate
		Inflammation	Chronic Active, Mild
Note: DILATATION TGLs = 4-10			
Heart		Degeneration	Chronic, Mild
Liver		Basophilic Focus	Mild
	Bile Duct	Hyperplasia	Mild
		Inflammation	Chronic Active, Mild
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Mild
Pituitary Gland	Pars Distalis	Adenoma	
Note: ADENOMA TGLs = 3-7			
Thyroid Gland	C Cell	Hyperplasia	Mild
Uterus		Polyp Stromal	
Note: POLYP STROMAL TGLs = 2-11			

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL1-1, SPLEEN WITHIN NORMAL LIMITS ON MICRO

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8744

TRT#: 9

SEX: Female

DAY ON TEST: 523

DOSE: 0 PPM 0-0

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Esophagus
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Lung
Lymph Node	Nose	Ovary	Pancreas
Parathyroid Gland	Salivary Glands	Skin	Spleen
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder	Uterus		

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Cortex	Hypertrophy	Mild
	Cortex	Vacuolization Cytoplasmic	Mild
Brain		Compression	
Clitoral Gland	Duct	Dilatation	Moderate
		Inflammation	Chronic Active, Mild
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Mild
Liver		Basophilic Focus	Mild
		Inflammation	Chronic Active, Mild
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Moderate
Pituitary Gland	Pars Distalis	Adenoma	
Note: ADENOMA TGLs = 1-7			
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO PITUITARY TUMOR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8745

TRT#: 9

SEX: Female

DAY ON TEST: 738

DOSE: 0 PPM 0-0

DISP: Terminal Sacrifice

HISTO:

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Lung	Lymph Node	Nose	Ovary
Pancreas	Parathyroid Gland	Salivary Glands	Skin
Spleen	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder	Uterus	

**OBSERVATIONS**

Adrenal Gland	Cortex	Hyperplasia	Mild
Clitoral Gland	Duct	Dilatation	Moderate
		Inflammation	Chronic Active, Mild
Heart		Degeneration	Chronic, Moderate
Kidney		Nephropathy	Chronic, Minimal
Liver		Basophilic Focus	Mild
	Bile Duct	Hyperplasia	Minimal
		Inflammation	Chronic Active, Mild
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Pituitary Gland	Pars Distalis	Cyst	
	Pars Distalis	Hyperplasia	Mild
Note: CYST TGLs = 1-7			
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8746

TRT#: 9

SEX: Female

DAY ON TEST: 738

DOSE: 0 PPM 0-0

DISP: Terminal Sacrifice

HISTO:

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Kidney	Lung	Lymph Node	Nose
Parathyroid Gland	Salivary Glands	Skin	Spleen
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder	Uterus		

**OBSERVATIONS**

Adrenal Gland	Cortex	Hyperplasia	Mild
Clitoral Gland		Inflammation	Chronic Active, Mild
Heart		Degeneration	Chronic, Mild
Liver		Basophilic Focus	Mild
		Inflammation	Chronic Active, Mild
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Moderate
Ovary	Periovarn Tiss	Cyst	
Note: CYST TGLs = 1-11,2-11			
Pancreas	Acinus	Atrophy	Minimal
Pituitary Gland	Pars Distalis	Adenoma	
	Pars Distalis	Cyst	
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8747

TRT#: 9

SEX: Female

DAY ON TEST: 738

DOSE: 0 PPM 0-0

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Intestine Large - Cecum	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Nose
Parathyroid Gland	Salivary Glands	Skin	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	Urinary Bladder

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Cortex	Vacuolization Cytoplasmic	Minimal
Clitoral Gland		Inflammation	Chronic Active, Mild
Heart		Degeneration	Chronic, Mild
Intestine Large	Colon	Parasite Metazoan	
Kidney		Nephropathy	Chronic, Minimal
Liver		Basophilic Focus	Mild
	Bile Duct	Hepatodiaphragmatic Nodule	
		Hyperplasia	Moderate
		Leukemia Mononuclear	
Note: ANOM HEPAT LOB TGLs = 3-12			
Note: ANOM HEPAT LOB USED FOR HDN			
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Moderate
Ovary	Follicle	Cyst	
Pancreas	Acinus	Atrophy	Mild
Pituitary Gland	Pars Distalis	Adenoma	
Note: ADENOMA TGLs = 1-7			
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 2-11 ]			
Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Mild
Uterus		Dilatation	Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:09

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8747

**TRT#:** 9

**DOSE:** 0 PPM 0-0

**SEX:** Female

**DISP:** Terminal Sacrifice

**DAY ON TEST:** 738

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8748

TRT#: 9

SEX: Female

DAY ON TEST: 334

DOSE: 0 PPM 0-0

DISP: Moribund Sacrifice

HISTO:

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Adrenal Gland - Cortex  
Brain  
Intestine Large - Colon  
Intestine Small - Jejunum  
Nose  
Pituitary Gland  
Stomach - Glandular  
Uterus

Adrenal Gland - Medulla  
Esophagus  
Intestine Large - Rectum  
Islets, Pancreatic  
Ovary  
Salivary Glands  
Thymus

Bone  
Heart  
Intestine Small - Duodenum  
Lung  
Pancreas  
Spleen  
Trachea

Bone Marrow  
Intestine Large - Cecum  
Intestine Small - Ileum  
Lymph Node  
Parathyroid Gland  
Stomach - Forestomach  
Urinary Bladder

**OBSERVATIONS**

Clitoral Gland  
Kidney  
Liver  
Lymph Node  
Note: MANDIBULAR LN NORMAL  
Mammary Gland  
Skin  
Note: SARCOMA TGLs = 1-11  
Thyroid Gland

Subcut Tiss  
C Cell

Inflammation  
Nephropathy  
Basophilic Focus  
Hyperplasia  
Sarcoma  
Hyperplasia

Chronic Active, Moderate  
Chronic, Minimal  
Mild  
Cystic, Mild  
Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO LARGE SUBCUTANEOUS TUMOR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8749

TRT#: 9

DOSE: 0 PPM 0-0

SEX: Female

DISP: Terminal Sacrifice

DAY ON TEST: 738

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Bone	Bone Marrow	Brain
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Lung	Lymph Node	Nose	Ovary
Parathyroid Gland	Salivary Glands	Skin	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	Urinary Bladder
Uterus			

OBSERVATIONS

Adrenal Gland Note: PHEOCHROM BGN TGLs = 4-7	Medulla	Pheochromocytoma Benign	
Clitoral Gland	Duct	Dilatation Inflammation	Moderate Chronic Active, Mild
Eye Note: CATARACT TGLs = 2-11 Note: ATROPHY TGLs = 2-11	Retina Lens	Atrophy Cataract	Marked Moderate
Heart		Degeneration	Chronic, Minimal
Kidney		Nephropathy	Chronic, Marked
Liver	Bile Duct	Basophilic Focus Hyperplasia Inflammation Vacuolization Cytoplasmic	Mild Minimal Chronic Active, Minimal Mild
Lymph Node Note: MANDIBULAR LN NORMAL			
Mammary Gland Note: FIBROADENOMA TGLs = 1-12		Fibroadenoma Hyperplasia	Cystic, Moderate
Pancreas	Acinus	Atrophy	Moderate
Pituitary Gland Note: ADENOMA TGLs = 3-7	Pars Distalis	Adenoma	

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:09

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8749

**TRT#:** 9

**SEX:** Female

**DAY ON TEST:** 738

**DOSE:** 0 PPM 0-0

**DISP:** Terminal Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

Spleen

Leukemia Mononuclear

Thyroid Gland

C Cell

Hyperplasia

Mild

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**PRIMARY CAUSE OF DEATH**

-

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Animal Note: TGL1-12, SKIN MASS IS MAMMARY TUMOR

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8750

TRT#: 9

DOSE: 0 PPM 0-0

SEX: Female

DISP: Terminal Sacrifice

DAY ON TEST: 738

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Heart	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lung	Lymph Node	Nose
Ovary	Pancreas	Parathyroid Gland	Salivary Glands
Skin	Spleen	Stomach - Forestomach	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	Uterus

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Cortex	Hypertrophy	Mild
Clitoral Gland	Duct	Dilatation	Moderate
		Inflammation	Chronic Active, Moderate
Note: DILATATION TGLs = 2-10			
Kidney		Nephropathy	Chronic, Minimal
Liver		Basophilic Focus	Mild
		Eosinophilic Focus	Moderate
	Bile Duct	Hyperplasia	Moderate
Note: HYPERPLASIA TGLs = 1-11			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Pituitary Gland	Pars Distalis	Cyst	
	Pars Distalis	Hyperplasia	Mild
Note: CYST TGLs = 3-7			
Thyroid Gland	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8751

TRT#: 10

SEX: Female

DAY ON TEST: 729

DOSE: 0 PPM 10-0

DISP: Terminal Sacrifice

HISTO: 852101

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Pituitary Gland

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Clitoral Gland

Inflammation

Chronic Active, Moderate

Note: INFLAMMATION TGLs = 1-2

Liver

Basophilic Focus

Mild

Vacuolization Cytoplasmic

Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8752

TRT#: 10

SEX: Female

DAY ON TEST: 729

DOSE: 0 PPM 10-0

DISP: Terminal Sacrifice

HISTO: 852102

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Minimal

Inflammation

Chronic Active, Mild

Fibroadenoma

Mammary Gland

Note: FIBROADENOMA TGLs = 1-2,1-3

Pituitary Gland

Pars Distalis

Adenoma

Note: ADENOMA TGLs = 2-4

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL1-2,1-3 SKIN MASS IS MAMMARY TUMOR

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01  
**Test Type:** CHRONIC  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 08:38:09  
**First Dose M/F:** NA / NA  
**Lab:** BAT

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<b>ANIMAL ID:</b> 8753	<b>TRT#:</b> 10 <b>DOSE:</b> 0 PPM 10-0	<b>SEX:</b> Female <b>DISP:</b> Terminal Sacrifice	<b>DAY ON TEST:</b> 729 <b>HISTO:</b> 852103
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**ORGAN AND ACCOUNTABLE SITE STATUS**

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**NORMAL**

Spleen	Stomach - Forestomach	Stomach - Glandular
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**OBSERVATIONS**

Liver		Basophilic Focus	
	Bile Duct	Hyperplasia	Mild
Mammary Gland		Fibroadenoma	
Note: FIBROADENOMA	TGLs = 1-3		
Ovary	Periovarn Tiss	Cyst	
Note: CYST	TGLs = 2-4		
Pituitary Gland	Pars Distalis	Adenoma	
Note: [ ADENOMA ]	TGLs = 3-2		

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**PRIMARY CAUSE OF DEATH**

-

Animal Note: TGL1-3, SKIN MASS IS MAMMARY TUMOR

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8754

TRT#: 10

SEX: Female

DAY ON TEST: 635

DOSE: 0 PPM 10-0

DISP: Moribund Sacrifice

HISTO: 852104

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Heart	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Lung	Nose	Ovary	Pancreas
Parathyroid Gland	Pituitary Gland	Salivary Glands	Skin
Spleen	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder	Uterus	

MISSING

Intestine Large - Cecum	Lymph Node
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OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
Clitoral Gland		Inflammation	Chronic Active, Mild
Kidney		Nephropathy	Chronic, Minimal
Liver		Basophilic Focus	Mild
Lymph Node			
Note: MANDIBULAR LN MISSING			
Mammary Gland		Fibroadenoma	
		Hyperplasia	Cystic, Mild
Note: FIBROADENOMA TGLs = 1-11			
Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL1-11, SLIVARY GLAND LESION IS REALLY A MAMMARY TUMOR

Animal Note: MORIBUND SACRIFICE DUE TO MAMMARY TUMOR

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:09

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8756

**TRT#:** 10

**SEX:** Female

**DAY ON TEST:** 729

**DOSE:** 0 PPM 10-0

**DISP:** Terminal Sacrifice

**HISTO:** 852106

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

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**OBSERVATIONS**

Liver

Bile Duct

Hyperplasia

Mild

Leukemia Mononuclear

Note: LEUKEMIA MONUC TGLs = 2-3

Spleen

Leukemia Mononuclear

[ Leukemia Mononuclear TGLS = 1-2 ]

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**PRIMARY CAUSE OF DEATH**

-

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\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:09

**First Dose M/F:** NA / NA

**Lab:** BAT

**ANIMAL ID:** 8757

**TRT#:** 10

**SEX:** Female

**DAY ON TEST:** 730

**DOSE:** 0 PPM 10-0

**DISP:** Terminal Sacrifice

**HISTO:** 852107

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Moderate

Eosinophilic Focus

Minimal

Bile Duct

Hyperplasia

Mild

Leukemia Mononuclear

Ovary

Periovarn Tiss

Cyst

Note: CYST

TGLs = 1-2

Spleen

Leukemia Mononuclear

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:09

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8758

**TRT#:** 10

**SEX:** Female

**DAY ON TEST:** 730

**DOSE:** 0 PPM 10-0

**DISP:** Terminal Sacrifice

**HISTO:** 852108

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

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**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Mild

Pituitary Gland

Pars Distalis

Adenoma

Note: ADENOMA

TGLs = 1-2

Spleen

Leukemia Mononuclear

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**PRIMARY CAUSE OF DEATH**

-

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8759

TRT#: 10

SEX: Female

DAY ON TEST: 591

DOSE: 0 PPM 10-0

DISP: Moribund Sacrifice

HISTO: 852109

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Kidney	Lung	Lymph Node
Nose	Ovary	Pancreas	Parathyroid Gland
Salivary Glands	Skin	Spleen	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	Urinary Bladder
Uterus			

OBSERVATIONS

Clitoral Gland		Inflammation	Chronic Active, Mild
Heart		Degeneration	Chronic, Mild
Liver		Basophilic Focus	Mild
		Vacuolization Cytoplasmic	Minimal
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Moderate
Pituitary Gland	Pars Distalis	Adenoma	
Spinal Cord	Nerve	Demyelination	Minimal
Thyroid Gland	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO HIND LIMB PARALYSIS

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:09

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8760

**TRT#:** 10

**SEX:** Female

**DAY ON TEST:** 730

**DOSE:** 0 PPM 10-0

**DISP:** Terminal Sacrifice

**HISTO:** 852110

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

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**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Bile Duct

Hyperplasia

Mild

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**PRIMARY CAUSE OF DEATH**

-

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8761

TRT#: 10

SEX: Female

DAY ON TEST: 730

DOSE: 0 PPM 10-0

DISP: Terminal Sacrifice

HISTO: 852111

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Ovary

Periovarn Tiss

Cyst

Note: CYST TGLs = 1-2

Thyroid Gland

C Cell

Adenoma

C Cell

Hyperplasia

Mild

Note: ADENOMA TGLs = 3-3

Uterus

Endometrium

Hyperplasia

Cystic, Glandular, Mild

Note: HYPERPLASIA TGLs = 2-2

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8762

TRT#: 10

SEX: Female

DAY ON TEST: 730

DOSE: 0 PPM 10-0

DISP: Terminal Sacrifice

HISTO: 852112

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

**OBSERVATIONS**

Liver

Angiectasis

Mild

Basophilic Focus

Mild

Eosinophilic Focus

Bile Duct

Hyperplasia

Mild

Periovarn Tiss

Cyst

Ovary

Note: CYST TGLs = 2-2,3-2

Uterus

Endometrium

Hyperplasia

Cystic, Glandular, Marked

Note: HYPERPLASIA TGLs = 1-3

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01  
**Test Type:** CHRONIC  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 08:38:09  
**First Dose M/F:** NA / NA  
**Lab:** BAT

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**ANIMAL ID:** 8763

**TRT#:** 10

**SEX:** Female

**DAY ON TEST:** 731

**DOSE:** 0 PPM 10-0

**DISP:** Terminal Sacrifice

**HISTO:** 852113

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

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**OBSERVATIONS**

Liver

Basophilic Focus

Moderate

Eosinophilic Focus

Moderate

Bile Duct

Hyperplasia

Mild

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**PRIMARY CAUSE OF DEATH**

-

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01  
Test Type: CHRONIC  
Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014  
Time Report Requested: 08:38:09  
First Dose M/F: NA / NA  
Lab: BAT

ANIMAL ID: 8764

TRT#: 10

SEX: Female

DAY ON TEST: 731

DOSE: 0 PPM 10-0

DISP: Terminal Sacrifice

HISTO: 852114

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Spleen

Stomach - Forestomach

Stomach - Glandular

OBSERVATIONS

Eye

Retina

Atrophy

Marked

Lens

Cataract

Marked

Note: CATARACT TGLs = 1-2

Note: ATROPHY TGLs = 1-2

Liver

Basophilic Focus

Minimal

Degeneration

Cystic, Minimal

Eosinophilic Focus

Minimal

Bile Duct

Hyperplasia

Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:09

**First Dose M/F:** NA / NA

**Lab:** BAT

**ANIMAL ID:** 8765

**TRT#:** 10

**SEX:** Female

**DAY ON TEST:** 731

**DOSE:** 0 PPM 10-0

**DISP:** Terminal Sacrifice

**HISTO:** 852115

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Clitoral Gland

Bilateral

Adenoma

Inflammation

Chronic Active, Moderate

Note: ADENOMA TGLs = 1-3,2-3

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Minimal

Mammary Gland

Fibroadenoma

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8766

TRT#: 10

SEX: Female

DAY ON TEST: 731

DOSE: 0 PPM 10-0

DISP: Terminal Sacrifice

HISTO: 852116

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Islets, Pancreatic

Carcinoma

Note: [ CARCINOMA ] TGLs = 4-2

Liver

Basophilic Focus

Mild

Bile Duct

Hyperplasia

Mild

Leukemia Mononuclear

Ovary

Periovarn Tiss

Cyst

Note: CYST TGLs = 1-3,2-3

Pancreas

Acinus

Atrophy

Mild

Pituitary Gland

Pars Distalis

Adenoma

Pars Distalis

Cyst

Note: ADENOMA TGLs = 3-4

Spleen

Leukemia Mononuclear

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8767

TRT#: 10

SEX: Female

DAY ON TEST: 731

DOSE: 0 PPM 10-0

DISP: Terminal Sacrifice

HISTO: 852117

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Minimal

Eosinophilic Focus

Minimal

Hepatodiaphragmatic Nodule

Leukemia Mononuclear

Note: ANOM HEPAT LOB USED FOR HDN

Pituitary Gland

Pars Distalis

Adenoma

Note: ADENOMA TGLs = 2-3

Spleen

Leukemia Mononuclear

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL1-2, ANOM HEPAT LOB USED FOR HDL

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01  
**Test Type:** CHRONIC  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 08:38:09  
**First Dose M/F:** NA / NA  
**Lab:** BAT

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<b>ANIMAL ID:</b> 8768	<b>TRT#:</b> 10 <b>DOSE:</b> 0 PPM 10-0	<b>SEX:</b> Female <b>DISP:</b> Terminal Sacrifice	<b>DAY ON TEST:</b> 732 <b>HISTO:</b> 852118
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**ORGAN AND ACCOUNTABLE SITE STATUS**

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**NORMAL**

Spleen	Stomach - Forestomach	Stomach - Glandular
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**OBSERVATIONS**

Liver		Basophilic Focus	Minimal
		Eosinophilic Focus	Minimal
Ovary	Periovarn Tiss	Cyst	
Note: CYST	TGLs = 1-2		
Pituitary Gland	Pars Distalis	Cyst	
Note: CYST	TGLs = 2-3		

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PRIMARY CAUSE OF DEATH

-

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\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01  
**Test Type:** CHRONIC  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 08:38:09  
**First Dose M/F:** NA / NA  
**Lab:** BAT

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**ANIMAL ID:** 8769

**TRT#:** 10

**SEX:** Female

**DAY ON TEST:** 732

**DOSE:** 0 PPM 10-0

**DISP:** Terminal Sacrifice

**HISTO:** 852119

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

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**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Minimal

Inflammation

Chronic Active, Mild

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**PRIMARY CAUSE OF DEATH**

-

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8770

TRT#: 10

SEX: Female

DAY ON TEST: 732

DOSE: 0 PPM 10-0

DISP: Terminal Sacrifice

HISTO: 852120

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Intestine Small

Duodenum

Schwannoma Malignant

Note: [ SCHWANNOMA MAL ] TGLs = 4-3

Liver

Basophilic Focus

Mild

Mammary Gland

Carcinoma

Note: [ CARCINOMA ] TGLs = 1-2

Pituitary Gland

Pars Distalis

Hyperplasia

Mild

Note: HYPERPLASIA TGLs = 3-3

Tongue

Squamous Cell Papilloma

Note: PAPILOMA SQUA TGLs = 2-3

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL1-2, SKIN MASS IS MAMMARY TUMOR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8771

TRT#: 10

SEX: Female

DAY ON TEST: 579

DOSE: 0 PPM 10-0

DISP: Moribund Sacrifice

HISTO: 852121

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Kidney	Lung	Nose	Ovary
Pancreas	Parathyroid Gland	Salivary Glands	Stomach - Forestomach
Stomach - Glandular	Trachea	Urinary Bladder	

MISSING

Mammary Gland	Thymus
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OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
Clitoral Gland		Hyperplasia	Mild
		Inflammation	Chronic Active, Mild
Heart		Degeneration	Chronic, Mild
Liver		Basophilic Focus	Mild
		Eosinophilic Focus	Minimal
	Bile Duct	Hyperplasia	Minimal
		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Pituitary Gland	Pars Distalis	Hyperplasia	Mild
Skin	Subcut Tiss	Fibroma	
Note: FIBROMA	TGLs = 1-11		
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 2-1 ]			
Thyroid Gland	C Cell	Hyperplasia	Moderate
Uterus	Endometrium	Hyperplasia	Cystic, Glandular, Moderate

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SAC DUE TO LEUKEMIA AND LARGE SUBCUTIS TUMOR

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:09

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8772

**TRT#:** 10

**SEX:** Female

**DAY ON TEST:** 732

**DOSE:** 0 PPM 10-0

**DISP:** Terminal Sacrifice

**HISTO:** 852122

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

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**OBSERVATIONS**

Liver

Basophilic Focus

Mild

---

**PRIMARY CAUSE OF DEATH**

-

---

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8773

TRT#: 10

SEX: Female

DAY ON TEST: 710

DOSE: 0 PPM 10-0

DISP: Moribund Sacrifice

HISTO: 852123

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Brain	Esophagus
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Lymph Node
Nose	Ovary	Pancreas	Parathyroid Gland
Pituitary Gland	Salivary Glands	Skin	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	Urinary Bladder

OBSERVATIONS

Adrenal Gland	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
	Cortex	Vacuolization Cytoplasmic	Mild
Clitoral Gland		Inflammation	Chronic Active, Mild
Heart		Leukemia Mononuclear	
Kidney		Leukemia Mononuclear	
		Nephropathy	Chronic, Mild
Liver	Bile Duct	Hyperplasia	Minimal
		Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 2-4			
Lung		Leukemia Mononuclear	
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-11 ]			
Thyroid Gland	C Cell	Hyperplasia	Moderate
Uterus	Endometrium	Hyperplasia	Cystic, Glandular, Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8774

TRT#: 10

SEX: Female

DAY ON TEST: 732

DOSE: 0 PPM 10-0

DISP: Terminal Sacrifice

HISTO: 852124

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Clitoral Gland

Inflammation

Chronic Active, Marked

Note: INFLAMMATION TGLs = 1-2

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Mild

Vacuolization Cytoplasmic

Moderate

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:09

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8775

**TRT#:** 10

**SEX:** Female

**DAY ON TEST:** 733

**DOSE:** 0 PPM 10-0

**DISP:** Terminal Sacrifice

**HISTO:** 852125

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

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**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Mild

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**PRIMARY CAUSE OF DEATH**

-

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8776

TRT#: 10

SEX: Female

DAY ON TEST: 707

DOSE: 0 PPM 10-0

DISP: Moribund Sacrifice

HISTO: 852126

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Esophagus
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Lung
Lymph Node	Nose	Ovary	Parathyroid Gland
Salivary Glands	Skin	Spleen	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	Urinary Bladder
Uterus			

OBSERVATIONS

Adrenal Gland	Cortex	Adenoma	
	Cortex	Hyperplasia	Mild
	Cortex	Hypertrophy	Mild
	Cortex	Vacuolization Cytoplasmic	Mild
Brain		Compression	
		Hydrocephalus	Moderate
Clitoral Gland		Inflammation	Chronic Active, Mild
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Mild
Liver		Basophilic Focus	Minimal
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Moderate
Pancreas	Acinus	Atrophy	Mild
Pituitary Gland	Pars Distalis	Adenoma	
Note: ADENOMA TGLs = 1-7			
Thyroid Gland	C Cell	Adenoma	Moderate

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO PITUITARY TUMOR

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:09

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8777

**TRT#:** 10

**SEX:** Female

**DAY ON TEST:** 733

**DOSE:** 0 PPM 10-0

**DISP:** Terminal Sacrifice

**HISTO:** 852127

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

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**OBSERVATIONS**

Liver Leukemia Mononuclear

[ Leukemia Mononuclear TGLS = 2-2 ]

Spleen Leukemia Mononuclear

[ Leukemia Mononuclear TGLS = 1-3 ]

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**PRIMARY CAUSE OF DEATH**

-

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8778

TRT#: 10

SEX: Female

DAY ON TEST: 666

DOSE: 0 PPM 10-0

DISP: Moribund Sacrifice

HISTO: 852128

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Adrenal Gland - Medulla	Bone	Bone Marrow	Esophagus
Heart	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Lung	Lymph Node	Nose	Ovary
Pancreas	Salivary Glands	Skin	Spleen
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder	Uterus		

**MISSING**

Parathyroid Gland

**OBSERVATIONS**

Adrenal Gland	Cortex	Hyperplasia	Mild
	Cortex	Vacuolization Cytoplasmic	Mild
Brain		Compression	
		Hydrocephalus	Moderate
Clitoral Gland		Inflammation	Chronic Active, Mild
Kidney		Nephropathy	Chronic, Mild
Liver		Basophilic Focus	Mild
		Inflammation	Chronic Active, Minimal
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Moderate
Pituitary Gland	Pars Distalis	Adenoma	
Note: ADENOMA TGLs = 1-7			
Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO PITUITARY TUMOR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8779

TRT#: 10

SEX: Female

DAY ON TEST: 733

DOSE: 0 PPM 10-0

DISP: Terminal Sacrifice

HISTO: 852129

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Inflammation

Chronic Active, Minimal

Pituitary Gland

Pars Distalis

Adenoma

Note: ADENOMA

TGLs = 1-2

Stomach

Forestomach

Acanthosis

Minimal

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE





Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8781

TRT#: 10

SEX: Female

DAY ON TEST: 733

DOSE: 0 PPM 10-0

DISP: Terminal Sacrifice

HISTO: 852131

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Mild

Bile Duct

Hyperplasia

Mild

Inflammation

Chronic Active, Mild

Leukemia Mononuclear

Lymph Node

Mesenteric

Cyst

Note: CYST

TGLs = 3-4

Ovary

Periovarn Tiss

Cyst

Note: CYST

TGLs = 2-3

Pituitary Gland

Pars Distalis

Adenoma

Note: ADENOMA

TGLs = 1-2

Spleen

Leukemia Mononuclear

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:09

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8782

**TRT#:** 10

**SEX:** Female

**DAY ON TEST:** 733

**DOSE:** 0 PPM 10-0

**DISP:** Terminal Sacrifice

**HISTO:** 852132

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

---

**OBSERVATIONS**

Liver

Basophilic Focus

Minimal

Eosinophilic Focus

Mild

Inflammation

Chronic Active, Minimal

Pituitary Gland

Pars Distalis

Adenoma

Note: ADENOMA

TGLs = 1-2

---

**PRIMARY CAUSE OF DEATH**

-

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\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:09

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8783

**TRT#:** 10

**SEX:** Female

**DAY ON TEST:** 736

**DOSE:** 0 PPM 10-0

**DISP:** Terminal Sacrifice

**HISTO:** 852133

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

---

**OBSERVATIONS**

Liver

Basophilic Focus

Minimal

Inflammation

Chronic Active, Mild

Mammary Gland

Fibroadenoma

Note: FIBROADENOMA TGLs = 1-2

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**PRIMARY CAUSE OF DEATH**

-

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Animal Note: TGL1-2, SKIN MASS IS MAMMARY TUMOR

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8784

TRT#: 10

SEX: Female

DAY ON TEST: 736

DOSE: 0 PPM 10-0

DISP: Terminal Sacrifice

HISTO: 852134

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Mesentery

Inflammation

Chronic Active, Moderate

Note: INFLAMMATION TGLs = 2-2

Pituitary Gland

Pars Distalis

Adenoma

Note: ADENOMA TGLs = 1-3

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL3-4, ANOM HEPAT LOB USED TO CODE HDN

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:09

**First Dose M/F:** NA / NA

**Lab:** BAT

**ANIMAL ID:** 8785

**TRT#:** 10

**SEX:** Female

**DAY ON TEST:** 736

**DOSE:** 0 PPM 10-0

**DISP:** Terminal Sacrifice

**HISTO:** 852135

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Bile Duct

Hyperplasia

Mild

Ovary

Periovarn Tiss

Cyst

Note: CYST TGLs = 1-2

Pituitary Gland

Pars Distalis

Cyst

Note: CYST TGLs = 2-3

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:09

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8786

**TRT#:** 10

**SEX:** Female

**DAY ON TEST:** 736

**DOSE:** 0 PPM 10-0

**DISP:** Terminal Sacrifice

**HISTO:** 852136

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

---

**OBSERVATIONS**

Clitoral Gland

Inflammation

Chronic Active, Marked

Note: INFLAMMATION TGLs = 1-2

Liver

Basophilic Focus

Mild

Pituitary Gland

Pars Distalis

Adenoma

---

Note: ADENOMA TGLs = 2-3

**PRIMARY CAUSE OF DEATH**

-

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8787

TRT#: 10

SEX: Female

DAY ON TEST: 724

DOSE: 0 PPM 10-0

DISP: Moribund Sacrifice

HISTO: 852137

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Esophagus
Heart	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Lung	Lymph Node	Nose	Ovary
Pancreas	Parathyroid Gland	Salivary Glands	Skin
Spleen	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder	Uterus	

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
Brain		Compression	
		Hydrocephalus	Mild
Clitoral Gland		Inflammation	Chronic Active, Mild
Kidney		Nephropathy	Chronic, Mild
Liver		Basophilic Focus	Minimal
		Inflammation	Chronic Active, Mild
		Vacuolization Cytoplasmic	Moderate
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Fibroadenoma	
		Hyperplasia	Cystic, Moderate
Note: FIBROADENOMA TGLs = 1-11			
Pituitary Gland	Pars Distalis	Adenoma	
Note: ADENOMA TGLs = 4-7			
Thyroid Gland	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO PITUITARY TUMOR

Animal Note: TGL1-11, SKIN MASS IS MAMMARY GLAND TUMOR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8788

TRT#: 10

SEX: Female

DAY ON TEST: 652

DOSE: 0 PPM 10-0

DISP: Moribund Sacrifice

HISTO: 852138

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Clitoral Gland	Esophagus	Heart	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Lung	Lymph Node
Nose	Ovary	Pancreas	Parathyroid Gland
Salivary Glands	Skin	Spleen	Stomach - Forestomach
Stomach - Glandular	Trachea	Uterus	

MISSING

Thymus

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
Kidney		Nephropathy	Chronic, Minimal
Liver		Basophilic Focus	Minimal
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Moderate
Pituitary Gland	Pars Distalis	Hyperplasia	Mild
Spinal Cord	Nerve	Demyelination	Mild
Thyroid Gland	C Cell	Carcinoma	
	C Cell	Hyperplasia	Moderate
Urinary Bladder	Mucosa	Hyperplasia	Papillary, Marked
[ Hyperplasia TGLS = 1-13 ]			

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SAC DUE TO POSTERIOR PARALYSIS

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8789

TRT#: 10

SEX: Female

DAY ON TEST: 737

DOSE: 0 PPM 10-0

DISP: Terminal Sacrifice

HISTO: 852139

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Clitoral Gland

Adenoma

Note: ADENOMA TGLs = 1-2

Liver

Basophilic Focus

Moderate

Bile Duct

Hyperplasia

Minimal

Inflammation

Chronic Active, Mild

Pituitary Gland

Pars Distalis

Adenoma

Note: ADENOMA TGLs = 2-3

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL3-4, LIVER PIGMENT NOT APPARENT ON MICRO

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8790

TRT#: 10

SEX: Female

DAY ON TEST: 606

DOSE: 0 PPM 10-0

DISP: Moribund Sacrifice

HISTO: 852140

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Brain	Esophagus
Heart	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Islets, Pancreatic	Nose	Pituitary Gland	Salivary Glands
Skin	Spleen	Stomach - Forestomach	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	

MISSING

Clitoral Gland	Parathyroid Gland
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OBSERVATIONS

Adrenal Gland Note: ADENOCARC TGLs = 6-7	Capsule	Adenocarcinoma	Metastatic (Uterus)
Eye Note: CATARACT TGLs = 1-11 Note: ATROPHY TGLs = 1-11	Retina Lens	Atrophy Cataract	Marked Moderate
Intestine Small	Duodenum, Serosa	Adenocarcinoma	Metastatic (Uterus)
Kidney [ Hydronephrosis TGLS = 5-1 ]		Hydronephrosis	Moderate
Liver		Vacuolization Cytoplasmic	Marked
Lung		Adenocarcinoma	Metastatic (Uterus)
Lymph Node Note: MANDIBULAR LN NORMAL Note: ADENOCARC TGLs = 7-13	Mediastinal Mesenteric	Adenocarcinoma Adenocarcinoma	Metastatic (Uterus) Metastatic (Uterus)
Mammary Gland		Hyperplasia	Cystic, Moderate
Ovary Note: ADENOCARC TGLs = 4-10	Periovarn Tiss	Adenocarcinoma	Metastatic (Uterus)
Pancreas Note: ADENOCARC TGLs = 2-12		Adenocarcinoma	Metastatic (Uterus)
Stomach Note: ADENOCARC TGLs = 9-15	Serosa	Adenocarcinoma	Metastatic (Uterus)

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:09

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8790

**TRT#:** 10

**SEX:** Female

**DAY ON TEST:** 606

**DOSE:** 0 PPM 10-0

**DISP:** Moribund Sacrifice

**HISTO:** 852140

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

Thyroid Gland

C Cell

Adenoma

C Cell

Hyperplasia

Mild

Uterus

Adenocarcinoma

Note: ADENOCARC TGLs = 3-14,8-14

---

**PRIMARY CAUSE OF DEATH**

-

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Animal Note: MORIBUND SACRIFICE DUE TO MALIGNANT TUMOR OF UTERUS

---

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:09

**First Dose M/F:** NA / NA

**Lab:** BAT

**ANIMAL ID:** 8791

**TRT#:** 10

**SEX:** Female

**DAY ON TEST:** 737

**DOSE:** 0 PPM 10-0

**DISP:** Terminal Sacrifice

**HISTO:** 852141

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Ovary

Periovarn Tiss

Cyst

Note: CYST TGLs = 2-2

Pituitary Gland

Pars Distalis

Adenoma

Pars Distalis

Cyst

Note: ADENOMA TGLs = 1-3

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:09

**First Dose M/F:** NA / NA

**Lab:** BAT

---

**ANIMAL ID:** 8792

**TRT#:** 10

**SEX:** Female

**DAY ON TEST:** 737

**DOSE:** 0 PPM 10-0

**DISP:** Terminal Sacrifice

**HISTO:** 852142

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

---

**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Degeneration

Cystic, Minimal

Pituitary Gland

Pars Distalis

Hyperplasia

Mild

Note: HYPERPLASIA TGLs = 1-2

---

**PRIMARY CAUSE OF DEATH**

-

---

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:09

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8793

**TRT#:** 10

**SEX:** Female

**DAY ON TEST:** 737

**DOSE:** 0 PPM 10-0

**DISP:** Terminal Sacrifice

**HISTO:** 852143

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

---

**OBSERVATIONS**

Liver

Basophilic Focus

Minimal

Bile Duct

Hyperplasia

Minimal

Pituitary Gland

Pars Distalis

Adenoma

Pars Distalis

Cyst

Note: ADENOMA TGLs = 1-2

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**PRIMARY CAUSE OF DEATH**

-

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8794

TRT#: 10

SEX: Female

DAY ON TEST: 635

DOSE: 0 PPM 10-0

DISP: Moribund Sacrifice

HISTO: 852144

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Brain	Esophagus
Heart	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Nose	Ovary	Pancreas	Parathyroid Gland
Salivary Glands	Skin	Stomach - Glandular	Trachea
Urinary Bladder	Uterus		

OBSERVATIONS

Adrenal Gland	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
	Cortex	Vacuolization Cytoplasmic	Mild
Clitoral Gland		Inflammation	Chronic Active, Mild
Kidney		Leukemia Mononuclear	
		Nephropathy	Chronic, Mild
Liver	Bile Duct	Hyperplasia	Moderate
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Moderate
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
	Mediastinal	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Moderate
Pituitary Gland	Pars Distalis	Hyperplasia	Moderate
Spleen		Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 1-1			
Stomach	Forestomach	Acanthosis	Mild
	Forestomach	Inflammation	Chronic Active, Mild
Thymus		Leukemia Mononuclear	
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8795

TRT#: 10

SEX: Female

DAY ON TEST: 737

DOSE: 0 PPM 10-0

DISP: Terminal Sacrifice

HISTO: 852145

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Eye

Choroid

Hemorrhage

Moderate

Note: HEMORRHAGE TGLs = 2-3

Liver

Basophilic Focus

Minimal

Inflammation

Chronic Active, Minimal

Mammary Gland

Fibroadenoma

Note: FIBROADENOMA TGLs = 1-2

Pituitary Gland

Pars Distalis

Cyst

Note: CYST TGLs = 3-4

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL1-2, SKIN MASS IS MAMMARY TUMOR

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8796

TRT#: 10

SEX: Female

DAY ON TEST: 738

DOSE: 0 PPM 10-0

DISP: Terminal Sacrifice

HISTO: 852146

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Mild

Hepatodiaphragmatic Nodule

Inflammation

Chronic Active, Minimal

Note: ANOM HEPAT LOB USED FOR HDN

Note: ANOM HEPAT LOB TGLs = 3-2

Ovary

Follicle

Cyst

Note: CYST TGLs = 1-3

Pituitary Gland

Pars Distalis

Adenoma

Note: ADENOMA TGLs = 4-4

Uterus

Polyp Stromal

Note: POLYP STROMAL TGLs = 2-3

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL3-2, ANOM HEPAT LOB USED FOR HDN

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8797

TRT#: 10

SEX: Female

DAY ON TEST: 738

DOSE: 0 PPM 10-0

DISP: Terminal Sacrifice

HISTO: 852147

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Minimal

Bile Duct

Hyperplasia

Minimal

Note: BASOPH FOCUS TGLs = 2-2

Uterus

Polyp Stromal

Note: POLYP STROMAL TGLs = 1-3

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8798

TRT#: 10

SEX: Female

DAY ON TEST: 738

DOSE: 0 PPM 10-0

DISP: Terminal Sacrifice

HISTO: 852148

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Minimal

Ovary

Periovarn Tiss

Cyst

Note: CYST TGLs = 1-2

Pituitary Gland

Pars Distalis

Adenoma

Note: ADENOMA TGLs = 2-3

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8799

TRT#: 10

SEX: Female

DAY ON TEST: 738

DOSE: 0 PPM 10-0

DISP: Terminal Sacrifice

HISTO: 852149

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Bile Duct

Hyperplasia

Mild

Leukemia Mononuclear

Ovary

Periovarn Tiss

Cyst

Note: CYST TGLs = 3-2

Pituitary Gland

Pars Distalis

Cyst

Note: CYST TGLs = 1-3

Pars Distalis

Hyperplasia

Moderate

Spleen

Leukemia Mononuclear

Uterus

Polyp Stromal

Note: POLYP STROMAL TGLs = 2-2,3-2

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL2-2,3-2, STROMAL POLYP EXTENDS FROM UTERUS TO VAGINA

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8800

TRT#: 10

SEX: Female

DAY ON TEST: 738

DOSE: 0 PPM 10-0

DISP: Terminal Sacrifice

HISTO: 852150

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Minimal

Hepatodiaphragmatic Nodule

Leukemia Mononuclear

Note: ANOM HEPAT LOB TGLs = 1-4

Note: ANOM HEPAT LOB USED FOR HDN

Pituitary Gland

Pars Distalis

Cyst

Pars Distalis

Hyperplasia

Moderate

Note: CYST TGLs = 4-3

Spleen

Leukemia Mononuclear

Uterus

Polyp Stromal

Note: POLYP STROMAL TGLs = 3-2

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL2-4, 1MM FOCUS PROBABLY CUT THROUGH, NOT IN BLOCK

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:09

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8801

**TRT#:** 11

**SEX:** Female

**DAY ON TEST:** 729

**DOSE:** 3 PPM 1-1

**DISP:** Terminal Sacrifice

**HISTO:** 852821

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

---

**OBSERVATIONS**

Liver

Basophilic Focus

Eosinophilic Focus

Inflammation

Chronic Active, Mild

Leukemia Mononuclear

Spleen

Leukemia Mononuclear

---

**PRIMARY CAUSE OF DEATH**

-

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8802

TRT#: 11

SEX: Female

DAY ON TEST: 729

DOSE: 3 PPM 1-1

DISP: Terminal Sacrifice

HISTO: 852822

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Heart

Degeneration

Chronic, Mild

[ Degeneration TGLS = 3-4 ]

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Minimal

Hepatodiaphragmatic Nodule

Bile Duct

Hyperplasia

Mild

Vacuolization Cytoplasmic

Minimal

Note: ANOM HEPAT LOB USED FOR HDN

Note: ANOM HEPAT LOB TGLs = 1-2

Thyroid Gland

C Cell

Adenoma

[ Adenoma TGLS = 2-3 ]

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL1-2, ANOM HEPAT LOB IS A HDN

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8803

TRT#: 11

SEX: Female

DAY ON TEST: 729

DOSE: 3 PPM 1-1

DISP: Terminal Sacrifice

HISTO: 852823

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Adrenal Gland - Cortex

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Adrenal Gland

Medulla

Pheochromocytoma Malignant

[ Pheochromocytoma Malignant TGLS = 1-2 ]

Liver

Cytomegaly

Minimal

Eosinophilic Focus

Minimal

Bile Duct

Hyperplasia

Mild

Inflammation

Chronic Active, Moderate

Note: INFLAMMATION TGLs = 2-3

Spleen

Hematopoietic Cell Proliferation

Moderate

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8804

TRT#: 11

SEX: Female

DAY ON TEST: 729

DOSE: 3 PPM 1-1

DISP: Terminal Sacrifice

HISTO: 852824

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Bile Duct

Hyperplasia

Mild

Inflammation

Chronic Active, Mild

Ovary

Periovarn Tiss

Cyst

Note: CYST TGLs = 2-3

Uterus

Endometrium

Hyperplasia

Cystic, Glandular, Mild

Note: HYPERPLASIA TGLs = 1-2

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL3-4, NODULE NOT APPARENT

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8805

TRT#: 11

SEX: Female

DAY ON TEST: 729

DOSE: 3 PPM 1-1

DISP: Terminal Sacrifice

HISTO: 852825

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Stomach - Forestomach

Stomach - Glandular

OBSERVATIONS

Liver

Basophilic Focus

Moderate

Eosinophilic Focus

Moderate

Hepatocellular Adenoma

Multiple

Bile Duct

Hyperplasia

Mild

Hypertrophy

Mild

Leukemia Mononuclear

Vacuolization Cytoplasmic

Minimal

Note: HEPATOCLR ADEN TGLs = 3-3

Note: LEUKEMIA MONUC TGLs = 1-7

Pituitary Gland

Pars Distalis

Adenoma

Note: ADENOMA TGLs = 6-2

Spleen

Leukemia Mononuclear

Tongue

Squamous Cell Papilloma

Note: PAPILLOMA SQUA TGLs = 5-6

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8806

TRT#: 11

SEX: Female

DAY ON TEST: 615

DOSE: 3 PPM 1-1

DISP: Moribund Sacrifice

HISTO: 852826

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Esophagus	Heart	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lung	Lymph Node	Nose
Ovary	Pancreas	Parathyroid Gland	Salivary Glands
Skin	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder	Uterus	

OBSERVATIONS

Brain		Compression	
		Hydrocephalus	Mild
Clitoral Gland		Inflammation	Chronic Active, Mild
Kidney		Nephropathy	Chronic, Mild
Liver		Basophilic Focus	Mild
	Bile Duct	Hyperplasia	Mild
		Inflammation	Chronic Active, Mild
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Moderate
Pituitary Gland	Pars Distalis	Adenoma	
Note: ADENOMA TGLs = 1-7			
Spleen		Depletion Lymphoid	Mild
Thyroid Gland	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL2-1, SPLEEN DIDN'T APPEAR LARGE AT TRIM OR ON MICRO

Animal Note: MORIBUND SACRIFICE DUE TO PITUITARY TUMOR

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01  
**Test Type:** CHRONIC  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 08:38:09  
**First Dose M/F:** NA / NA  
**Lab:** BAT

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<b>ANIMAL ID:</b> 8807	<b>TRT#:</b> 11	<b>SEX:</b> Female	<b>DAY ON TEST:</b> 730
	<b>DOSE:</b> 3 PPM 1-1	<b>DISP:</b> Terminal Sacrifice	<b>HISTO:</b> 852827

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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**NORMAL**

Spleen	Stomach - Forestomach
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**OBSERVATIONS**

Liver		Basophilic Focus	Mild
		Eosinophilic Focus	
	Bile Duct	Hyperplasia	Mild
Stomach	Glandular	Mineralization	Moderate

---

**PRIMARY CAUSE OF DEATH**

-

---

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:09

**First Dose M/F:** NA / NA

**Lab:** BAT

**ANIMAL ID:** 8808

**TRT#:** 11

**SEX:** Female

**DAY ON TEST:** 730

**DOSE:** 3 PPM 1-1

**DISP:** Terminal Sacrifice

**HISTO:** 852828

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

**OBSERVATIONS**

Intestine Large

Colon

Diverticulum

Mild

[ Diverticulum TGLS = 2-3 ]

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Inflammation

Chronic Active, Moderate

Ovary

Periovarn Tiss

Cyst

[ Cyst TGLS = 1-2 ]

Stomach

Glandular

Mineralization

Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8809

TRT#: 11

SEX: Female

DAY ON TEST: 730

DOSE: 3 PPM 1-1

DISP: Terminal Sacrifice

HISTO: 852829

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Moderate

Eosinophilic Focus

Bile Duct

Hyperplasia

Mild

Vacuolization Cytoplasmic

Mild

Fibroadenoma

Mammary Gland

Note: FIBROADENOMA TGLs = 1-2

Mesentery

Note: INFLAMMATION TGLs = 3-4

Inflammation

Chronic Active, Moderate

Ovary

Periovarn Tiss

Cyst

[ Cyst TGLS = 2-3 ]

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL1-2, SKIN MASS IS MAMMARY TUMOR

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01  
**Test Type:** CHRONIC  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 08:38:09  
**First Dose M/F:** NA / NA  
**Lab:** BAT

**ANIMAL ID:** 8810

**TRT#:** 11

**SEX:** Female

**DAY ON TEST:** 730

**DOSE:** 3 PPM 1-1

**DISP:** Terminal Sacrifice

**HISTO:** 852830

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Inflammation

Chronic Active, Mild

Vacuolization Cytoplasmic

Minimal

Ovary

Granulosa-Theca Tumor Malignant

[ Granulosa-Theca Tumor Malignant TGLS = 2-3 ]

Pituitary Gland

Pars Distalis

Adenoma

[ Adenoma TGLS = 1-2 ]

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01  
**Test Type:** CHRONIC  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 08:38:09  
**First Dose M/F:** NA / NA  
**Lab:** BAT

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<b>ANIMAL ID:</b> 8811	<b>TRT#:</b> 11	<b>SEX:</b> Female	<b>DAY ON TEST:</b> 730
	<b>DOSE:</b> 3 PPM 1-1	<b>DISP:</b> Terminal Sacrifice	<b>HISTO:</b> 852831

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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**NORMAL**

Spleen	Stomach - Forestomach	Stomach - Glandular
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**OBSERVATIONS**

Liver		Basophilic Focus	Mild
		Eosinophilic Focus	Mild
	Bile Duct	Hyperplasia	Mild
Ovary	Periovarn Tiss	Cyst	
Note: CYST	TGLs = 1-2,2-3		

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**PRIMARY CAUSE OF DEATH**

-

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**Experiment Number:** 05077-01  
**Test Type:** CHRONIC  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 08:38:09  
**First Dose M/F:** NA / NA  
**Lab:** BAT

---

**ANIMAL ID:** 8812

**TRT#:** 11

**SEX:** Female

**DAY ON TEST:** 731

**DOSE:** 3 PPM 1-1

**DISP:** Terminal Sacrifice

**HISTO:** 852832

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

---

**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Lymph Node

Mesenteric

Lymphoma Malignant Lymphocytic

Lymphoma Malignant Lymphocytic

Spleen

Lymphoma Malignant Lymphocytic

---

**PRIMARY CAUSE OF DEATH**

-

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8813

TRT#: 11

SEX: Female

DAY ON TEST: 719

DOSE: 3 PPM 1-1

DISP: Moribund Sacrifice

HISTO: 852833

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Brain	Esophagus	Heart
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Nose
Ovary	Pancreas	Parathyroid Gland	Salivary Glands
Skin	Stomach - Forestomach	Trachea	Urinary Bladder
Uterus			

MISSING

Mammary Gland

OBSERVATIONS

Adrenal Gland	Cortex	Hypertrophy	Mild
	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
	Cortex	Vacuolization Cytoplasmic	Mild
Bone Marrow	Femoral	Leukemia Mononuclear	
Clitoral Gland		Inflammation	Chronic Active, Mild
Kidney		Nephropathy	Chronic, Mild
Liver		Hepatocellular Adenoma	
	Bile Duct	Hyperplasia	Moderate
		Hypertrophy	Moderate
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Moderate
Note: LEUKEMIA MONUC	TGLs = 1-4		
Note: [ HEPATOCLR ADEN ]	TGLs = 3-12		
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
	Mediastinal	Leukemia Mononuclear	
	Mesenteric	Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 4-2,5-13,6-7		
Pituitary Gland	Pars Distalis	Adenoma	
	Pars Distalis	Leukemia Mononuclear	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:09

**First Dose M/F:** NA / NA

**Lab:** BAT

---

**ANIMAL ID:** 8813

**TRT#:** 11

**SEX:** Female

**DAY ON TEST:** 719

**DOSE:** 3 PPM 1-1

**DISP:** Moribund Sacrifice

**HISTO:** 852833

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

Note: ADENOMA TGLs = 7-7

Spleen

Leukemia Mononuclear

[ Leukemia Mononuclear TGLS = 8-11 ]

Stomach

Glandular

Inflammation

Chronic Active, Mild

Glandular

Ulcer

Mild

Note: ULCER TGLs = 9-6

Thymus

Leukemia Mononuclear

Thyroid Gland

C Cell

Hyperplasia

Moderate

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**PRIMARY CAUSE OF DEATH**

-

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Animal Note: TGL9-6, FOCI ARE IN GLANDULAR STOMACH

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

---

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01  
**Test Type:** CHRONIC  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 08:38:09  
**First Dose M/F:** NA / NA  
**Lab:** BAT

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**ANIMAL ID:** 8814

**TRT#:** 11

**SEX:** Female

**DAY ON TEST:** 731

**DOSE:** 3 PPM 1-1

**DISP:** Terminal Sacrifice

**HISTO:** 852834

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

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**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Moderate

Inflammation

Chronic Active, Mild

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**PRIMARY CAUSE OF DEATH**

-

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\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:09

**First Dose M/F:** NA / NA

**Lab:** BAT

---

**ANIMAL ID:** 8815

**TRT#:** 11

**SEX:** Female

**DAY ON TEST:** 731

**DOSE:** 3 PPM 1-1

**DISP:** Terminal Sacrifice

**HISTO:** 852835

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

---

**OBSERVATIONS**

Liver

Bile Duct

Basophilic Focus

Mild

Hyperplasia

Mild

Inflammation

Chronic Active, Mild

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**PRIMARY CAUSE OF DEATH**

-

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8816

TRT#: 11

SEX: Female

DAY ON TEST: 487

DOSE: 3 PPM 1-1

DISP: Moribund Sacrifice

HISTO: 852836

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Esophagus	Heart	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Jejunum	Islets, Pancreatic
Lymph Node	Nose	Ovary	Pancreas
Parathyroid Gland	Salivary Glands	Skin	Spleen
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder	Uterus		

MISSING

Intestine Small - Ileum

OBSERVATIONS

Brain		Compression	
		Hydrocephalus	Moderate
Clitoral Gland		Hyperplasia	Moderate
		Inflammation	Chronic Active, Mild
Kidney		Nephropathy	Chronic, Mild
Liver		Basophilic Focus	Minimal
		Inflammation	Chronic Active, Minimal
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Moderate
Pituitary Gland	Pars Distalis	Adenoma	
Note: ADENOMA TGLs = 1-7			
Thyroid Gland	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO PITUITARY TUMOR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8817

TRT#: 11

SEX: Female

DAY ON TEST: 731

DOSE: 3 PPM 1-1

DISP: Terminal Sacrifice

HISTO: 852837

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Eye	Harderian Gland	Lung	Stomach - Forestomach
Stomach - Glandular			

OBSERVATIONS

Eye			
Note: TGL1-2, EYES NCL ON MICRO			
Liver		Basophilic Focus	Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Pituitary Gland	Pars Distalis	Adenoma	
Note: ADENOMA TGLs = 6-6			
Spleen		Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 3-4			
Uterus	Cervix	Cyst	
Note: CYST TGLs = 4-5			

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL5-7, NCL AT TRIM

Animal Note: TGL2-3, HARDERIAN GLAND NCL ON MICRO

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:09

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8818

**TRT#:** 11

**SEX:** Female

**DAY ON TEST:** 731

**DOSE:** 3 PPM 1-1

**DISP:** Terminal Sacrifice

**HISTO:** 852838

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

---

**OBSERVATIONS**

Liver

Basophilic Focus

Minimal

Hypertrophy

Minimal

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**PRIMARY CAUSE OF DEATH**

-

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\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:09

**First Dose M/F:** NA / NA

**Lab:** BAT

---

**ANIMAL ID:** 8819

**TRT#:** 11

**SEX:** Female

**DAY ON TEST:** 731

**DOSE:** 3 PPM 1-1

**DISP:** Terminal Sacrifice

**HISTO:** 852839

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

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**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Bile Duct

Hyperplasia

Mild

Uterus

Adenocarcinoma

[ Adenocarcinoma TGLS = 1-2 ]

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**PRIMARY CAUSE OF DEATH**

-

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8820

TRT#: 11

SEX: Female

DAY ON TEST: 639

DOSE: 3 PPM 1-1

DISP: Moribund Sacrifice

HISTO: 852840

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone Marrow	Brain	Esophagus	Heart
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Nose
Ovary	Parathyroid Gland	Pituitary Gland	Salivary Glands
Skin	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder		

OBSERVATIONS

Adrenal Gland	Medulla	Hyperplasia	Mild
	Cortex	Hypertrophy	Mild
	Cortex	Vacuolization Cytoplasmic	Mild
Bone	Cranium	Fracture	
	Femur	Hyperostosis	
Note: [ FRACTURE ] TGLs = 5-12			
Clitoral Gland		Inflammation	Chronic Active, Mild
Kidney		Nephropathy	Chronic, Minimal
Liver		Eosinophilic Focus	Minimal
	Bile Duct	Hyperplasia	Marked
		Hypertrophy	Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Marked
Note: LEUKEMIA MONUC TGLs = 2-4			
Lung		Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 4-2,4-3			
Lymph Node	Mandibular	Leukemia Mononuclear	
	Mediastinal	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Moderate
Pancreas	Acinus	Atrophy	Mild
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-11 ]			
Thyroid Gland	C Cell	Hyperplasia	Moderate

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:09

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8820

**TRT#:** 11

**SEX:** Female

**DAY ON TEST:** 639

**DOSE:** 3 PPM 1-1

**DISP:** Moribund Sacrifice

**HISTO:** 852840

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

Uterus

Cervix

Cyst

---

**PRIMARY CAUSE OF DEATH**

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Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8821

TRT#: 11

SEX: Female

DAY ON TEST: 592

DOSE: 3 PPM 1-1

DISP: Moribund Sacrifice

HISTO: 852841

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Brain	Clitoral Gland	Esophagus
Heart	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Kidney	Nose	Ovary	Parathyroid Gland
Pituitary Gland	Salivary Glands	Skin	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	Urinary Bladder

OBSERVATIONS

Adrenal Gland	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
Bone Marrow	Femoral	Leukemia Mononuclear	
Liver		Eosinophilic Focus	Minimal
	Bile Duct	Hyperplasia	Moderate
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Moderate
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
	Mediastinal	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Moderate
Pancreas		Leukemia Mononuclear	
Spleen		Leukemia Mononuclear	
		[ Leukemia Mononuclear TGLS = 1-1 ]	
Thyroid Gland	C Cell	Hyperplasia	Moderate
Uterus	Endometrium	Hyperplasia	Cystic, Glandular, Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8822

TRT#: 11

SEX: Female

DAY ON TEST: 727

DOSE: 3 PPM 1-1

DISP: Moribund Sacrifice

HISTO: 852842

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Brain	Esophagus
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Nose
Ovary	Pancreas	Parathyroid Gland	Skin
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder	Uterus		

MISSING

Lymph Node	Salivary Glands
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OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Cortex	Necrosis	Moderate
	Medulla	Pheochromocytoma Benign	
Clitoral Gland		Inflammation	Chronic Active, Mild
Heart		Degeneration	Chronic, Moderate
Kidney		Nephropathy	Chronic, Mild
Liver		Eosinophilic Focus	Minimal
	Bile Duct	Hyperplasia	Moderate
		Hypertrophy	Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Marked
		Leukemia Mononuclear	
Lung			
Lymph Node			
Note: MANDIBULAR LN MISSING			
Mammary Gland		Hyperplasia	Cystic, Moderate
Pituitary Gland	Pars Distalis	Adenoma	
	Pars Distalis	Cyst	
Note: ADENOMA TGLs = 4-7			
Note: CYST TGLs = 5-7			
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-11 ]			

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:09

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8822

**TRT#:** 11

**SEX:** Female

**DAY ON TEST:** 727

**DOSE:** 3 PPM 1-1

**DISP:** Moribund Sacrifice

**HISTO:** 852842

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

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Thyroid Gland

C Cell

Adenoma

C Cell

Hyperplasia

Moderate

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**PRIMARY CAUSE OF DEATH**

-

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Animal Note: TGL2-4, PIGMENT NOT APPARENT ON MICRO

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

Animal Note: TGL3-4, NO LIVER NODULE SEEN AT TRIM

---

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8823

TRT#: 11

SEX: Female

DAY ON TEST: 684

DOSE: 3 PPM 1-1

DISP: Natural Death

HISTO: 852843

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Kidney	Lymph Node	Nose	Ovary
Pancreas	Parathyroid Gland	Salivary Glands	Skin
Spleen	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder		

OBSERVATIONS

Adrenal Gland	Cortex	Vacuolization Cytoplasmic	Mild
Clitoral Gland		Inflammation	Chronic Active, Mild
Heart		Degeneration	Chronic, Moderate
Liver		Basophilic Focus	
		Eosinophilic Focus	
		Necrosis	Mild
Lung		Adenocarcinoma	Metastatic (Uterus)
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Marked
Note: HYPERPLASIA TGLs = 5-11			
Pituitary Gland	Pars Distalis	Hyperplasia	Moderate
Note: HYPERPLASIA TGLs = 1-7			
Thyroid Gland	C Cell	Hyperplasia	Mild
Uterus		Adenocarcinoma	
		Dilatation	Marked
Note: DILATATION TGLs = 4-12			

PRIMARY CAUSE OF DEATH

-

Animal Note: CAUSE OF DEATH, ADENOCARCINOMA OF UTERUS

Animal Note: TGL2-7,3-7, ONLY ONE FOCUS SEEN AT TRIM

Animal Note: TGL5-11, SKIN MASS IS MAMMARY GLAND GALACTOCELE

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8824

TRT#: 11

SEX: Female

DAY ON TEST: 732

DOSE: 3 PPM 1-1

DISP: Terminal Sacrifice

HISTO: 852844

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Bile Duct

Hyperplasia

Minimal

Vacuolization Cytoplasmic

Minimal

Fibroadenoma

Mammary Gland

Note: FIBROADENOMA TGLs = 1-3

Pituitary Gland

Pars Distalis

Adenoma

Note: ADENOMA TGLs = 2-2

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL1-3, SKIN MASS IS MAMMARY TUMOR

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01  
Test Type: CHRONIC  
Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014  
Time Report Requested: 08:38:09  
First Dose M/F: NA / NA  
Lab: BAT

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ANIMAL ID: 8825	TRT#: 11	SEX: Female	DAY ON TEST: 732
	DOSE: 3 PPM 1-1	DISP: Terminal Sacrifice	HISTO: 852845

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ORGAN AND ACCOUNTABLE SITE STATUS

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NORMAL

Stomach - Forestomach	Stomach - Glandular
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OBSERVATIONS

Liver		Basophilic Focus	Mild
		Eosinophilic Focus	Minimal
	Bile Duct	Hyperplasia	Mild
		Hypertrophy	Minimal
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Note: LEUKEMIA MONUC TGLs = 4-5			
Pituitary Gland	Pars Distalis	Adenoma	
Note: ADENOMA TGLs = 1-2			
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 2-3 ]			
Thyroid Gland	C Cell	Carcinoma	
[ Carcinoma TGLS = 3-4 ]			

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PRIMARY CAUSE OF DEATH

-

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8826

TRT#: 11

SEX: Female

DAY ON TEST: 720

DOSE: 3 PPM 1-1

DISP: Moribund Sacrifice

HISTO: 852846

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Esophagus
Heart	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Nose	Pancreas	Parathyroid Gland	Salivary Glands
Skin	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder		

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Cortex	Hypertrophy	Mild
Brain		Hemorrhage	Minimal
Clitoral Gland	Duct	Dilatation	Moderate
		Inflammation	Chronic Active, Mild
Kidney		Nephropathy	Chronic, Moderate
Liver		Basophilic Focus	Mild
		Leukemia Mononuclear	
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Moderate
Ovary	Periovarn Tiss	Cyst	
Note: CYST	TGLs = 2-10		
Pituitary Gland	Pars Distalis	Hyperplasia	Mild
Spleen		Leukemia Mononuclear	
	[ Leukemia Mononuclear TGLS = 1-11 ]		
Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Moderate
Uterus	Endometrium	Hyperplasia	Cystic, Glandular, Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:09

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8827

**TRT#:** 11

**SEX:** Female

**DAY ON TEST:** 732

**DOSE:** 3 PPM 1-1

**DISP:** Terminal Sacrifice

**HISTO:** 852847

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

---

**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Bile Duct

Hyperplasia

Minimal

---

**PRIMARY CAUSE OF DEATH**

-

---

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01  
**Test Type:** CHRONIC  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 08:38:09  
**First Dose M/F:** NA / NA  
**Lab:** BAT

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<b>ANIMAL ID:</b> 8828	<b>TRT#:</b> 11	<b>SEX:</b> Female	<b>DAY ON TEST:</b> 732
	<b>DOSE:</b> 3 PPM 1-1	<b>DISP:</b> Terminal Sacrifice	<b>HISTO:</b> 852848

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

**NORMAL**

Stomach - Forestomach	Stomach - Glandular
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**OBSERVATIONS**

Liver		Basophilic Focus	Mild
		Eosinophilic Focus	Minimal
	Bile Duct	Hyperplasia	Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Spleen		Leukemia Mononuclear	
Thyroid Gland	C Cell	Carcinoma	
[ Carcinoma TGLS = 2-3 ]			
Uterus		Polyp Stromal	
[ Polyp Stromal TGLS = 1-2 ]			

---

**PRIMARY CAUSE OF DEATH**

-

---

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01  
**Test Type:** CHRONIC  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 08:38:09  
**First Dose M/F:** NA / NA  
**Lab:** BAT

---

<b>ANIMAL ID:</b> 8829	<b>TRT#:</b> 11	<b>SEX:</b> Female	<b>DAY ON TEST:</b> 733
	<b>DOSE:</b> 3 PPM 1-1	<b>DISP:</b> Terminal Sacrifice	<b>HISTO:</b> 852849

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

**NORMAL**

Spleen	Stomach - Forestomach	Stomach - Glandular
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**OBSERVATIONS**

Liver		Basophilic Focus	Mild
	Bile Duct	Hyperplasia	Mild
		Hypertrophy	Minimal
		Vacuolization Cytoplasmic	Mild
Ovary	Periovarn Tiss	Cyst	
Note: CYST	TGLs = 1-2		
Pituitary Gland	Pars Distalis	Hyperplasia	Moderate
[ Hyperplasia TGLS = 2-3 ]			

---

**PRIMARY CAUSE OF DEATH**

-

---

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:09

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8830

**TRT#:** 11

**SEX:** Female

**DAY ON TEST:** 733

**DOSE:** 3 PPM 1-1

**DISP:** Terminal Sacrifice

**HISTO:** 852850

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

---

**OBSERVATIONS**

Liver

Basophilic Focus

Minimal

Inflammation

Chronic Active, Mild

Ovary

Periovarn Tiss

Cyst

Note: CYST TGLs = 1-2,2-3

---

**PRIMARY CAUSE OF DEATH**

-

---

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01  
**Test Type:** CHRONIC  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 08:38:09  
**First Dose M/F:** NA / NA  
**Lab:** BAT

**ANIMAL ID:** 8831

**TRT#:** 11

**SEX:** Female

**DAY ON TEST:** 733

**DOSE:** 3 PPM 1-1

**DISP:** Terminal Sacrifice

**HISTO:** 852851

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Hepatocellular Adenoma

Bile Duct

Hyperplasia

Mild

Inflammation

Chronic Active, Mild

Leukemia Mononuclear

Note: [ HEPATOCLR ADEN ] TGLs = 3-4

Spleen

Leukemia Mononuclear

Uterus

Fibrosis

Moderate

Polyp Stromal

[ Fibrosis TGLS = 1-2 ]

[ Polyp Stromal TGLS = 2-3 ]

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01  
**Test Type:** CHRONIC  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 08:38:09  
**First Dose M/F:** NA / NA  
**Lab:** BAT

**ANIMAL ID:** 8832

**TRT#:** 11

**SEX:** Female

**DAY ON TEST:** 733

**DOSE:** 3 PPM 1-1

**DISP:** Terminal Sacrifice

**HISTO:** 852852

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

**OBSERVATIONS**

Liver		Basophilic Focus Inflammation Leukemia Mononuclear	Chronic Active, Mild
Pituitary Gland [ Adenoma TGLS = 2-3 ]	Pars Distalis	Adenoma	
Spleen		Leukemia Mononuclear	
Stomach	Glandular	Mineralization	Moderate
Uterus	Endometrium	Hyperplasia	Cystic, Glandular, Moderate

Note: HYPERPLASIA TGLs = 1-2

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 05077-01  
**Test Type:** CHRONIC  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 08:38:09  
**First Dose M/F:** NA / NA  
**Lab:** BAT

**ANIMAL ID:** 8833

**TRT#:** 11

**SEX:** Female

**DAY ON TEST:** 733

**DOSE:** 3 PPM 1-1

**DISP:** Terminal Sacrifice

**HISTO:** 852853

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Bile Duct

Hyperplasia

Mild

Inflammation

Chronic Active, Mild

Fibroadenoma

Multiple

Mammary Gland

Note: FIBROADENOMA TGLs = 2-3,3-4

Ovary

Periovarn Tiss

Cyst

[ Cyst TGLS = 1-2 ]

Thyroid GI

Note: TGL2-3,3-4, SKIN MASSES ARE MAMMARY TUMORS

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8834

TRT#: 11

SEX: Female

DAY ON TEST: 736

DOSE: 3 PPM 1-1

DISP: Terminal Sacrifice

HISTO: 852854

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Bile Duct

Hyperplasia

Mild

Pituitary Gland

Pars Distalis

Adenoma

Pars Distalis

Hyperplasia

Moderate

[ Adenoma TGLS = 1-2 ]

Stomach

Glandular

Mineralization

Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01  
**Test Type:** CHRONIC  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 08:38:09  
**First Dose M/F:** NA / NA  
**Lab:** BAT

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<b>ANIMAL ID:</b> 8835	<b>TRT#:</b> 11	<b>SEX:</b> Female	<b>DAY ON TEST:</b> 736
	<b>DOSE:</b> 3 PPM 1-1	<b>DISP:</b> Terminal Sacrifice	<b>HISTO:</b> 852855

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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**NORMAL**

Spleen	Stomach - Glandular
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**OBSERVATIONS**

Liver		Basophilic Focus	Mild
	Bile Duct	Hyperplasia	Mild
Pituitary Gland	Pars Distalis	Adenoma	
[ Adenoma TGLS = 1-2 ]			
Stomach	Forestomach	Diverticulum	Minimal
Note: [ DIVERTICULUM ] TGLs = 2-3			

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PRIMARY CAUSE OF DEATH

-

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\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01  
**Test Type:** CHRONIC  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 08:38:09  
**First Dose M/F:** NA / NA  
**Lab:** BAT

**ANIMAL ID:** 8836

**TRT#:** 11

**SEX:** Female

**DAY ON TEST:** 736

**DOSE:** 3 PPM 1-1

**DISP:** Terminal Sacrifice

**HISTO:** 852856

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Minimal

Bile Duct

Hyperplasia

Mild

Inflammation

Chronic Active, Mild

Leukemia Mononuclear

Spleen

Leukemia Mononuclear

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8837

TRT#: 11

SEX: Female

DAY ON TEST: 736

DOSE: 3 PPM 1-1

DISP: Terminal Sacrifice

HISTO: 852857

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Clitoral Gland

Duct

Dilatation

Moderate

Note: DILATATION TGLs = 2-3

Liver

Bile Duct

Eosinophilic Focus

Moderate

Hyperplasia

Marked

Leukemia Mononuclear

Note: LEUKEMIA MONUC TGLs = 4-5

Pituitary Gland

Pars Distalis

Adenoma

Note: ADENOMA TGLs = 1-2

Spleen

Leukemia Mononuclear

Note: LEUKEMIA MONUC TGLs = 3-4

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01  
**Test Type:** CHRONIC  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 08:38:09  
**First Dose M/F:** NA / NA  
**Lab:** BAT

---

**ANIMAL ID:** 8838

**TRT#:** 11

**SEX:** Female

**DAY ON TEST:** 736

**DOSE:** 3 PPM 1-1

**DISP:** Terminal Sacrifice

**HISTO:** 852858

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

---

**OBSERVATIONS**

Liver

Bile Duct

Basophilic Focus

Hyperplasia

Hypertrophy

Mild

Mild

Minimal

---

**PRIMARY CAUSE OF DEATH**

-

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\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01  
**Test Type:** CHRONIC  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 08:38:09  
**First Dose M/F:** NA / NA  
**Lab:** BAT

**ANIMAL ID:** 8839

**TRT#:** 11

**SEX:** Female

**DAY ON TEST:** 737

**DOSE:** 3 PPM 1-1

**DISP:** Terminal Sacrifice

**HISTO:** 852859

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Eye

Retina

Atrophy

Marked

Lens

Cataract

Moderate

[ Atrophy TGLS = 1-2 ]

[ Cataract TGLS = 1-2 ]

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Moderate

Bile Duct

Hyperplasia

Mild

Inflammation

Chronic Active, Mild

Leukemia Mononuclear

Vacuolization Cytoplasmic

Mild

Spleen

Leukemia Mononuclear

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01  
**Test Type:** CHRONIC  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 08:38:09  
**First Dose M/F:** NA / NA  
**Lab:** BAT

---

**ANIMAL ID:** 8840

**TRT#:** 11

**SEX:** Female

**DAY ON TEST:** 737

**DOSE:** 3 PPM 1-1

**DISP:** Terminal Sacrifice

**HISTO:** 852860

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

---

**OBSERVATIONS**

Liver

Bile Duct

Basophilic Focus

Mild

Hyperplasia

Mild

Inflammation

Chronic Active, Mild

Vacuolization Cytoplasmic

Mild

---

**PRIMARY CAUSE OF DEATH**

-

---

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 05077-01  
**Test Type:** CHRONIC  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 08:38:09  
**First Dose M/F:** NA / NA  
**Lab:** BAT

**ANIMAL ID:** 8841

**TRT#:** 11

**SEX:** Female

**DAY ON TEST:** 737

**DOSE:** 3 PPM 1-1

**DISP:** Terminal Sacrifice

**HISTO:** 852861

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver	Bile Duct	Hyperplasia Leukemia Mononuclear Vacuolization Cytoplasmic	Marked  Marked
Note: LEUKEMIA MONUC TGLs = 2-3			
Pituitary Gland	Pars Distalis	Adenoma	
Note: ADENOMA TGLs = 3-4			
Skin	Subcut Tiss	Fibrosarcoma	
Note: FIBROSARC TGLs = 4-5			
Spleen		Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 1-2			

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:09

**First Dose M/F:** NA / NA

**Lab:** BAT

---

**ANIMAL ID:** 8842

**TRT#:** 11

**SEX:** Female

**DAY ON TEST:** 737

**DOSE:** 3 PPM 1-1

**DISP:** Terminal Sacrifice

**HISTO:** 852862

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

**NORMAL**

Spleen

Stomach - Forestomach

---

**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Bile Duct

Hyperplasia

Mild

Pituitary Gland

Pars Distalis

Adenoma

Note: ADENOMA

TGLs = 1-2

Stomach

Glandular

Mineralization

Mild

---

**PRIMARY CAUSE OF DEATH**

-

---

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8843

TRT#: 11

SEX: Female

DAY ON TEST: 737

DOSE: 3 PPM 1-1

DISP: Terminal Sacrifice

HISTO: 852863

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Minimal

Hepatodiaphragmatic Nodule

Bile Duct

Hyperplasia

Mild

Inflammation

Chronic Active, Mild

Note: ANOM HEPAT LOB TGLs = 1-3

Note: ANOM HEPAT LOB USED FOR HDN

Pituitary Gland

Pars Distalis

Hyperplasia

Mild

Note: HYPERPLASIA TGLs = 2-2

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL1-3, ANOM HEPAT LOB IS A HDN

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8844

TRT#: 11

SEX: Female

DAY ON TEST: 738

DOSE: 3 PPM 1-1

DISP: Terminal Sacrifice

HISTO: 852864

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Leukemia Mononuclear

Pituitary Gland

Pars Distalis

Hyperplasia

Moderate

[ Hyperplasia TGLS = 2-3 ]

Spleen

Leukemia Mononuclear

Thyroid Gland

C Cell

Hyperplasia

Mild

Note: HYPERPLASIA TGLs = 1-2

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:09

**First Dose M/F:** NA / NA

**Lab:** BAT

---

**ANIMAL ID:** 8845

**TRT#:** 11

**SEX:** Female

**DAY ON TEST:** 738

**DOSE:** 3 PPM 1-1

**DISP:** Terminal Sacrifice

**HISTO:** 852865

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

---

**OBSERVATIONS**

Liver

Basophilic Focus

Minimal

Pituitary Gland

Pars Distalis

Adenoma

Note: ADENOMA TGLs = 1-2

---

**PRIMARY CAUSE OF DEATH**

-

---

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01  
**Test Type:** CHRONIC  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 08:38:09  
**First Dose M/F:** NA / NA  
**Lab:** BAT

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<b>ANIMAL ID:</b> 8846	<b>TRT#:</b> 11 <b>DOSE:</b> 3 PPM 1-1	<b>SEX:</b> Female <b>DISP:</b> Terminal Sacrifice	<b>DAY ON TEST:</b> 738 <b>HISTO:</b> 852866
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**ORGAN AND ACCOUNTABLE SITE STATUS**

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**NORMAL**

Spleen	Stomach - Forestomach	Stomach - Glandular	Uterus
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**OBSERVATIONS**

Liver	Bile Duct	Basophilic Focus Hyperplasia Hyperplasia Inflammation	Mild Mild Focal, Minimal Chronic Active, Mild
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---

**PRIMARY CAUSE OF DEATH**

-

Animal Note: TGL1-2, NO LESION FOUND IN WET TISSUE

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8847

TRT#: 11

SEX: Female

DAY ON TEST: 706

DOSE: 3 PPM 1-1

DISP: Moribund Sacrifice

HISTO: 852867

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Nose	Ovary	Parathyroid Gland	Salivary Glands
Skin	Stomach - Forestomach	Stomach - Glandular	Trachea
Urinary Bladder	Uterus		

OBSERVATIONS

Brain		Compression	
		Hydrocephalus	Moderate
Clitoral Gland		Inflammation	Chronic Active, Mild
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Mild
Liver		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Moderate
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Moderate
Pancreas	Acinus	Atrophy	Minimal
Pituitary Gland	Pars Distalis	Adenoma	
Note: ADENOMA	TGLs = 1-1		
Spleen		Leukemia Mononuclear	
Thymus		Leukemia Mononuclear	
Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO PITUITARY TUMOR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8848

TRT#: 11

SEX: Female

DAY ON TEST: 734

DOSE: 3 PPM 1-1

DISP: Moribund Sacrifice

HISTO: 852868

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Brain	Esophagus	Heart
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Nose
Parathyroid Gland	Salivary Glands	Skin	Stomach - Forestomach
Trachea	Urinary Bladder		

OBSERVATIONS

Adrenal Gland	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
	Cortex	Necrosis	Moderate
Bone Marrow	Femoral	Leukemia Mononuclear	
Clitoral Gland	Duct	Dilatation	Mild
		Inflammation	Chronic Active, Mild
Kidney		Leukemia Mononuclear	
		Nephropathy	Chronic, Mild
Liver	Bile Duct	Hyperplasia	Mild
		Hypertrophy	Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Marked
Note: LEUKEMIA MONUC	TGLs = 7-4		
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
	Mediastinal	Leukemia Mononuclear	
	Mesenteric	Leukemia Mononuclear	
	Pancreatic	Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 1-15,2-14,4-12,5-16		
Mammary Gland		Hyperplasia	Cystic, Moderate
Ovary		Leukemia Mononuclear	
Pancreas	Acinus	Atrophy	Mild
		Leukemia Mononuclear	
Pituitary Gland	Pars Distalis	Adenoma	

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8848

TRT#: 11

SEX: Female

DAY ON TEST: 734

DOSE: 3 PPM 1-1

DISP: Moribund Sacrifice

HISTO: 852868

**ORGAN AND ACCOUNTABLE SITE STATUS**

Note: ADENOMA	TGLs = 3-7		
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 6-13 ]			
Stomach	Glandular	Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 9-17		
Thymus		Leukemia Mononuclear	
Thyroid Gland	C Cell	Hyperplasia	Moderate
Uterus		Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 8-11,8-10		

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:09

**First Dose M/F:** NA / NA

**Lab:** BAT

**ANIMAL ID:** 8849

**TRT#:** 11

**SEX:** Female

**DAY ON TEST:** 738

**DOSE:** 3 PPM 1-1

**DISP:** Terminal Sacrifice

**HISTO:** 852869

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Bile Duct

Hyperplasia

Mild

Inflammation

Chronic Active, Minimal

Leukemia Mononuclear

Pituitary Gland

Pars Distalis

Adenoma

[ Adenoma TGLS = 1-2 ]

Spleen

Leukemia Mononuclear

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8850

TRT#: 11

SEX: Female

DAY ON TEST: 187

DOSE: 3 PPM 1-1

DISP: Moribund Sacrifice

HISTO: 852870

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Esophagus	Heart	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Kidney	Liver
Lung	Lymph Node	Nose	Ovary
Pancreas	Parathyroid Gland	Pituitary Gland	Salivary Glands
Spleen	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder	Uterus	

OBSERVATIONS

Clitoral Gland		Inflammation	Chronic Active, Mild
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Skin	Lip, Subcut Tiss	Foreign Body	Marked
	Lip, Subcut Tiss	Inflammation	Chronic Active, Marked
Note: INFLAMMATION TGLs = 1-11			
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL2-7, MANDIBULAR LYMPH NODES WITHIN NORMAL LIMITS

Animal Note: MORIBUND SACRIFICE DUE TO FOREIGN BODY IN SUBCUTIS

Animal Note: OF LIP

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8851

TRT#: 12

SEX: Female

DAY ON TEST: 588

DOSE: 10 PPM 0-3

DISP: Moribund Sacrifice

HISTO: 852581

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Brain	Clitoral Gland
Esophagus	Heart	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lymph Node	Nose	Ovary
Parathyroid Gland	Salivary Glands	Skin	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	Urinary Bladder

OBSERVATIONS

Adrenal Gland	Cortex	Necrosis	Mild
Kidney		Nephropathy	Chronic, Mild
Liver	Subserosa	Congestion	Multifocal, Mild
		Eosinophilic Focus	Moderate
	Bile Duct	Hyperplasia	Marked
	Oval Cell	Hyperplasia	Moderate
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Marked
Note: CONGESTION TGLs = 3-4,3-12			
Lung		Leukemia Mononuclear	
Lymph Node			
Note: MANDIBULAR LN MISSING			
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Moderate
Pituitary Gland	Pars Distalis	Cyst	
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 4-11 ]			
Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Mild
Uterus		Dilatation	Moderate
Note: DILATATION TGLs = 1-10			

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:09

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8851

**TRT#:** 12

**SEX:** Female

**DAY ON TEST:** 588

**DOSE:** 10 PPM 0-3

**DISP:** Moribund Sacrifice

**HISTO:** 852581

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01  
**Test Type:** CHRONIC  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 08:38:09  
**First Dose M/F:** NA / NA  
**Lab:** BAT

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<b>ANIMAL ID:</b> 8852	<b>TRT#:</b> 12	<b>SEX:</b> Female	<b>DAY ON TEST:</b> 729
	<b>DOSE:</b> 10 PPM 0-3	<b>DISP:</b> Terminal Sacrifice	<b>HISTO:</b> 852582

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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**NORMAL**

Spleen	Stomach - Forestomach
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**OBSERVATIONS**

Liver		Eosinophilic Focus	Mild
	Bile Duct	Hyperplasia	Mild
		Inflammation	Chronic, Multifocal, Minimal
		Vacuolization Cytoplasmic	Moderate
Stomach	Glandular	Mineralization	Mild

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**PRIMARY CAUSE OF DEATH**

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8853

TRT#: 12

SEX: Female

DAY ON TEST: 729

DOSE: 10 PPM 0-3

DISP: Terminal Sacrifice

HISTO: 852583

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Mild

Bile Duct

Hyperplasia

Mild

Hypertrophy

Minimal

Leukemia Mononuclear

Vacuolization Cytoplasmic

Mild

Spleen

Leukemia Mononuclear

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8854

TRT#: 12

SEX: Female

DAY ON TEST: 705

DOSE: 10 PPM 0-3

DISP: Moribund Sacrifice

HISTO: 852584

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Clitoral Gland	Esophagus	Heart	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Lung	Lymph Node
Nose	Ovary	Pancreas	Parathyroid Gland
Salivary Glands	Skin	Stomach - Forestomach	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	Uterus

**OBSERVATIONS**

Adrenal Gland	Cortex	Vacuolization Cytoplasmic	Moderate
Kidney		Nephropathy	Chronic, Mild
Liver		Basophilic Focus	Moderate
		Eosinophilic Focus	Mild
	Bile Duct	Hyperplasia	Mild
		Hypertrophy	Minimal
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Moderate
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Pituitary Gland	Pars Distalis	Adenoma	
Spleen		Leukemia Mononuclear	
Thyroid Gland	C Cell	Hyperplasia	Moderate
Tongue		Squamous Cell Carcinoma	
Note: [ SQUAM CEL CARC ] TGLs = 2-11			

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL1-6.1, DILATED CECUM WITHIN NORMAL LIMITS ON MICRO

Animal Note: MORIBUND SACRIFICE DUE TO TONGUE MASS

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8855

TRT#: 12

SEX: Female

DAY ON TEST: 724

DOSE: 10 PPM 0-3

DISP: Moribund Sacrifice

HISTO: 852585

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Esophagus	Heart	Intestine Large - Cecum	Intestine Large - Colon
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Lung	Lymph Node	Nose	Ovary
Pancreas	Parathyroid Gland	Salivary Glands	Skin
Spleen	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder	Uterus	

OBSERVATIONS

Brain		Compression	
		Hydrocephalus	Mild
Clitoral Gland		Hyperplasia	Mild
Intestine Large	Rectum	Parasite Metazoan	
Kidney		Nephropathy	Chronic, Moderate
Liver		Basophilic Focus	Mild
		Eosinophilic Focus	Mild
		Hypertrophy	Minimal
		Inflammation	Chronic Active, Mild
		Vacuolization Cytoplasmic	Mild
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Moderate
Pituitary Gland	Pars Distalis	Adenoma	
[ Adenoma TGLS = 1-11 ]			
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO PITUITARY TUMOR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01  
Test Type: CHRONIC  
Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014  
Time Report Requested: 08:38:09  
First Dose M/F: NA / NA  
Lab: BAT

ANIMAL ID: 8856

TRT#: 12

SEX: Female

DAY ON TEST: 729

DOSE: 10 PPM 0-3

DISP: Terminal Sacrifice

HISTO: 852586

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Spleen

Stomach - Forestomach

Stomach - Glandular

OBSERVATIONS

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Marked

Hepatocellular Adenoma

Multiple

Bile Duct

Hyperplasia

Mild

Oval Cell

Hyperplasia

Minimal

Hypertrophy

Mild

Inflammation

Chronic, Multifocal, Minimal

Vacuolization Cytoplasmic

Mild

Note: HEPATOCLR ADEN TGLs = 4-5,5-4

Ovary

Periovarn Tiss

Cyst

Note: CYST TGLs = 1-2,2-2

Uterus

Sarcoma Stromal

Note: [ SARC STROMAL ] TGLs = 3-3

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8857

TRT#: 12

SEX: Female

DAY ON TEST: 730

DOSE: 10 PPM 0-3

DISP: Terminal Sacrifice

HISTO: 852587

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Moderate

Bile Duct

Hyperplasia

Moderate

Inflammation

Chronic Active, Mild

Vacuolization Cytoplasmic

Moderate

Ovary

Periovarn Tiss

Cyst

[ Cyst TGLS = 1-2 ]

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8858

TRT#: 12

SEX: Female

DAY ON TEST: 730

DOSE: 10 PPM 0-3

DISP: Terminal Sacrifice

HISTO: 852588

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Bile Duct

Eosinophilic Focus

Mild

Hyperplasia

Mild

Inflammation

Chronic Active, Mild

Vacuolization Cytoplasmic

Moderate

Fibroadenoma

Mammary Gland

Note: FIBROADENOMA TGLs = 1-5

Pituitary Gland

Pars Distalis

Adenoma

Pars Intermed

Adenoma

Note: [ ADENOMA ] TGLs = 2-3

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL4-2, NO NODULE ONLY LYMPHOID PATCH

Animal Note: TGL1-5, SKIN MASS IS MAMMARY TUMOR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8859

TRT#: 12

SEX: Female

DAY ON TEST: 730

DOSE: 10 PPM 0-3

DISP: Terminal Sacrifice

HISTO: 852589

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Moderate

Hypertrophy

Minimal

Leukemia Mononuclear

Vacuolization Cytoplasmic

Mild

Fibroadenoma

Mammary Gland

Note: FIBROADENOMA TGLs = 1-2

Pituitary Gland

Pars Distalis

Adenoma

Note: ADENOMA TGLs = 2-4

Spleen

Leukemia Mononuclear

[ Leukemia Mononuclear TGLS = 3-3 ]

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL1-2, SKIN MASS IS MAMMARY TUMOR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8860

TRT#: 12

SEX: Female

DAY ON TEST: 730

DOSE: 10 PPM 0-3

DISP: Terminal Sacrifice

HISTO: 852590

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Moderate

Hypertrophy

Mild

Inflammation

Chronic Active, Mild

Leukemia Mononuclear

Vacuolization Cytoplasmic

Moderate

Spleen

Leukemia Mononuclear

Uterus

Polyp Stromal

[ Polyp Stromal TGLS = 1-2 ]

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8861

TRT#: 12

SEX: Female

DAY ON TEST: 615

DOSE: 10 PPM 0-3

DISP: Moribund Sacrifice

HISTO: 852591

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Esophagus	Heart	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lung	Lymph Node	Nose
Ovary	Pancreas	Parathyroid Gland	Salivary Glands
Skin	Spleen	Stomach - Forestomach	Stomach - Glandular
Trachea	Urinary Bladder	Uterus	

INSUFFICIENT TISSUE

Thymus

OBSERVATIONS

Brain		Compression	
		Hydrocephalus	Moderate
Clitoral Gland		Adenoma	
Note: [ ADENOMA ] TGLs = 2-11			
Kidney		Nephropathy	Chronic, Mild
Liver		Hypertrophy	Mild
		Inflammation	Chronic Active, Mild
		Vacuolization Cytoplasmic	Mild
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Moderate
Pituitary Gland	Pars Distalis	Adenoma	
Note: ADENOMA TGLs = 1-12			
Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO PITUITARY TUMOR

Animal Note: TGL2-11, SKIN MASS IS CLITORAL GLAND TUMOR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8862

TRT#: 12

SEX: Female

DAY ON TEST: 731

DOSE: 10 PPM 0-3

DISP: Terminal Sacrifice

HISTO: 852592

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Stomach - Forestomach

Stomach - Glandular

OBSERVATIONS

Liver

Basophilic Focus

Moderate

Eosinophilic Focus

Marked

Hepatocellular Adenoma

Multiple

Bile Duct

Hyperplasia

Mild

Oval Cell

Hyperplasia

Minimal

Hypertrophy

Mild

Inflammation

Chronic Active, Mild

Leukemia Mononuclear

Vacuolization Cytoplasmic

Moderate

Fibroadenoma

Mammary Gland

Note: FIBROADENOMA TGLs = 1-2

Spleen

Leukemia Mononuclear

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL1-2, SKIN MASS IS MAMMARY TUMOR

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8863

TRT#: 12

SEX: Female

DAY ON TEST: 576

DOSE: 10 PPM 0-3

DISP: Moribund Sacrifice

HISTO: 852593

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Esophagus	Heart	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Ovary	Pancreas
Parathyroid Gland	Salivary Glands	Skin	Stomach - Glandular
Trachea	Urinary Bladder	Uterus	

MISSING

Thymus

OBSERVATIONS

Clitoral Gland	Duct	Dilatation Inflammation	Mild Chronic Active, Mild
Kidney	Renal Tubule	Leukemia Mononuclear Mineralization Nephropathy	Mild Chronic, Minimal
Liver	Bile Duct	Eosinophilic Focus Hyperplasia Leukemia Mononuclear Vacuolization Cytoplasmic	Mild Moderate Marked
Note: LEUKEMIA MONUC TGLs = 2-12			
Lung		Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 4-2,4-3			
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Moderate
Nose	Mucosa	Inflammation	Chronic Active, Mild
Pituitary Gland	Pars Distalis	Adenoma	
Note: ADENOMA TGLs = 5-7			
Spleen		Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 1-11			
Stomach	Forestomach	Acanthosis	Mild
	Forestomach	Ulcer	Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:09

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8863

**TRT#:** 12

**SEX:** Female

**DAY ON TEST:** 576

**DOSE:** 10 PPM 0-3

**DISP:** Moribund Sacrifice

**HISTO:** 852593

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

Thyroid Gland

C Cell

Hyperplasia

Mild

---

PRIMARY CAUSE OF DEATH

-

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Animal Note: MORIBUND SACRIFICE DUE TO PITUITARY TUMOR AND LEUKEMIA

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8864

TRT#: 12

SEX: Female

DAY ON TEST: 731

DOSE: 10 PPM 0-3

DISP: Terminal Sacrifice

HISTO: 852594

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Eye

Retina

Atrophy

Marked

Lens

Cataract

Marked

Note: ATROPHY TGLs = 1-2

Note: CATARACT TGLs = 1-2

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Moderate

Bile Duct

Hyperplasia

Moderate

Hypertrophy

Minimal

Inflammation

Chronic, Multifocal, Mild

Vacuolization Cytoplasmic

Marked

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL3-4, NO DEFORMITY FOUND ON MICRO OF SPLEEN

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01  
**Test Type:** CHRONIC  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 08:38:09  
**First Dose M/F:** NA / NA  
**Lab:** BAT

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**ANIMAL ID:** 8865

**TRT#:** 12

**SEX:** Female

**DAY ON TEST:** 731

**DOSE:** 10 PPM 0-3

**DISP:** Terminal Sacrifice

**HISTO:** 852595

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

---

**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Marked

Hypertrophy

Minimal

Inflammation

Chronic, Multifocal, Mild

Leukemia Mononuclear

Vacuolization Cytoplasmic

Mild

Spleen

Leukemia Mononuclear

---

**PRIMARY CAUSE OF DEATH**

-

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8866

TRT#: 12

SEX: Female

DAY ON TEST: 731

DOSE: 10 PPM 0-3

DISP: Terminal Sacrifice

HISTO: 852596

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Marked

Bile Duct

Hyperplasia

Mild

Hypertrophy

Mild

Inflammation

Chronic, Multifocal, Mild

Vacuolization Cytoplasmic

Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8867

TRT#: 12

SEX: Female

DAY ON TEST: 731

DOSE: 10 PPM 0-3

DISP: Terminal Sacrifice

HISTO: 852597

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Marked

Bile Duct

Hyperplasia

Mild

Oval Cell

Hyperplasia

Mild

Hypertrophy

Mild

Inflammation

Chronic, Multifocal, Mild

Leukemia Mononuclear

Vacuolization Cytoplasmic

Moderate

Spleen

Leukemia Mononuclear

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8868

TRT#: 12

SEX: Female

DAY ON TEST: 732

DOSE: 10 PPM 0-3

DISP: Terminal Sacrifice

HISTO: 852598

**OBSERVATIONS**

Liver

Eosinophilic Focus

Marked

Hepatocellular Adenoma

Bile Duct

Hyperplasia

Mild

Oval Cell

Hyperplasia

Mild

Hypertrophy

Mild

Leukemia Mononuclear

Vacuolization Cytoplasmic

Moderate

Spleen

Leukemia Mononuclear

Stomach

Glandular

Sarcoma

Forestomach

Squamous Cell Carcinoma

Note: SQUAM CEL CARC TGLs = 2-3

Note: SARCOMA TGLs = 2-3

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01  
**Test Type:** CHRONIC  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 08:38:09  
**First Dose M/F:** NA / NA  
**Lab:** BAT

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**ANIMAL ID:** 8869

**TRT#:** 12

**SEX:** Female

**DAY ON TEST:** 732

**DOSE:** 10 PPM 0-3

**DISP:** Terminal Sacrifice

**HISTO:** 852599

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

---

**OBSERVATIONS**

Liver

Angiectasis

Mild

Basophilic Focus

Moderate

Eosinophilic Focus

Moderate

Hypertrophy

Mild

Inflammation

Chronic Active, Mild

Vacuolization Cytoplasmic

Mild

---

PRIMARY CAUSE OF DEATH

-

---

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8870

TRT#: 12

SEX: Female

DAY ON TEST: 691

DOSE: 10 PPM 0-3

DISP: Natural Death

HISTO: 852600

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Bone	Brain	Esophagus	Heart
Lung	Lymph Node	Ovary	Parathyroid Gland
Pituitary Gland	Salivary Glands	Stomach - Forestomach	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	

**MISSING**

Islets, Pancreatic	Pancreas
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**AUTO PRECLUDES DIAG.**

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone Marrow	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Nose	Skin	Thyroid Gland

**OBSERVATIONS**

Clitoral Gland	Duct	Dilatation	Mild
Kidney	Renal Tubule	Mineralization	Moderate
Liver		Hypertrophy	Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Moderate
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Spleen		Leukemia Mononuclear	
Uterus	Endometrium	Hyperplasia	Cystic, Glandular, Moderate
Note: HYPERPLASIA TGLs = 1-10			

PRIMARY CAUSE OF DEATH

-

Animal Note: CAUSE OF DEATH, LEUKEMIA MONONUCLEAR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8871

TRT#: 12

SEX: Female

DAY ON TEST: 732

DOSE: 10 PPM 0-3

DISP: Terminal Sacrifice

HISTO: 852601

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Adrenal Gland - Medulla

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Adrenal Gland

Cortex

Vacuolization Cytoplasmic

Marked

Note: VACUOLIZ CYTO TGLs = 1-2

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Minimal

Vacuolization Cytoplasmic

Marked

Pituitary Gland

Pars Intermed

Adenoma

Note: ADENOMA TGLs = 2-2

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01  
**Test Type:** CHRONIC  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 08:38:09  
**First Dose M/F:** NA / NA  
**Lab:** BAT

**ANIMAL ID:** 8872

**TRT#:** 12

**SEX:** Female

**DAY ON TEST:** 732

**DOSE:** 10 PPM 0-3

**DISP:** Terminal Sacrifice

**HISTO:** 852602

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Eosinophilic Focus

Moderate

Hepatocellular Adenoma

Bile Duct

Hyperplasia

Mild

Leukemia Mononuclear

Vacuolization Cytoplasmic

Mild

Note: HEPATOCLR ADEN TGLs = 2-3

Pituitary Gland

Pars Distalis

Adenoma

Note: ADENOMA TGLs = 3-4

Spleen

Leukemia Mononuclear

Note: LEUKEMIA MONUC TGLs = 1-1

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8873

TRT#: 12

SEX: Female

DAY ON TEST: 720

DOSE: 10 PPM 0-3

DISP: Moribund Sacrifice

HISTO: 852603

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Heart	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lymph Node	Nose	Ovary
Parathyroid Gland	Salivary Glands	Skin	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	Urinary Bladder
Uterus			

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
Clitoral Gland	Duct	Dilatation	Moderate
Note: DILATATION TGLs = 4-14			
Kidney		Nephropathy	Chronic, Mild
Liver		Basophilic Focus	Mild
		Eosinophilic Focus	Moderate
		Inflammation	Chronic Active, Moderate
		Vacuolization Cytoplasmic	Moderate
Lung	Interstitialium	Inflammation	Chronic Active, Mild
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Moderate
Pancreas	Acinus	Atrophy	Mild
		Ectopic Liver	
Pituitary Gland	Pars Distalis	Cyst	
	Pars Distalis	Hyperplasia	Mild
Spinal Cord	Nerve	Demyelination	Moderate
Spleen		Hematopoietic Cell Proliferation	Moderate
Thyroid Gland	C Cell	Hyperplasia	Moderate
Zymbal's Gland		Carcinoma	
Note: CARCINOMA TGLs = 1-13,2-13			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:09

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8873

**TRT#:** 12

**SEX:** Female

**DAY ON TEST:** 720

**DOSE:** 10 PPM 0-3

**DISP:** Moribund Sacrifice

**HISTO:** 852603

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Animal Note: MORIBUND SACRIFICE DUE TO MASS ON FACE

Animal Note: TGL1-13,2-13, SKIN MASS AND LACERATION ARE ZYMBALS TUMOR

Animal Note: MORIBUND SACRIFICE DUE TO MASS ON FACE

Animal Note: TGL3-11,3-12, TARSAL JOINTS APPEAR NORMAL ON MICRO

---

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8874

TRT#: 12

SEX: Female

DAY ON TEST: 732

DOSE: 10 PPM 0-3

DISP: Terminal Sacrifice

HISTO: 852604

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Moderate

Bile Duct

Hyperplasia

Moderate

Oval Cell

Hyperplasia

Mild

Hypertrophy

Mild

Inflammation

Chronic, Multifocal, Mild

Necrosis

Minimal

Vacuolization Cytoplasmic

Mild

Stomach

Forestomach

Acanthosis

Moderate

[ Acanthosis TGLS = 3-1 ]

Thyroid Gland

C Cell

Carcinoma

Note: CARCINOMA TGLs = 1-2

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8875

TRT#: 12

SEX: Female

DAY ON TEST: 733

DOSE: 10 PPM 0-3

DISP: Terminal Sacrifice

HISTO: 852605

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Mild

Hepatocellular Adenoma

Bile Duct

Hyperplasia

Mild

Inflammation

Chronic, Multifocal, Mild

Note: HEPATOCLR ADEN TGLs = 3-4

Mammary Gland

Fibroadenoma

Note: FIBROADENOMA TGLs = 2-3

Ovary

Periovarn Tiss

Cyst

Note: CYST TGLs = 4-5

Pituitary Gland

Pars Distalis

Adenoma

Note: ADENOMA TGLs = 1-2

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL2-3, SKIN MASS IS MAMMARY TUMOR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8876

TRT#: 12

SEX: Female

DAY ON TEST: 680

DOSE: 10 PPM 0-3

DISP: Moribund Sacrifice

HISTO: 852606

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Heart	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lung	Nose	Pancreas
Parathyroid Gland	Salivary Glands	Skin	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	Uterus

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Moderate
	Cortex	Vacuolization Cytoplasmic	Mild
Clitoral Gland	Duct	Dilatation	Moderate
		Inflammation	Chronic Active, Moderate
Kidney		Nephropathy	Chronic, Minimal
Liver		Basophilic Focus	Marked
		Eosinophilic Focus	Marked
	Bile Duct	Hyperplasia	Moderate
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Marked
Lymph Node	Mandibular	Leukemia Mononuclear	
	Mediastinal	Leukemia Mononuclear	
	Mesenteric	Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 1-13,2-7,3-2		
Mammary Gland		Fibroadenoma	
		Hyperplasia	Cystic, Moderate
Note: FIBROADENOMA	TGLs = 6-11		
Ovary	Periovarn Tiss	Cyst	
Note: CYST	TGLs = 5-10		
Pituitary Gland	Pars Distalis	Hyperplasia	Moderate
Spleen		Leukemia Mononuclear	
		[ Leukemia Mononuclear TGLS = 4-12 ]	
Stomach	Forestomach	Acanthosis	Moderate

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:09

**First Dose M/F:** NA / NA

**Lab:** BAT

---

**ANIMAL ID:** 8876

**TRT#:** 12

**SEX:** Female

**DAY ON TEST:** 680

**DOSE:** 10 PPM 0-3

**DISP:** Moribund Sacrifice

**HISTO:** 852606

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

Forestomach, Submucosa

Foreign Body

Mild

Forestomach

Inflammation

Chronic Active, Mild

Note: ACANTHOSIS TGLs = 8-14

Thyroid Gland

C Cell

Hyperplasia

Moderate

---

**PRIMARY CAUSE OF DEATH**

-

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Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA AND LARGE MAMMARY TUMOR

Animal Note: TGL6-11, SKIN MASS IS MAMMARY TUMOR

---

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8877

TRT#: 12

SEX: Female

DAY ON TEST: 733

DOSE: 10 PPM 0-3

DISP: Terminal Sacrifice

HISTO: 852607

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Clitoral Gland

Duct

Dilatation

Moderate

Note: DILATATION TGLs = 1-3

Liver

Basophilic Focus

Moderate

Eosinophilic Focus

Moderate

Bile Duct

Hyperplasia

Mild

Hypertrophy

Mild

Inflammation

Chronic Active, Mild

Vacuolization Cytoplasmic

Moderate

Ovary

Periovarn Tiss

Cyst

Note: CYST TGLs = 3-2

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01  
**Test Type:** CHRONIC  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 08:38:09  
**First Dose M/F:** NA / NA  
**Lab:** BAT

---

**ANIMAL ID:** 8878

**TRT#:** 12

**SEX:** Female

**DAY ON TEST:** 733

**DOSE:** 10 PPM 0-3

**DISP:** Terminal Sacrifice

**HISTO:** 852608

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

---

**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Marked

Hepatocellular Adenoma

Multiple

Hypertrophy

Moderate

Inflammation

Chronic, Multifocal, Mild

Leukemia Mononuclear

Vacuolization Cytoplasmic

Mild

Note: HEPATOCLR ADEN TGLs = 1-2

Spleen

Leukemia Mononuclear

---

PRIMARY CAUSE OF DEATH

-

---

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8879

TRT#: 12

SEX: Female

DAY ON TEST: 733

DOSE: 10 PPM 0-3

DISP: Terminal Sacrifice

HISTO: 852609

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Angiectasis

Minimal

Basophilic Focus

Mild

Eosinophilic Focus

Mild

Bile Duct

Hyperplasia

Mild

Hypertrophy

Minimal

Inflammation

Chronic, Multifocal, Minimal

Vacuolization Cytoplasmic

Moderate

Spleen

Leukemia Mononuclear

Uterus

Polyp Stromal

Note: POLYP STROMAL TGLs = 1-2

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8880

TRT#: 12

SEX: Female

DAY ON TEST: 733

DOSE: 10 PPM 0-3

DISP: Terminal Sacrifice

HISTO: 852610

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Eye

Retina

Atrophy

Marked

Lens

Cataract

Moderate

Note: ATROPHY TGLs = 1-2

[ Atrophy TGLS = 1-2 ]

Liver

Basophilic Focus

Eosinophilic Focus

Mild

Bile Duct

Hyperplasia

Mild

Hypertrophy

Mild

Inflammation

Chronic, Multifocal, Mild

Necrosis

Mild

Vacuolization Cytoplasmic

Moderate

Pituitary Gland

Pars Distalis

Adenoma

Note: ADENOMA TGLs = 4-6

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL2-3, SKIN MASS IS MAMMARY TUMOR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8881

TRT#: 12

SEX: Female

DAY ON TEST: 736

DOSE: 10 PPM 0-3

DISP: Terminal Sacrifice

HISTO: 852611

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Moderate

Bile Duct

Hyperplasia

Moderate

Hypertrophy

Minimal

Inflammation

Chronic, Multifocal, Mild

Necrosis

Mild

Vacuolization Cytoplasmic

Marked

Mammary Gland

Fibroadenoma

Note: FIBROADENOMA TGLs = 1-2

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL1-2, SKIN MASS IS MAMMARY TUMOR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8882

TRT#: 12

SEX: Female

DAY ON TEST: 721

DOSE: 10 PPM 0-3

DISP: Moribund Sacrifice

HISTO: 852612

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Lung	Nose	Ovary	Parathyroid Gland
Salivary Glands	Skin	Stomach - Forestomach	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	Uterus

**OBSERVATIONS**

Adrenal Gland	Cortex	Hyperplasia	Mild
	Cortex	Vacuolization Cytoplasmic	Mild
Clitoral Gland	Duct	Dilatation	Moderate
Eye	Retina	Atrophy	Marked
	Lens	Cataract	Moderate
Note: CATARACT	TGLs = 3-11		
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Mild
Liver		Basophilic Focus	Moderate
		Eosinophilic Focus	Mild
	Bile Duct	Hyperplasia	Mild
		Hypertrophy	Mild
		Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 4-4		
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Fibroadenoma	
		Hyperplasia	Cystic, Moderate
Note: FIBROADENOMA	TGLs = 1-12		
Pancreas	Acinus	Atrophy	Mild
Pituitary Gland	Pars Distalis	Adenoma	
Note: ADENOMA	TGLs = 2-7		
Spleen		Leukemia Mononuclear	
Thyroid Gland	C Cell	Hyperplasia	Moderate

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:09

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8882

**TRT#:** 12

**SEX:** Female

**DAY ON TEST:** 721

**DOSE:** 10 PPM 0-3

**DISP:** Moribund Sacrifice

**HISTO:** 852612

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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PRIMARY CAUSE OF DEATH

-

Animal Note: TGL1-12< SKIN MASS IS MAMMARY TUMOR

Animal Note: MORIBUND SAC DUE TO LEUKEMIA AND MAMMARY MASS

Animal Note: INTO THE BRAIN VENTRICLE

Animal Note: THERE IS A SMALL AMOUNT OF PITUITARY PUSHED

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\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8883

TRT#: 12

SEX: Female

DAY ON TEST: 736

DOSE: 10 PPM 0-3

DISP: Terminal Sacrifice

HISTO: 852613

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Moderate

Bile Duct

Hyperplasia

Mild

Hypertrophy

Mild

Leukemia Mononuclear

Vacuolization Cytoplasmic

Mild

Pituitary Gland

Pars Distalis

Cyst

Pars Distalis

Hyperplasia

Moderate

Note: CYST TGLs = 3-4

Spleen

Leukemia Mononuclear

Note: LEUKEMIA MONUC TGLs = 4-1

Uterus

Polyp Stromal

Note: POLYP STROMAL TGLs = 1-2

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8884

TRT#: 12

SEX: Female

DAY ON TEST: 736

DOSE: 10 PPM 0-3

DISP: Terminal Sacrifice

HISTO: 852614

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Clitoral Gland

Duct

Dilatation

Mild

Inflammation

Chronic Active, Mild

Note: DILATATION TGLs = 1-2

Liver

Angiectasis

Marked

Basophilic Focus

Mild

Eosinophilic Focus

Mild

Bile Duct

Hyperplasia

Mild

Oval Cell

Hyperplasia

Mild

Hypertrophy

Minimal

Inflammation

Chronic Active, Minimal

Vacuolization Cytoplasmic

Mild

Note: ANGIECTASIS TGLs = 3-4

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01  
**Test Type:** CHRONIC  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 08:38:09  
**First Dose M/F:** NA / NA  
**Lab:** BAT

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<b>ANIMAL ID:</b> 8885	<b>TRT#:</b> 12	<b>SEX:</b> Female	<b>DAY ON TEST:</b> 736
	<b>DOSE:</b> 10 PPM 0-3	<b>DISP:</b> Terminal Sacrifice	<b>HISTO:</b> 852615

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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**NORMAL**

Spleen	Stomach - Forestomach	Stomach - Glandular
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**OBSERVATIONS**

Liver		Basophilic Focus	Mild
		Eosinophilic Focus	Moderate
	Bile Duct	Hyperplasia	Mild
		Inflammation	Chronic Active, Mild
		Vacuolization Cytoplasmic	Moderate
Pituitary Gland	Pars Distalis	Adenoma	
[ Adenoma TGLS = 1-2 ]			

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**PRIMARY CAUSE OF DEATH**

-

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8886

TRT#: 12

SEX: Female

DAY ON TEST: 502

DOSE: 10 PPM 0-3

DISP: Moribund Sacrifice

HISTO: 852616

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Esophagus	Heart	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lung	Lymph Node	Nose
Parathyroid Gland	Salivary Glands	Skin	Spleen
Stomach - Forestomach	Stomach - Glandular	Trachea	Urinary Bladder
Uterus			

MISSING

Thymus

OBSERVATIONS

Brain		Astrocytoma Malignant	
Note: ASTROCYTO MAL	TGLs = 2-5		
Clitoral Gland		Inflammation	Chronic Active, Mild
Kidney		Nephropathy	Chronic, Minimal
Liver		Basophilic Focus	Minimal
		Eosinophilic Focus	Minimal
	Bile Duct	Hyperplasia	Mild
		Inflammation	Chronic, Multifocal, Mild
		Vacuolization Cytoplasmic	Mild
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Ovary	Periovarn Tiss	Cyst	
Note: CYST	TGLs = 1-10		
Pancreas	Acinus	Atrophy	Mild
Pituitary Gland	Pars Distalis	Cyst	
Thyroid Gland	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO BRAIN TUMOR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8887

TRT#: 12

SEX: Female

DAY ON TEST: 709

DOSE: 10 PPM 0-3

DISP: Moribund Sacrifice

HISTO: 852617

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Esophagus
Heart	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Lung	Lymph Node	Nose	Ovary
Pancreas	Parathyroid Gland	Salivary Glands	Skin
Spleen	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder	Uterus	

MISSING

Mammary Gland

OBSERVATIONS

Adrenal Gland	Cortex	Hypertrophy	Mild
	Cortex	Vacuolization Cytoplasmic	Moderate
Brain		Compression	
		Hydrocephalus	Moderate
Clitoral Gland	Duct	Dilatation	Mild
Kidney		Nephropathy	Chronic, Moderate
Liver		Eosinophilic Focus	Mild
	Bile Duct	Hyperplasia	Mild
		Hypertrophy	Mild
		Inflammation	Chronic, Multifocal, Mild
		Necrosis	Mild
		Vacuolization Cytoplasmic	Mild
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Pituitary Gland	Pars Distalis	Adenoma	
Note: ADENOMA TGLs = 1-11			
Thyroid Gland	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO PITUITARY TUMOR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8888

TRT#: 12

SEX: Female

DAY ON TEST: 736

DOSE: 10 PPM 0-3

DISP: Terminal Sacrifice

HISTO: 852618

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Eosinophilic Focus

Marked

Hepatocellular Adenoma

Bile Duct

Hyperplasia

Moderate

Oval Cell

Hyperplasia

Mild

Leukemia Mononuclear

Vacuolization Cytoplasmic

Moderate

Note: HEPATOCLR ADEN TGLs = 6-7

Mesentery

Inflammation

Chronic Active, Moderate

Note: INFLAMMATION TGLs = 4-4

Ovary

Periovarn Tiss

Cyst

Note: CYST TGLs = 1-3

Pituitary Gland

Pars Distalis

Adenoma

Pars Distalis

Cyst

Note: CYST TGLs = 7-5

Spleen

Leukemia Mononuclear

Note: LEUKEMIA MONUC TGLs = 2-2

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL3-2, DEFORMITY LOST IN SECTIONING

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8889

TRT#: 12

SEX: Female

DAY ON TEST: 737

DOSE: 10 PPM 0-3

DISP: Terminal Sacrifice

HISTO: 852619

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Bile Duct

Hyperplasia

Moderate

Hypertrophy

Minimal

Inflammation

Chronic, Multifocal, Minimal

Vacuolization Cytoplasmic

Moderate

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8890

TRT#: 12

SEX: Female

DAY ON TEST: 737

DOSE: 10 PPM 0-3

DISP: Terminal Sacrifice

HISTO: 852620

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Moderate

Hepatocellular Adenoma

Bile Duct

Hyperplasia

Moderate

Hypertrophy

Mild

Inflammation

Chronic, Multifocal, Mild

Necrosis

Minimal

Vacuolization Cytoplasmic

Moderate

Note: HEPATOCLR ADEN TGLs = 3-4,4-5,5-4

Mammary Gland

Fibroadenoma

Note: FIBROADENOMA TGLs = 1-2

Ovary

Periovarn Tiss

Cyst

Note: CYST TGLs = 2-3

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL1-2, SKIN MASS IS MAMMARY TUMOR

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 05077-01  
**Test Type:** CHRONIC  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 08:38:09  
**First Dose M/F:** NA / NA  
**Lab:** BAT

**ANIMAL ID:** 8891

**TRT#:** 12

**SEX:** Female

**DAY ON TEST:** 737

**DOSE:** 10 PPM 0-3

**DISP:** Terminal Sacrifice

**HISTO:** 852621

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

**OBSERVATIONS**

Liver

Bile Duct

Eosinophilic Focus

Moderate

Hyperplasia

Mild

Hypertrophy

Minimal

Inflammation

Chronic, Multifocal, Mild

Vacuolization Cytoplasmic

Moderate

Pituitary Gland

Pars Distalis

Adenoma

Note: ADENOMA

TGLs = 1-2

Stomach

Glandular

Mineralization

Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8892

TRT#: 12

SEX: Female

DAY ON TEST: 485

DOSE: 10 PPM 0-3

DISP: Moribund Sacrifice

HISTO: 852622

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Brain
Esophagus	Heart	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Nose	Ovary	Pancreas
Parathyroid Gland	Pituitary Gland	Salivary Glands	Skin
Stomach - Forestomach	Thymus	Trachea	Urinary Bladder
Uterus			

OBSERVATIONS

Bone Marrow	Femoral	Leukemia Mononuclear	
Clitoral Gland		Inflammation	Chronic Active, Mild
Kidney	Cortex	Infarct	Moderate
Liver		Eosinophilic Focus	Minimal
	Bile Duct	Hyperplasia	Mild
	Oval Cell	Hyperplasia	Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Moderate
Note: LEUKEMIA MONUC TGLs = 3-4			
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
	Pancreatic	Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 2-11			
Mammary Gland		Hyperplasia	Cystic, Moderate
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-12 ]			
Stomach	Glandular	Hyperplasia	Focal, Mild
	Glandular	Ulcer	Mild
Thyroid Gland	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

Animal Note: TGL2-11, PANCREATIC NODULES ARE PANCREATIC LYMPH NODES

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:09

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8892

**TRT#:** 12

**DOSE:** 10 PPM 0-3

**SEX:** Female

**DISP:** Moribund Sacrifice

**DAY ON TEST:** 485

**HISTO:** 852622

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8893

TRT#: 12

SEX: Female

DAY ON TEST: 565

DOSE: 10 PPM 0-3

DISP: Natural Death

HISTO: 852623

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Islets, Pancreatic
Kidney	Nose	Ovary	Pancreas
Parathyroid Gland	Pituitary Gland	Salivary Glands	Skin
Stomach - Forestomach	Stomach - Glandular	Thymus	Thyroid Gland
Trachea	Urinary Bladder	Uterus	

MISSING

Intestine Small - Jejunum

OBSERVATIONS

Clitoral Gland		Inflammation	Chronic Active, Mild
Heart		Degeneration	Chronic, Mild
Liver		Hepatocellular Adenoma	
		Leukemia Mononuclear	
Note: HEPATOCLR ADEN TGLs = 3-12			
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Mild
Spleen		Leukemia Mononuclear	

[ Leukemia Mononuclear TGLS = 1-11 ]

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL2-10, UTERUS APPEARS NORMAL ON MICRO

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01  
Test Type: CHRONIC  
Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014  
Time Report Requested: 08:38:09  
First Dose M/F: NA / NA  
Lab: BAT

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ANIMAL ID: 8894	TRT#: 12 DOSE: 10 PPM 0-3	SEX: Female DISP: Terminal Sacrifice	DAY ON TEST: 737 HISTO: 852624
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ORGAN AND ACCOUNTABLE SITE STATUS

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NORMAL

Spleen	Stomach - Forestomach	Stomach - Glandular
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OBSERVATIONS

Liver		Basophilic Focus	Mild
		Eosinophilic Focus	Moderate
		Hepatocellular Carcinoma	
	Bile Duct	Hyperplasia	Moderate
		Hypertrophy	Minimal
		Inflammation	Chronic, Multifocal, Mild
		Vacuolization Cytoplasmic	Mild
[ Hyperplasia TGLS = 3-4 ]			
Ovary	Periovarn Tiss	Cyst	
Note: CYST TGLs = 2-3			
Pituitary Gland		Hyperplasia	Mild
Note: HYPERPLASIA TGLs = 1-2			

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PRIMARY CAUSE OF DEATH

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8895

TRT#: 12

SEX: Female

DAY ON TEST: 661

DOSE: 10 PPM 0-3

DISP: Moribund Sacrifice

HISTO: 852625

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Clitoral Gland	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Nose	Ovary	Pancreas
Parathyroid Gland	Pituitary Gland	Salivary Glands	Skin
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder	Uterus		

OBSERVATIONS

Adrenal Gland	Cortex	Vacuolization Cytoplasmic	Mild
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Minimal
Liver		Basophilic Focus	Mild
		Eosinophilic Focus	Marked
	Bile Duct	Hyperplasia	Mild
	Oval Cell	Hyperplasia	Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Marked
Note: LEUKEMIA MONUC	TGLs = 1-4,1-12,1-13		
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Fibroadenoma	
		Hyperplasia	Cystic, Moderate
Note: FIBROADENOMA	TGLs = 4-14		
Spleen		Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 3-11		
Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL4-14, SKIN MASS IS MAMMARY TUMOR

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)

**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:09

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8895

**TRT#:** 12

**SEX:** Female

**DAY ON TEST:** 661

**DOSE:** 10 PPM 0-3

**DISP:** Moribund Sacrifice

**HISTO:** 852625

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01  
**Test Type:** CHRONIC  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 08:38:09  
**First Dose M/F:** NA / NA  
**Lab:** BAT

**ANIMAL ID:** 8896

**TRT#:** 12

**SEX:** Female

**DAY ON TEST:** 738

**DOSE:** 10 PPM 0-3

**DISP:** Terminal Sacrifice

**HISTO:** 852626

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Mild

Bile Duct

Hyperplasia

Mild

Inflammation

Chronic, Multifocal, Mild

Vacuolization Cytoplasmic

Mild

Pituitary Gland

Pars Distalis

Adenoma

[ Adenoma TGLS = 2-3 ]

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8897

TRT#: 12

SEX: Female

DAY ON TEST: 738

DOSE: 10 PPM 0-3

DISP: Terminal Sacrifice

HISTO: 852627

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Stomach - Forestomach

Stomach - Glandular

OBSERVATIONS

Eye

Retina

Atrophy

Marked

Lens

Cataract

Moderate

Note: CATARACT TGLs = 1-2

Note: ATROPHY TGLs = 1-2

Liver

Angiectasis

Mild

Basophilic Focus

Mild

Eosinophilic Focus

Moderate

Hepatocellular Adenoma

Multiple

Bile Duct

Hyperplasia

Moderate

Oval Cell

Hyperplasia

Minimal

Inflammation

Chronic Active, Mild

Leukemia Mononuclear

Vacuolization Cytoplasmic

Moderate

Note: HEPATOCLR ADEN TGLs = 5-6

Mammary Gland

Fibroadenoma

Multiple

Note: FIBROADENOMA TGLs = 2-3,3-4

Pituitary Gland

Pars Distalis

Adenoma

Note: ADENOMA TGLs = 4-5

Spleen

Leukemia Mononuclear

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL2-3,3-4, SKIN MASSES ARE MAMMARY TUMORS

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8898

TRT#: 12

SEX: Female

DAY ON TEST: 738

DOSE: 10 PPM 0-3

DISP: Terminal Sacrifice

HISTO: 852628

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Moderate

Eosinophilic Focus

Moderate

Bile Duct

Hyperplasia

Mild

Hypertrophy

Minimal

Inflammation

Chronic, Multifocal, Minimal

Vacuolization Cytoplasmic

Moderate

Pituitary Gland

Pars Distalis

Adenoma

[ Adenoma TGLS = 3-3 ]

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL2-3, PITUITARY CYST NOT PRESENT IN SECTION

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8899

TRT#: 12

SEX: Female

DAY ON TEST: 738

DOSE: 10 PPM 0-3

DISP: Terminal Sacrifice

HISTO: 852629

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

**OBSERVATIONS**

Liver		Basophilic Focus	Mild
		Eosinophilic Focus	Mild
	Bile Duct	Hyperplasia	Mild
		Hypertrophy	Minimal
		Inflammation	Chronic Active, Mild
		Vacuolization Cytoplasmic	Mild
Pituitary Gland	Pars Distalis	Adenoma	
Note: ADENOMA	TGLs = 2-3		
Spleen		Fibrosis	Moderate
Stomach	Glandular	Mineralization	Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8900

TRT#: 12

SEX: Female

DAY ON TEST: 738

DOSE: 10 PPM 0-3

DISP: Terminal Sacrifice

HISTO: 852630

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Marked

Hepatocellular Carcinoma

Bile Duct

Hyperplasia

Mild

Oval Cell

Hyperplasia

Minimal

Hypertrophy

Minimal

Inflammation

Chronic, Multifocal, Mild

Vacuolization Cytoplasmic

Mild

Note: HEPATOCLR CARC TGLs = 3-4

Mammary Gland

Fibroadenoma

Note: FIBROADENOMA TGLs = 1-3

Ovary

Periovarn Tiss

Leiomyoma

Note: [ LEIOMYOMA ] TGLs = 2-2

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL1-3, SKIN MASS IS MAMMARY TUMOR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8901

TRT#: 13

SEX: Female

DAY ON TEST: 729

DOSE: 10 PPM 3-3

DISP: Terminal Sacrifice

HISTO: 852641

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Marked

Hepatocellular Adenoma

Hypertrophy

Minimal

Note: HEPATOCLR ADEN TGLs = 2-3

Pituitary Gland

Pars Distalis

Adenoma

Note: ADENOMA TGLs = 3-4

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01  
**Test Type:** CHRONIC  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 08:38:09  
**First Dose M/F:** NA / NA  
**Lab:** BAT

**ANIMAL ID:** 8902

**TRT#:** 13

**SEX:** Female

**DAY ON TEST:** 729

**DOSE:** 10 PPM 3-3

**DISP:** Terminal Sacrifice

**HISTO:** 852642

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Moderate

Hepatocellular Adenoma

Multiple

Bile Duct

Hyperplasia

Mild

Hypertrophy

Mild

Leukemia Mononuclear

Vacuolization Cytoplasmic

Moderate

[ Vacuolization Cytoplasmic TGLS = 1-2,2-3,3-2 ]

Spleen

Leukemia Mononuclear

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8903

TRT#: 13

SEX: Female

DAY ON TEST: 711

DOSE: 10 PPM 3-3

DISP: Moribund Sacrifice

HISTO: 852643

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Heart	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lung	Lymph Node	Nose
Ovary	Pancreas	Parathyroid Gland	Salivary Glands
Skin	Spleen	Stomach - Forestomach	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	Uterus

OBSERVATIONS

Adrenal Gland	Cortex	Cyst	
Clitoral Gland		Inflammation	Chronic Active, Mild
Kidney		Nephropathy	Chronic, Mild
Liver		Basophilic Focus	Moderate
		Eosinophilic Focus	Marked
	Bile Duct	Hyperplasia	Mild
	Oval Cell	Hyperplasia	Minimal
		Hypertrophy	Mild
	Periportal	Infiltration Cellular	Lymphocyte, Marked
		Vacuolization Cytoplasmic	Marked
Note: VACUOLIZ CYTO TGLs = 1-4			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Moderate
Pituitary Gland	Pars Distalis	Cyst	
Thyroid Gland	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO LIVER LESIONS

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8904

TRT#: 13

SEX: Female

DAY ON TEST: 729

DOSE: 10 PPM 3-3

DISP: Terminal Sacrifice

HISTO: 852644

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Eosinophilic Focus

Moderate

Hepatocholangiocarcinoma

Oval Cell

Hyperplasia

Moderate

Hypertrophy

Mild

Vacuolization Cytoplasmic

Moderate

Note: HEPATOCHOLCARC TGLs = 2-2

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 05077-01  
**Test Type:** CHRONIC  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 08:38:09  
**First Dose M/F:** NA / NA  
**Lab:** BAT

**ANIMAL ID:** 8905

**TRT#:** 13

**SEX:** Female

**DAY ON TEST:** 729

**DOSE:** 10 PPM 3-3

**DISP:** Terminal Sacrifice

**HISTO:** 852645

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Moderate

Hepatocellular Adenoma

Bile Duct

Hyperplasia

Mild

Oval Cell

Hyperplasia

Mild

Vacuolization Cytoplasmic

Mild

[ Hyperplasia TGLS = 1-2 ]

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8906

TRT#: 13

SEX: Female

DAY ON TEST: 730

DOSE: 10 PPM 3-3

DISP: Terminal Sacrifice

HISTO: 852646

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Stomach - Forestomach

Stomach - Glandular

OBSERVATIONS

Liver

Eosinophilic Focus

Marked

Hepatocellular Adenoma

Multiple

Bile Duct

Hyperplasia

Moderate

Oval Cell

Hyperplasia

Moderate

Hypertrophy

Mild

Leukemia Mononuclear

Note: HEPATOCLR ADEN TGLs = 2-3

Mammary Gland

Fibroadenoma

Note: FIBROADENOMA TGLs = 1-2

Spleen

Fibrosis

Mild

Leukemia Mononuclear

Note: FIBROSIS TGLs = 3-1

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL3-1, SPLEEN DEFORMITY DUE TO FIBROSIS ON MICRO

Animal Note: TGL1-2, SKIN MASS IS MAMMARY TUMOR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8907

TRT#: 13

SEX: Female

DAY ON TEST: 507

DOSE: 10 PPM 3-3

DISP: Natural Death

HISTO: 852647

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Bone	Esophagus	Heart	Intestine Large - Colon
Intestine Small - Duodenum	Kidney	Lung	Lymph Node
Ovary	Pituitary Gland	Salivary Glands	Skin
Stomach - Forestomach	Stomach - Glandular	Uterus	

**MISSING**

Mammary Gland	Parathyroid Gland	Thymus	
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**AUTO PRECLUDES DIAG.**

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone Marrow	Brain
Clitoral Gland	Intestine Large - Rectum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Nose	Pancreas	Spleen
Thyroid Gland	Trachea	Urinary Bladder	

**OBSERVATIONS**

Intestine Large Note: [ LEIOMYOSAR ] TGLs = 1-11	Cecum	Leiomyosarcoma	
Liver		Basophilic Focus	Mild
Lymph Node Note: MANDIBULAR LN NORMAL			

PRIMARY CAUSE OF DEATH

-

Animal Note: CAUSE OF DEATH< INTESTINAL TUMOR

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:09

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8908

**TRT#:** 13

**SEX:** Female

**DAY ON TEST:** 730

**DOSE:** 10 PPM 3-3

**DISP:** Terminal Sacrifice

**HISTO:** 852648

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

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**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Mild

Bile Duct

Hyperplasia

Mild

Hypertrophy

Minimal

Vacuolization Cytoplasmic

Moderate

---

**PRIMARY CAUSE OF DEATH**

-

---

Animal Note: TGL1-2, OVARIES WITHIN NORMAL LIMITS

---

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8909

TRT#: 13

SEX: Female

DAY ON TEST: 730

DOSE: 10 PPM 3-3

DISP: Terminal Sacrifice

HISTO: 852649

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Moderate

Bile Duct

Hyperplasia

Mild

Hypertrophy

Minimal

Vacuolization Cytoplasmic

Moderate

Note: VACUOLIZ CYTO TGLs = 1-2,2-3

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:09

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8910

**TRT#:** 13

**SEX:** Female

**DAY ON TEST:** 730

**DOSE:** 10 PPM 3-3

**DISP:** Terminal Sacrifice

**HISTO:** 852650

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

---

**OBSERVATIONS**

Liver

Basophilic Focus

Minimal

Eosinophilic Focus

Mild

Bile Duct

Hyperplasia

Mild

Hypertrophy

Minimal

Vacuolization Cytoplasmic

Mild

---

**PRIMARY CAUSE OF DEATH**

-

---

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:09

**First Dose M/F:** NA / NA

**Lab:** BAT

---

**ANIMAL ID:** 8911

**TRT#:** 13

**SEX:** Female

**DAY ON TEST:** 730

**DOSE:** 10 PPM 3-3

**DISP:** Terminal Sacrifice

**HISTO:** 852651

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

---

**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Mild

Bile Duct

Hyperplasia

Moderate

Vacuolization Cytoplasmic

Moderate

---

**PRIMARY CAUSE OF DEATH**

-

---

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01  
**Test Type:** CHRONIC  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 08:38:09  
**First Dose M/F:** NA / NA  
**Lab:** BAT

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<b>ANIMAL ID:</b> 8912	<b>TRT#:</b> 13	<b>SEX:</b> Female	<b>DAY ON TEST:</b> 731
	<b>DOSE:</b> 10 PPM 3-3	<b>DISP:</b> Terminal Sacrifice	<b>HISTO:</b> 852652

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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**NORMAL**

Spleen	Stomach - Forestomach	Stomach - Glandular
--------	-----------------------	---------------------

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**OBSERVATIONS**

Liver		Basophilic Focus	Moderate
		Eosinophilic Focus	Mild
	Bile Duct	Hyperplasia	Mild
		Hypertrophy	Minimal
Note: BASOPH FOCUS TGLs = 2-2			
Pituitary Gland	Pars Distalis	Hyperplasia	Moderate
Note: HYPERPLASIA TGLs = 1-3			

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**PRIMARY CAUSE OF DEATH**

-

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\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 05077-01  
**Test Type:** CHRONIC  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 08:38:09  
**First Dose M/F:** NA / NA  
**Lab:** BAT

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<b>ANIMAL ID:</b> 8913	<b>TRT#:</b> 13	<b>SEX:</b> Female	<b>DAY ON TEST:</b> 731
	<b>DOSE:</b> 10 PPM 3-3	<b>DISP:</b> Terminal Sacrifice	<b>HISTO:</b> 852653

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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**NORMAL**

Stomach - Forestomach	Stomach - Glandular
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**OBSERVATIONS**

Liver		Basophilic Focus	Minimal
		Eosinophilic Focus	Multiple
		Hepatocellular Adenoma	
	Bile Duct	Hyperplasia	Mild
	Oval Cell	Hyperplasia	Minimal
		Hypertrophy	Minimal
		Inflammation	Chronic Active, Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Moderate
Pituitary Gland	Pars Distalis	Adenoma	
Note: ADENOMA	TGLs = 1-2		
Spleen		Leukemia Mononuclear	

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PRIMARY CAUSE OF DEATH

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8914

TRT#: 13

SEX: Female

DAY ON TEST: 591

DOSE: 10 PPM 3-3

DISP: Moribund Sacrifice

HISTO: 852654

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Clitoral Gland	Esophagus	Heart
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Nose
Ovary	Parathyroid Gland	Salivary Glands	Skin
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder	Uterus		

OBSERVATIONS

Kidney		Nephropathy	Chronic, Minimal
Liver		Eosinophilic Focus	Mild
		Hypertrophy	Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Marked
Note: LEUKEMIA MONUC TGLs = 2-4			
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
	Mediastinal	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Moderate
Pancreas	Acinus	Atrophy	Mild
Pituitary Gland	Pars Distalis	Hyperplasia	Mild
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-11 ]			
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8915

TRT#: 13

SEX: Female

DAY ON TEST: 731

DOSE: 10 PPM 3-3

DISP: Terminal Sacrifice

HISTO: 852655

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

**OBSERVATIONS**

Liver		Degeneration	Cystic, Marked
		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Mild
		Hypertrophy	Mild
		Inflammation	Chronic Active, Marked
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Note: HEPATOCLR ADEN TGLs = 1-2,2-3			
Spleen		Leukemia Mononuclear	
Stomach	Glandular	Mineralization	Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01  
**Test Type:** CHRONIC  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 08:38:09  
**First Dose M/F:** NA / NA  
**Lab:** BAT

**ANIMAL ID:** 8916

**TRT#:** 13

**SEX:** Female

**DAY ON TEST:** 731

**DOSE:** 10 PPM 3-3

**DISP:** Terminal Sacrifice

**HISTO:** 852656

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Moderate

Hepatocellular Adenoma

Bile Duct

Hyperplasia

Minimal

Hypertrophy

Mild

Inflammation

Chronic Active, Mild

Necrosis

Mild

Vacuolization Cytoplasmic

Moderate

Note: HEPATOCLR ADEN TGLs = 4-3

Uterus

Endometrium

Hyperplasia

Cystic, Glandular, Marked

Note: HYPERPLASIA TGLs = 1-2,2-2

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01  
Test Type: CHRONIC  
Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014  
Time Report Requested: 08:38:09  
First Dose M/F: NA / NA  
Lab: BAT

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ANIMAL ID: 8917	TRT#: 13 DOSE: 10 PPM 3-3	SEX: Female DISP: Terminal Sacrifice	DAY ON TEST: 731 HISTO: 852657
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**ORGAN AND ACCOUNTABLE SITE STATUS**

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**NORMAL**

Spleen	Stomach - Forestomach	Stomach - Glandular
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**OBSERVATIONS**

Liver		Basophilic Focus	Mild
		Eosinophilic Focus	Mild
	Bile Duct	Hyperplasia	Mild
		Inflammation	Chronic, Multifocal, Minimal
		Vacuolization Cytoplasmic	Mild
Ovary	Periovarn Tiss	Cyst	
[ Cyst TGLS = 1-2 ]			
Uterus		Polyp Stromal	
[ Polyp Stromal TGLS = 2-3 ]			

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PRIMARY CAUSE OF DEATH

-

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8918

TRT#: 13

SEX: Female

DAY ON TEST: 639

DOSE: 10 PPM 3-3

DISP: Moribund Sacrifice

HISTO: 852658

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Brain	Clitoral Gland
Esophagus	Heart	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Kidney	Nose	Ovary
Parathyroid Gland	Salivary Glands	Skin	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	Urinary Bladder

OBSERVATIONS

Adrenal Gland	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
Liver		Eosinophilic Focus	Mild
	Bile Duct	Hyperplasia	Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Note: LEUKEMIA MONUC TGLs = 2-4			
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
	Mediastinal	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Moderate
Pancreas	Acinus	Atrophy	Mild
Pituitary Gland	Pars Distalis	Cyst	
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-1 ]			
Thyroid Gland	C Cell	Hyperplasia	Mild
Uterus	Endometrium	Hyperplasia	Cystic, Glandular, Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8919

TRT#: 13

SEX: Female

DAY ON TEST: 718

DOSE: 10 PPM 3-3

DISP: Natural Death

HISTO: 852659

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone Marrow	Esophagus	Heart
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Lung
Lymph Node	Nose	Ovary	Pancreas
Parathyroid Gland	Salivary Glands	Skin	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	Urinary Bladder
Uterus			

OBSERVATIONS

Adrenal Gland	Cortex	Vacuolization Cytoplasmic	Minimal
Bone	Femur	Hyperostosis	
Brain		Compression	
		Hydrocephalus	Mild
Clitoral Gland	Duct	Dilatation	Moderate
Kidney		Nephropathy	Chronic, Mild
Liver		Degeneration	Cystic, Mild
		Eosinophilic Focus	Moderate
	Bile Duct	Hyperplasia	Mild
		Hypertrophy	Minimal
	Periportal	Infiltration Cellular	Lymphocyte, Minimal
		Inflammation	Chronic Active, Mild
Note: DEGEN	TGLs = 2-4		
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Moderate
Pituitary Gland	Pars Distalis	Adenoma	
Note: ADENOMA	TGLs = 1-11		
Spleen		Hematopoietic Cell Proliferation	Moderate
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: CAUSE OF DEATH, PITUITARY TUMOR

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:09

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8919

**TRT#:** 13

**SEX:** Female

**DAY ON TEST:** 718

**DOSE:** 10 PPM 3-3

**DISP:** Natural Death

**HISTO:** 852659

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8920

TRT#: 13

SEX: Female

DAY ON TEST: 731

DOSE: 10 PPM 3-3

DISP: Terminal Sacrifice

HISTO: 852660

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

**OBSERVATIONS**

Liver

Basophilic Focus

Minimal

Eosinophilic Focus

Moderate

Bile Duct

Hyperplasia

Mild

Hypertrophy

Minimal

Vacuolization Cytoplasmic

Mild

Pituitary Gland

Pars Distalis

Adenoma

Pars Distalis

Cyst

Note: ADENOMA TGLs = 2-5

Note: CYST TGLs = 2-5

Stomach

Glandular

Mineralization

Mild

Uterus

Polyp Stromal

Note: POLYP STROMAL TGLs = 1-2

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01  
**Test Type:** CHRONIC  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 08:38:09  
**First Dose M/F:** NA / NA  
**Lab:** BAT

**ANIMAL ID:** 8921

**TRT#:** 13

**SEX:** Female

**DAY ON TEST:** 732

**DOSE:** 10 PPM 3-3

**DISP:** Terminal Sacrifice

**HISTO:** 852661

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Marked

Hepatocellular Adenoma

Bile Duct

Hyperplasia

Mild

Oval Cell

Hyperplasia

Minimal

Hypertrophy

Minimal

Vacuolization Cytoplasmic

Moderate

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:09

**First Dose M/F:** NA / NA

**Lab:** BAT

**ANIMAL ID:** 8922

**TRT#:** 13

**SEX:** Female

**DAY ON TEST:** 574

**DOSE:** 10 PPM 3-3

**DISP:** Natural Death

**HISTO:** 852662

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Bone	Brain	Esophagus	Heart
Intestine Large - Colon	Intestine Small - Jejunum	Kidney	Nose
Ovary	Parathyroid Gland	Pituitary Gland	Salivary Glands
Skin	Stomach - Forestomach	Stomach - Glandular	Trachea
Urinary Bladder	Uterus		

**AUTO PRECLUDES DIAG.**

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone Marrow	Intestine Large - Cecum
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Islets, Pancreatic
Pancreas			

**OBSERVATIONS**

Clitoral Gland	Duct	Dilatation Inflammation Eosinophilic Focus Leukemia Mononuclear	Mild Chronic Active, Mild Mild
Liver		Leukemia Mononuclear	
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Moderate
Spleen	Capsule	Hemorrhage Leukemia Mononuclear	Moderate
[ Hemorrhage TGLS = 2-11 ]			
[ Leukemia Mononuclear TGLS = 1-12 ]			
Thymus		Leukemia Mononuclear	
Thyroid Gland	C Cell	Hyperplasia	Mild

**PRIMARY CAUSE OF DEATH**

-

Animal Note: CAUSE OF DEATH, LEUKEMIA MONONUCLEAR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:09

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8923

TRT#: 13

SEX: Female

DAY ON TEST: 429

DOSE: 10 PPM 3-3

DISP: Moribund Sacrifice

HISTO: 852663

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Clitoral Gland	Esophagus	Heart
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Lung
Lymph Node	Nose	Ovary	Pancreas
Parathyroid Gland	Pituitary Gland	Salivary Glands	Skin
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder	Uterus		

**OBSERVATIONS**

Kidney		Nephropathy	Chronic, Minimal
Liver		Basophilic Focus	Mild
		Inflammation	Chronic, Multifocal, Minimal
		Vacuolization Cytoplasmic	Marked
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Spleen		Depletion Lymphoid	Mild
Note: DEPLET LYMPH TGLs = 3-1			
Thyroid Gland	C Cell	Hyperplasia	Mild
Tongue		Squamous Cell Carcinoma	
Note: SQUAM CEL CARC TGLs = 1-11			

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO TONGUE TUMOR

Animal Note: TGL2-6, CECUM WITHIN NORMAL LIMITS

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8924

TRT#: 13

SEX: Female

DAY ON TEST: 707

DOSE: 10 PPM 3-3

DISP: Moribund Sacrifice

HISTO: 852664

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Esophagus
Heart	Intestine Large - Cecum	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Lymph Node
Nose	Ovary	Parathyroid Gland	Salivary Glands
Skin	Spleen	Stomach - Forestomach	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	Uterus

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
Brain		Compression	
		Hydrocephalus	Mild
Clitoral Gland	Duct	Dilatation	Moderate
Intestine Large	Colon	Parasite Metazoan	
Kidney		Nephropathy	Chronic, Mild
Liver		Basophilic Focus	Minimal
		Hypertrophy	Minimal
		Inflammation	Chronic, Multifocal, Minimal
		Vacuolization Cytoplasmic	Moderate
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Fibroadenoma	
		Hyperplasia	Cystic, Moderate
Note: FIBROADENOMA TGLs = 2-12			
Pancreas	Acinus	Atrophy	Marked
Pituitary Gland	Pars Intermed	Adenoma	
Note: [ ADENOMA ] TGLs = 1-11			
Thyroid Gland	C Cell	Hyperplasia	Moderate
		Infiltration Cellular	Lymphocyte, Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO PITUITARY TUMOR

Animal Note: TGL2-12, SKIN MASS IS A MAMMARY TUMOR

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:10

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8924

**TRT#:** 13

**DOSE:** 10 PPM 3-3

**SEX:** Female

**DISP:** Moribund Sacrifice

**DAY ON TEST:** 707

**HISTO:** 852664

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01  
**Test Type:** CHRONIC  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 08:38:10  
**First Dose M/F:** NA / NA  
**Lab:** BAT

**ANIMAL ID:** 8925

**TRT#:** 13

**SEX:** Female

**DAY ON TEST:** 732

**DOSE:** 10 PPM 3-3

**DISP:** Terminal Sacrifice

**HISTO:** 852665

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Moderate

Eosinophilic Focus

Marked

Hepatocellular Adenoma

Bile Duct

Hyperplasia

Mild

Hypertrophy

Minimal

Inflammation

Chronic, Multifocal, Minimal

Vacuolization Cytoplasmic

Moderate

Uterus

Endometrium

Hyperplasia

Cystic, Glandular, Mild

[ Hyperplasia TGLS = 1-2 ]

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8926

TRT#: 13

SEX: Female

DAY ON TEST: 625

DOSE: 10 PPM 3-3

DISP: Moribund Sacrifice

HISTO: 852666

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Clitoral Gland	Esophagus	Heart	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Nose	Ovary
Pancreas	Parathyroid Gland	Pituitary Gland	Salivary Glands
Skin	Stomach - Glandular	Trachea	Urinary Bladder

MISSING

Thymus

OBSERVATIONS

Adrenal Gland	Cortex	Necrosis	Moderate
Kidney		Nephropathy	Chronic, Minimal
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	
		Hepatocellular Carcinoma	
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Moderate
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Marked
Note: HEPATOCLR ADEN TGLs = 2-4 [ Vacuolization Cytoplasmic TGLS = 1-11 ]			
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Moderate
Spleen		Leukemia Mononuclear	
Stomach	Forestomach	Acanthosis	Moderate
Thyroid Gland	C Cell	Hyperplasia	Moderate
Uterus		Hemorrhage	Moderate
	Endometrium	Hyperplasia	Cystic, Glandular, Mild
Note: HEMORRHAGE TGLs = 3-10			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:10

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8926

**TRT#:** 13

**SEX:** Female

**DAY ON TEST:** 625

**DOSE:** 10 PPM 3-3

**DISP:** Moribund Sacrifice

**HISTO:** 852666

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA AND LIVER TUMORS

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\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01  
**Test Type:** CHRONIC  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 08:38:10  
**First Dose M/F:** NA / NA  
**Lab:** BAT

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**ANIMAL ID:** 8927

**TRT#:** 13

**SEX:** Female

**DAY ON TEST:** 732

**DOSE:** 10 PPM 3-3

**DISP:** Terminal Sacrifice

**HISTO:** 852667

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

---

**OBSERVATIONS**

Liver

Eosinophilic Focus

Mild

Vacuolization Cytoplasmic

Mild

Uterus

Endometrium

Hyperplasia

Cystic, Glandular, Mild

Note: HYPERPLASIA TGLs = 1-2

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**PRIMARY CAUSE OF DEATH**

-

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**Experiment Number:** 05077-01  
**Test Type:** CHRONIC  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 08:38:10  
**First Dose M/F:** NA / NA  
**Lab:** BAT

**ANIMAL ID:** 8928

**TRT#:** 13

**SEX:** Female

**DAY ON TEST:** 732

**DOSE:** 10 PPM 3-3

**DISP:** Terminal Sacrifice

**HISTO:** 852668

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Mild

Bile Duct

Hyperplasia

Mild

Inflammation

Chronic Active, Mild

Vacuolization Cytoplasmic

Moderate

Pituitary Gland

Pars Distalis

Adenoma

[ Adenoma TGLS = 1-2 ]

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8929

TRT#: 13

SEX: Female

DAY ON TEST: 732

DOSE: 10 PPM 3-3

DISP: Terminal Sacrifice

HISTO: 852669

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Stomach - Forestomach

Stomach - Glandular

OBSERVATIONS

Liver

Basophilic Focus

Minimal

Eosinophilic Focus

Marked

Hepatocellular Adenoma

Multiple

Bile Duct

Hyperplasia

Mild

Hypertrophy

Moderate

Inflammation

Chronic Active, Mild

Leukemia Mononuclear

Necrosis

Minimal

Note: HEPATOCLR ADEN TGLs = 2-1,2-2

Spleen

Leukemia Mononuclear

Uterus

Polyp Stromal

Note: POLYP STROMAL TGLs = 1-3

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01  
Test Type: CHRONIC  
Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014  
Time Report Requested: 08:38:10  
First Dose M/F: NA / NA  
Lab: BAT

ANIMAL ID: 8930

TRT#: 13

SEX: Female

DAY ON TEST: 733

DOSE: 10 PPM 3-3

DISP: Terminal Sacrifice

HISTO: 852670

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Stomach - Forestomach

Stomach - Glandular

OBSERVATIONS

Eye

Retina

Atrophy

Marked

Lens

Cataract

Moderate

Note: ATROPHY TGLs = 2-3

Note: CATARACT TGLs = 2-3

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Marked

Bile Duct

Hyperplasia

Mild

Hypertrophy

Mild

Leukemia Mononuclear

Vacuolization Cytoplasmic

Mild

Spleen

Leukemia Mononuclear

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8931

TRT#: 13

SEX: Female

DAY ON TEST: 720

DOSE: 10 PPM 3-3

DISP: Moribund Sacrifice

HISTO: 852671

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Lung	Lymph Node	Nose	Ovary
Salivary Glands	Skin	Spleen	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	Urinary Bladder
Uterus			

MISSING

Parathyroid Gland

OBSERVATIONS

Brain		Compression	
		Hydrocephalus	Moderate
Clitoral Gland		Inflammation	Chronic Active, Mild
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Mild
Liver		Eosinophilic Focus	Mild
		Hypertrophy	Minimal
		Inflammation	Chronic, Multifocal, Minimal
		Vacuolization Cytoplasmic	Mild
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Fibroadenoma	
		Hyperplasia	Cystic, Moderate
Note: FIBROADENOMA TGLs = 1-11			
Pancreas	Acinus	Atrophy	Mild
Pituitary Gland	Pars Distalis	Adenoma	
	Pars Distalis	Cyst	
Note: ADENOMA TGLs = 2-7			
Thyroid Gland	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)

**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:10

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8931

**TRT#:** 13

**SEX:** Female

**DAY ON TEST:** 720

**DOSE:** 10 PPM 3-3

**DISP:** Moribund Sacrifice

**HISTO:** 852671

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Animal Note: TGL1-11, SKIN MASS IS MAMMARY TUMOR

Animal Note: MORIBUND SACRIFICE DUE TO PITUITARY TUMOR

---

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01  
Test Type: CHRONIC  
Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014  
Time Report Requested: 08:38:10  
First Dose M/F: NA / NA  
Lab: BAT

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ANIMAL ID: 8932	TRT#: 13 DOSE: 10 PPM 3-3	SEX: Female DISP: Terminal Sacrifice	DAY ON TEST: 733 HISTO: 852672
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ORGAN AND ACCOUNTABLE SITE STATUS

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NORMAL

Spleen	Stomach - Forestomach	Stomach - Glandular
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OBSERVATIONS

Liver		Basophilic Focus	Mild
		Eosinophilic Focus	Moderate
		Hepatocellular Adenoma	
	Bile Duct	Hyperplasia	Mild
	Oval Cell	Hyperplasia	Minimal
		Hypertrophy	Moderate
		Inflammation	Chronic, Multifocal, Minimal
		Vacuolization Cytoplasmic	Moderate
Note: HEPATOCLR ADEN TGLs = 3-5			
Ovary	Periovarn Tiss	Cyst	
Note: CYST TGLs = 1-2			
Pituitary Gland	Pars Distalis	Cyst	
Note: CYST TGLs = 4-4			

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PRIMARY CAUSE OF DEATH

-

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\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8933

TRT#: 13

SEX: Female

DAY ON TEST: 733

DOSE: 10 PPM 3-3

DISP: Terminal Sacrifice

HISTO: 852673

**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Moderate

Bile Duct

Hyperplasia

Mild

Hypertrophy

Moderate

Leukemia Mononuclear

Vacuolization Cytoplasmic

Mild

Fibroadenoma

Mammary Gland

Note: FIBROADENOMA TGLs = 1-3

Spleen

Leukemia Mononuclear

Stomach

Forestomach

Acanthosis

Moderate

Glandular

Mineralization

Mild

Note: [ ACANTHOSIS ] TGLs = 4-5

Uterus

Polyp Stromal

Note: POLYP STROMAL TGLs = 3-2

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL4-5, NODULE IS IN FORESTOMACH

Animal Note: TGL1-3, SKIN MASS IS MAMMARY TUMOR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8934

TRT#: 13

SEX: Female

DAY ON TEST: 733

DOSE: 10 PPM 3-3

DISP: Terminal Sacrifice

HISTO: 852674

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Moderate

Bile Duct

Hyperplasia

Mild

Hypertrophy

Mild

Inflammation

Chronic Active, Mild

Vacuolization Cytoplasmic

Mild

Mammary Gland

Fibroadenoma

[ Fibroadenoma TGLS = 1-2 ]

Pituitary Gland

Pars Distalis

Adenoma

[ Adenoma TGLS = 3-4 ]

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL1-2, SKIN MASS IS MAMMARY TUMOR

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01  
**Test Type:** CHRONIC  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 08:38:10  
**First Dose M/F:** NA / NA  
**Lab:** BAT

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<b>ANIMAL ID:</b> 8935	<b>TRT#:</b> 13 <b>DOSE:</b> 10 PPM 3-3	<b>SEX:</b> Female <b>DISP:</b> Terminal Sacrifice	<b>DAY ON TEST:</b> 733 <b>HISTO:</b> 852675
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**ORGAN AND ACCOUNTABLE SITE STATUS**

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**NORMAL**

Spleen	Stomach - Forestomach	Stomach - Glandular
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**OBSERVATIONS**

Eye	Retina	Atrophy	Marked
	Lens	Cataract	Marked
	[ Atrophy TGLS = 1-2 ]		
	[ Cataract TGLS = 1-2 ]		
Liver		Basophilic Focus	Mild
		Eosinophilic Focus	
		Hypertrophy	Minimal
		Necrosis	Minimal
		Vacuolization Cytoplasmic	Mild
Pituitary Gland	Pars Distalis	Hyperplasia	Moderate
Note: HYPERPLASIA	TGLs = 2-3		

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**PRIMARY CAUSE OF DEATH**

-

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8936

TRT#: 13

SEX: Female

DAY ON TEST: 736

DOSE: 10 PPM 3-3

DISP: Terminal Sacrifice

HISTO: 852676

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Moderate

Eosinophilic Focus

Mild

Bile Duct

Hyperplasia

Mild

Oval Cell

Hyperplasia

Minimal

Hypertrophy

Minimal

Inflammation

Chronic, Multifocal, Minimal

Leukemia Mononuclear

Vacuolization Cytoplasmic

Moderate

Fibroadenoma

Mammary Gland

Note: FIBROADENOMA TGLs = 1-2

Pituitary Gland

Pars Distalis

Adenoma

Note: [ ADENOMA ] TGLs = 3-3

Spleen

Leukemia Mononuclear

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL1-2, SKIN MASS IS MAMMARY TUMOR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

<b>ANIMAL ID:</b> 8937	<b>TRT#:</b> 13 <b>DOSE:</b> 10 PPM 3-3	<b>SEX:</b> Female <b>DISP:</b> Terminal Sacrifice	<b>DAY ON TEST:</b> 736 <b>HISTO:</b> 852677
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**ORGAN AND ACCOUNTABLE SITE STATUS**

<b>NORMAL</b>			
Spleen	Stomach - Forestomach	Stomach - Glandular	
<b>OBSERVATIONS</b>			
Liver		Basophilic Focus	Mild
		Eosinophilic Focus	Moderate
		Hepatocellular Adenoma	
	Bile Duct	Hyperplasia	Mild
		Hypertrophy	Minimal
		Vacuolization Cytoplasmic	Mild
Note: HEPATOCLR ADEN TGLs = 1-3			
Mesentery		Inflammation	Chronic Active, Mild
Note: INFLAMMATION TGLs = 2-2			
<b>PRIMARY CAUSE OF DEATH</b>			
-			

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8938

TRT#: 13

SEX: Female

DAY ON TEST: 736

DOSE: 10 PPM 3-3

DISP: Terminal Sacrifice

HISTO: 852678

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Moderate

Hepatocellular Adenoma

Multiple

Bile Duct

Hyperplasia

Mild

Oval Cell

Hyperplasia

Mild

Hypertrophy

Minimal

Leukemia Mononuclear

Vacuolization Cytoplasmic

Moderate

Note: HEPATOCLR ADEN TGLs = 2-2,3-3

Pituitary Gland

Pars Distalis

Hyperplasia

Moderate

Note: HYPERPLASIA TGLs = 4-4

Spleen

Leukemia Mononuclear

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8939

TRT#: 13

SEX: Female

DAY ON TEST: 736

DOSE: 10 PPM 3-3

DISP: Terminal Sacrifice

HISTO: 852679

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Spleen

Stomach - Forestomach

Stomach - Glandular

OBSERVATIONS

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Marked

Hepatocellular Adenoma

Multiple

Bile Duct

Hyperplasia

Mild

Oval Cell

Hyperplasia

Moderate

Hypertrophy

Minimal

Necrosis

Minimal

Vacuolization Cytoplasmic

Moderate

Note: HEPATOCLR ADEN TGLs = 2-4

Pituitary Gland

Pars Distalis

Adenoma

[ Adenoma TGLS = 4-5 ]

Uterus

Polyp Stromal

Note: POLYP STROMAL TGLs = 1-2

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8940

TRT#: 13

SEX: Female

DAY ON TEST: 736

DOSE: 10 PPM 3-3

DISP: Terminal Sacrifice

HISTO: 852680

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Stomach - Forestomach

Stomach - Glandular

OBSERVATIONS

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Moderate

Hepatocellular Adenoma

Bile Duct

Hyperplasia

Mild

Oval Cell

Hyperplasia

Mild

Hypertrophy

Minimal

Leukemia Mononuclear

Vacuolization Cytoplasmic

Moderate

Note: HEPATOCLR ADEN TGLs = 3-3

Pituitary Gland

Pars Distalis

Cyst

Note: CYST TGLs = 1-4

Spleen

Leukemia Mononuclear

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8941

TRT#: 13

SEX: Female

DAY ON TEST: 737

DOSE: 10 PPM 3-3

DISP: Terminal Sacrifice

HISTO: 852681

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

**OBSERVATIONS**

Eye

Retina

Atrophy

Marked

Lens

Cataract

Marked

Note: CATARACT TGLs = 1-2

Note: ATROPHY TGLs = 1-2

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Moderate

Hepatocellular Adenoma

Oval Cell

Hyperplasia

Mild

Hypertrophy

Mild

Inflammation

Chronic Active, Mild

Vacuolization Cytoplasmic

Mild

Adenoma

Mammary Gland

Note: ADENOMA TGLs = 2-3

Stomach

Glandular

Mineralization

Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL2-3, SKIN MASS IS MAMMARY TUMOR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8942

TRT#: 13

SEX: Female

DAY ON TEST: 737

DOSE: 10 PPM 3-3

DISP: Terminal Sacrifice

HISTO: 852682

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Marked

Eosinophilic Focus

Marked

Bile Duct

Hyperplasia

Minimal

Oval Cell

Hyperplasia

Minimal

Hypertrophy

Mild

Vacuolization Cytoplasmic

Moderate

Pituitary Gland

Pars Distalis

Adenoma

Note: ADENOMA

TGLs = 1-2

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01  
Test Type: CHRONIC  
Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014  
Time Report Requested: 08:38:10  
First Dose M/F: NA / NA  
Lab: BAT

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ANIMAL ID: 8943	TRT#: 13 DOSE: 10 PPM 3-3	SEX: Female DISP: Terminal Sacrifice	DAY ON TEST: 737 HISTO: 852683
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ORGAN AND ACCOUNTABLE SITE STATUS

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NORMAL

Stomach - Forestomach	Stomach - Glandular
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OBSERVATIONS

Liver		Basophilic Focus	Mild
		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	
	Bile Duct	Hyperplasia	Mild
		Hypertrophy	Minimal
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Moderate
Note: HEPATOCLR ADEN TGLs = 1-2			
Spleen		Leukemia Mononuclear	
Uterus	Endometrium	Hyperplasia	Cystic, Glandular, Mild
Note: HYPERPLASIA TGLs = 2-3			

---

PRIMARY CAUSE OF DEATH

-

---

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8944

TRT#: 13

SEX: Female

DAY ON TEST: 737

DOSE: 10 PPM 3-3

DISP: Terminal Sacrifice

HISTO: 852684

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Marked

Hepatocellular Adenoma

Multiple

Bile Duct

Hyperplasia

Mild

Hypertrophy

Minimal

Inflammation

Chronic, Multifocal, Minimal

Vacuolization Cytoplasmic

Moderate

[ Vacuolization Cytoplasmic TGLS = 3-3,4-4 ]

Pituitary Gland

Pars Distalis

Adenoma

Note: ADENOMA

TGLs = 1-2

Uterus

Endometrium

Hyperplasia

Cystic, Glandular, Mild

Note: HYPERPLASIA

TGLs = 5-5

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8945

TRT#: 13

SEX: Female

DAY ON TEST: 737

DOSE: 10 PPM 3-3

DISP: Terminal Sacrifice

HISTO: 852685

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Stomach - Forestomach

Stomach - Glandular

OBSERVATIONS

Liver

Basophilic Focus

Eosinophilic Focus

Marked

Hepatocellular Adenoma

Multiple

Bile Duct

Hyperplasia

Mild

Oval Cell

Hyperplasia

Mild

Inflammation

Chronic Active, Mild

Leukemia Mononuclear

Vacuolization Cytoplasmic

Mild

[ Hyperplasia TGLS = 2-4 ]

Lymph Node

Mesenteric

Angiectasis

Marked

Mediastinal

Leukemia Mononuclear

Note: ANGIECTASIS TGLs = 3-5

Note: LEUKEMIA MONUC TGLs = 4-3

Pituitary Gland

Pars Distalis

Adenoma

Note: ADENOMA TGLs = 1-2

Spleen

Leukemia Mononuclear

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01  
Test Type: CHRONIC  
Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014  
Time Report Requested: 08:38:10  
First Dose M/F: NA / NA  
Lab: BAT

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ANIMAL ID: 8946	TRT#: 13 DOSE: 10 PPM 3-3	SEX: Female DISP: Terminal Sacrifice	DAY ON TEST: 738 HISTO: 852686
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ORGAN AND ACCOUNTABLE SITE STATUS

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NORMAL

Spleen	Stomach - Forestomach	Stomach - Glandular
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OBSERVATIONS

Liver		Eosinophilic Focus	Moderate
		Hypertrophy	Minimal
		Necrosis	Minimal
		Vacuolization Cytoplasmic	Moderate
Note: VACUOLIZ CYTO	TGLs = 2-3		
Mammary Gland		Fibroadenoma	
Note: FIBROADENOMA	TGLs = 1-2		
Spinal Cord	Nerve	Demyelination	Mild

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PRIMARY CAUSE OF DEATH

-

Animal Note: TGL1-2, SKIN MASS IS MAMMARY TUMOR

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01  
Test Type: CHRONIC  
Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014  
Time Report Requested: 08:38:10  
First Dose M/F: NA / NA  
Lab: BAT

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ANIMAL ID: 8947	TRT#: 13 DOSE: 10 PPM 3-3	SEX: Female DISP: Terminal Sacrifice	DAY ON TEST: 738 HISTO: 852687
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ORGAN AND ACCOUNTABLE SITE STATUS

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NORMAL

Spleen	Stomach - Forestomach	Stomach - Glandular
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OBSERVATIONS

Liver		Eosinophilic Focus	Moderate
	Bile Duct	Hyperplasia	Minimal
		Hypertrophy	Minimal
		Inflammation	Chronic Active, Minimal
		Vacuolization Cytoplasmic	Mild
Ovary	Periovarn Tiss	Cyst	
Note: CYST	TGLs = 1-2		
Pituitary Gland	Pars Distalis	Cyst	
	Pars Distalis	Hyperplasia	Moderate
Note: CYST	TGLs = 2-5		

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PRIMARY CAUSE OF DEATH

-

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8948

TRT#: 13

SEX: Female

DAY ON TEST: 738

DOSE: 10 PPM 3-3

DISP: Terminal Sacrifice

HISTO: 852688

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

**OBSERVATIONS**

Liver		Basophilic Focus	Mild
		Eosinophilic Focus	Moderate
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Mild
	Oval Cell	Hyperplasia	Minimal
		Hypertrophy	Mild
		Inflammation	Chronic Active, Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Moderate
Note: HEPATOCLR ADEN TGLs = 1-2			
Pituitary Gland	Pars Distalis	Hyperplasia	Moderate
Note: HYPERPLASIA TGLs = 2-3			
Spleen		Leukemia Mononuclear	
Stomach	Glandular	Mineralization	Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8949

TRT#: 13

SEX: Female

DAY ON TEST: 738

DOSE: 10 PPM 3-3

DISP: Terminal Sacrifice

HISTO: 852689

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

**OBSERVATIONS**

Liver

Bile Duct

Angiectasis

Minimal

Cyst

Hepatocellular Adenoma

Multiple

Bile Duct

Hyperplasia

Mild

Oval Cell

Hyperplasia

Minimal

Hypertrophy

Mild

Inflammation

Chronic Active, Mild

Vacuolization Cytoplasmic

Mild

Note: HEPATOCLR ADEN TGLs = 2-4,3-3

[ Vacuolization Cytoplasmic TGLS = 4-2 ]

Stomach

Glandular

Mineralization

Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8950

TRT#: 13

SEX: Female

DAY ON TEST: 646

DOSE: 10 PPM 3-3

DISP: Moribund Sacrifice

HISTO: 852690

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Clitoral Gland	Esophagus	Heart
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Lymph Node
Nose	Ovary	Pancreas	Parathyroid Gland
Salivary Glands	Skin	Spleen	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	Urinary Bladder

OBSERVATIONS

Kidney		Nephropathy	Chronic, Minimal
Liver		Eosinophilic Focus	Moderate
	Bile Duct	Hyperplasia	Mild
	Oval Cell	Hyperplasia	Mild
		Hypertrophy	Mild
		Vacuolization Cytoplasmic	Marked
Mammary Gland		Hyperplasia	Cystic, Moderate
Pituitary Gland	Pars Distalis	Cyst	
Thyroid Gland		Atrophy	Moderate
	C Cell	Hyperplasia	Moderate
Note: ATROPHY	TGLs = 2-7		
Uterus		Hemorrhage	Marked
		Inflammation	Acute, Marked
		Necrosis	Marked
		Polyp Stromal	

Note: POLYP STROMAL TGLs = 1-11

PRIMARY CAUSE OF DEATH -

Animal Note: MORIBUND SACRIFICE DUE TO UTERINE MASS

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01  
Test Type: CHRONIC  
Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014  
Time Report Requested: 08:38:10  
First Dose M/F: NA / NA  
Lab: BAT

ANIMAL ID: 8951

TRT#: 14

SEX: Female

DAY ON TEST: 729

DOSE: 10 PPM 10-3

DISP: Terminal Sacrifice

HISTO: 852701

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Spleen

Stomach - Forestomach

Stomach - Glandular

OBSERVATIONS

Liver

Eosinophilic Focus

Marked

Hepatocellular Adenoma

Bile Duct

Hyperplasia

Mild

Oval Cell

Hyperplasia

Mild

Hypertrophy

Mild

Inflammation

Chronic, Multifocal, Minimal

Vacuolization Cytoplasmic

Moderate

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01  
**Test Type:** CHRONIC  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 08:38:10  
**First Dose M/F:** NA / NA  
**Lab:** BAT

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<b>ANIMAL ID:</b> 8952	<b>TRT#:</b> 14	<b>SEX:</b> Female	<b>DAY ON TEST:</b> 729
	<b>DOSE:</b> 10 PPM 10-3	<b>DISP:</b> Terminal Sacrifice	<b>HISTO:</b> 852702

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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**NORMAL**

Spleen	Stomach - Forestomach	Stomach - Glandular
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**OBSERVATIONS**

Liver		Eosinophilic Focus	Marked
	Bile Duct	Hyperplasia	Mild
	Oval Cell	Hyperplasia	Minimal
		Hypertrophy	Minimal
		Inflammation	Chronic Active, Mild
		Vacuolization Cytoplasmic	Moderate
Uterus		Polyp Stromal	

Note: POLYP STROMAL TGLs = 1-2

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PRIMARY CAUSE OF DEATH

-

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8953

TRT#: 14

SEX: Female

DAY ON TEST: 685

DOSE: 10 PPM 10-3

DISP: Moribund Sacrifice

HISTO: 852703

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Clitoral Gland	Esophagus	Heart
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Nose
Pancreas	Parathyroid Gland	Pituitary Gland	Salivary Glands
Skin	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder		

OBSERVATIONS

Kidney		Nephropathy	Chronic, Minimal
Liver		Hepatocellular Adenoma	Multiple
		Hepatocellular Carcinoma	
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Mild
		Hypertrophy	Mild
		Leukemia Mononuclear	
Note: HEPATOCLR CARC TGLs = 6-13			
Lung		Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 4-2,4-3			
Lymph Node	Mandibular	Leukemia Mononuclear	
	Mediastinal	Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 2-2			
Mammary Gland		Hyperplasia	Cystic, Moderate
Ovary		Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 7-10			
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 5-12 ]			
Thyroid Gland	C Cell	Hyperplasia	Moderate
Uterus	Endometrium	Hyperplasia	Cystic, Glandular, Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL1-11, THE EYES ARE NORMAL ON MICRO, NO APPARENT PIGMENT

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)

**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:10

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8953

**TRT#:** 14

**SEX:** Female

**DAY ON TEST:** 685

**DOSE:** 10 PPM 10-3

**DISP:** Moribund Sacrifice

**HISTO:** 852703

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Animal Note: TGL3-6, PANCREATIC LYMPH NODE NOT FOUND AT TRIM

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

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\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01  
**Test Type:** CHRONIC  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 08:38:10  
**First Dose M/F:** NA / NA  
**Lab:** BAT

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<b>ANIMAL ID:</b> 8954	<b>TRT#:</b> 14	<b>SEX:</b> Female	<b>DAY ON TEST:</b> 729
	<b>DOSE:</b> 10 PPM 10-3	<b>DISP:</b> Terminal Sacrifice	<b>HISTO:</b> 852704

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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**NORMAL**

Stomach - Forestomach	Stomach - Glandular
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**OBSERVATIONS**

Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	
	Bile Duct	Hyperplasia	Mild
		Hypertrophy	Minimal
		Inflammation	Chronic Active, Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Moderate
Note: HEPATOCLR ADEN TGLs = 1-2			
Spleen		Leukemia Mononuclear	

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**PRIMARY CAUSE OF DEATH** -

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8955

TRT#: 14

SEX: Female

DAY ON TEST: 729

DOSE: 10 PPM 10-3

DISP: Terminal Sacrifice

HISTO: 852705

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**MISSING**

Intestine Large - Colon

**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Mild

Bile Duct

Hyperplasia

Mild

Hypertrophy

Minimal

Leukemia Mononuclear

Vacuolization Cytoplasmic

Mild

Adenoma

Pituitary Gland

Pars Distalis

Note: ADENOMA TGLs = 2-3

Spleen

Leukemia Mononuclear

Thyroid Gland

C Cell

Note: ADENOMA TGLs = 1-2

Adenoma

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL4, NCL IN WET TISSUE, COLON MISSING

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8956

TRT#: 14

SEX: Female

DAY ON TEST: 621

DOSE: 10 PPM 10-3

DISP: Moribund Sacrifice

HISTO: 852706

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone Marrow	Brain	Esophagus
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Nose
Ovary	Pancreas	Parathyroid Gland	Salivary Glands
Skin	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder		

OBSERVATIONS

Adrenal Gland	Cortex	Vacuolization Cytoplasmic	Moderate
Bone	Femur	Hyperostosis	
Clitoral Gland		Hyperplasia	Mild
Heart		Degeneration	Chronic, Moderate
Kidney		Nephropathy	Chronic, Minimal
Liver		Eosinophilic Focus	Mild
	Bile Duct	Hyperplasia	Moderate
		Hypertrophy	Moderate
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Mild
Pituitary Gland	Pars Distalis	Cyst	
Spleen		Leukemia Mononuclear	
Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Mild
Uterus	Endometrium	Hyperplasia	Cystic, Glandular, Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8957

TRT#: 14

SEX: Female

DAY ON TEST: 711

DOSE: 10 PPM 10-3

DISP: Moribund Sacrifice

HISTO: 852707

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Esophagus	Heart	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Lung	Lymph Node
Nose	Ovary	Parathyroid Gland	Salivary Glands
Skin	Spleen	Stomach - Forestomach	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	Uterus

**OBSERVATIONS**

Clitoral Gland		Inflammation	Chronic Active, Mild
Kidney		Nephropathy	Chronic, Mild
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	
	Bile Duct	Hyperplasia	Mild
	Oval Cell	Hyperplasia	Mild
		Hypertrophy	Minimal
		Necrosis	Moderate
		Vacuolization Cytoplasmic	Mild
Note: HEPATOCLR ADEN TGLs = 2-13			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Pancreas	Acinus	Atrophy	Mild
Pituitary Gland	Pars Distalis	Cyst	
	Pars Distalis	Hyperplasia	Mild
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO LIVER LESIONS

Animal Note: TGL1-11, CECUM IS NORMAL ON MICRO

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8958

TRT#: 14

SEX: Female

DAY ON TEST: 730

DOSE: 10 PPM 10-3

DISP: Terminal Sacrifice

HISTO: 852708

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

**OBSERVATIONS**

Eye

Retina

Atrophy

Marked

Lens

Cataract

Moderate

Note: CATARACT TGLs = 1-2

Note: ATROPHY TGLs = 1-2

Liver

Eosinophilic Focus

Marked

Hepatocellular Adenoma

Multiple

Bile Duct

Hyperplasia

Mild

Oval Cell

Hyperplasia

Minimal

Hypertrophy

Minimal

Inflammation

Chronic Active, Mild

Vacuolization Cytoplasmic

Mild

Stomach

Glandular

Mineralization

Moderate

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8959

TRT#: 14

SEX: Female

DAY ON TEST: 730

DOSE: 10 PPM 10-3

DISP: Terminal Sacrifice

HISTO: 852709

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Spleen

Stomach - Forestomach

Stomach - Glandular

OBSERVATIONS

Eye

Retina

Atrophy

Marked

Lens

Cataract

Marked

Note: ATROPHY TGLs = 1-2

Note: CATARACT TGLs = 1-2

Liver

Eosinophilic Focus

Marked

Hepatocellular Adenoma

Multiple

Bile Duct

Hyperplasia

Mild

Oval Cell

Hyperplasia

Mild

Hypertrophy

Minimal

Vacuolization Cytoplasmic

Mild

Note: HEPATOCLR ADEN TGLs = 3-7,4-4,5-6

Pituitary Gland

Pars Distalis

Adenoma

[ Adenoma TGLS = 2-3 ]

Uterus

Polyp Stromal

Note: POLYP STROMAL TGLs = 6-5

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8960

TRT#: 14

SEX: Female

DAY ON TEST: 730

DOSE: 10 PPM 10-3

DISP: Terminal Sacrifice

HISTO: 852710

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Spleen

Stomach - Forestomach

Stomach - Glandular

OBSERVATIONS

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Moderate

Hepatocellular Adenoma

Multiple

Bile Duct

Hyperplasia

Minimal

Oval Cell

Hyperplasia

Mild

Vacuolization Cytoplasmic

Mild

Note: HEPATOCLR ADEN TGLs = 2-3

Ovary

Periovarn Tiss

Cyst

Note: CYST TGLs = 1-2

Pituitary Gland

Pars Distalis

Adenoma

Note: ADENOMA TGLs = 4-4

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8961

TRT#: 14

SEX: Female

DAY ON TEST: 730

DOSE: 10 PPM 10-3

DISP: Terminal Sacrifice

HISTO: 852711

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

**OBSERVATIONS**

Liver		Basophilic Focus	Mild
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Mild
	Oval Cell	Hyperplasia	Mild
		Hypertrophy	Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Moderate
Note: HEPATOCLR ADEN TGLs = 1-2,2-3			
Spleen		Leukemia Mononuclear	
Stomach	Glandular	Mineralization	Moderate

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01  
Test Type: CHRONIC  
Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014  
Time Report Requested: 08:38:10  
First Dose M/F: NA / NA  
Lab: BAT

ANIMAL ID: 8962

TRT#: 14

SEX: Female

DAY ON TEST: 730

DOSE: 10 PPM 10-3

DISP: Terminal Sacrifice

HISTO: 852712

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Spleen

Stomach - Forestomach

Stomach - Glandular

OBSERVATIONS

Liver

Basophilic Focus

Minimal

Eosinophilic Focus

Moderate

Hepatocellular Adenoma

Multiple

Bile Duct

Hyperplasia

Mild

Oval Cell

Hyperplasia

Mild

Hypertrophy

Mild

Necrosis

Mild

Vacuolization Cytoplasmic

Moderate

Note: HEPATOCLR ADEN TGLs = 3-4

Mesentery

Inflammation

Chronic Active, Moderate

Note: INFLAMMATION TGLs = 2-3

Ovary

Periovarn Tiss

Cyst

Note: CYST TGLs = 1-2

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8963

TRT#: 14

SEX: Female

DAY ON TEST: 731

DOSE: 10 PPM 10-3

DISP: Terminal Sacrifice

HISTO: 852713

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

**OBSERVATIONS**

Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Mild
		Hypertrophy	Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Moderate
Ovary	Periovarn Tiss	Cyst	
Note: CYST	TGLs = 1-2		
Pituitary Gland	Pars Distalis	Adenoma	
Note: ADENOMA	TGLs = 2-3		
Spleen		Leukemia Mononuclear	
Stomach	Glandular	Mineralization	Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8964

TRT#: 14

SEX: Female

DAY ON TEST: 731

DOSE: 10 PPM 10-3

DISP: Terminal Sacrifice

HISTO: 852714

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Spleen

Stomach - Forestomach

OBSERVATIONS

Liver

Eosinophilic Focus

Marked

Hepatocellular Adenoma

Hepatodiaphragmatic Nodule

Bile Duct

Hyperplasia

Mild

Oval Cell

Hyperplasia

Minimal

Hypertrophy

Minimal

Vacuolization Cytoplasmic

Moderate

Note: ANOM HEPAT LOB TGLs = 1-2

Note: ANOM HEPAT LOB USED FOR HDN

Pituitary Gland

Pars Distalis

Hyperplasia

Moderate

Note: HYPERPLASIA TGLs = 3-3

Stomach

Glandular

Mineralization

Minimal

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL1-2, ANOM HEPAT LOB IS HDN

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8965

TRT#: 14

SEX: Female

DAY ON TEST: 731

DOSE: 10 PPM 10-3

DISP: Terminal Sacrifice

HISTO: 852715

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Moderate

Eosinophilic Focus

Marked

Hepatocellular Adenoma

Oval Cell

Hyperplasia

Mild

Hypertrophy

Minimal

Inflammation

Chronic Active, Mild

Leukemia Mononuclear

Vacuolization Cytoplasmic

Mild

Adenoma

Pituitary Gland

Pars Distalis

Note: ADENOMA

TGLs = 3-4

Spleen

Leukemia Mononuclear

Uterus

Cervix

Cyst

Note: CYST

TGLs = 1-2

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8966

TRT#: 14

SEX: Female

DAY ON TEST: 511

DOSE: 10 PPM 10-3

DISP: Natural Death

HISTO: 852716

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Brain	Esophagus
Heart	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Kidney
Nose	Ovary	Pancreas	Parathyroid Gland
Pituitary Gland	Salivary Glands	Skin	Stomach - Forestomach
Stomach - Glandular	Trachea	Urinary Bladder	Uterus

MISSING

Mammary Gland

INSUFFICIENT TISSUE

Thymus

OBSERVATIONS

Adrenal Gland	Cortex	Necrosis	Marked
Bone Marrow	Femoral	Leukemia Mononuclear	
Clitoral Gland	Duct	Dilatation	Moderate
Intestine Large	Cecum	Necrosis	Mild
Liver	Bile Duct	Hyperplasia	Moderate
		Hypertrophy	Mild
		Leukemia Mononuclear	
		Necrosis	Moderate
		Vacuolization Cytoplasmic	Mild
		Inflammation	Chronic Active, Moderate
Lung	Interstitium		
Note: INFLAMMATION TGLs = 2-2,2-3			
Lymph Node	Mandibular	Leukemia Mononuclear	
	Mandibular	Necrosis	Moderate
Spleen		Leukemia Mononuclear	
		Necrosis	Marked
[ Necrosis TGLS = 1-11 ]			
Thyroid Gland	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:10

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8966

**TRT#:** 14

**SEX:** Female

**DAY ON TEST:** 511

**DOSE:** 10 PPM 10-3

**DISP:** Natural Death

**HISTO:** 852716

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Animal Note: CAUSE OF DEATH, LEUKEMIA MONONUCLEAR

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8967

TRT#: 14

SEX: Female

DAY ON TEST: 731

DOSE: 10 PPM 10-3

DISP: Terminal Sacrifice

HISTO: 852717

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Stomach - Forestomach

Stomach - Glandular

OBSERVATIONS

Liver

Eosinophilic Focus

Marked

Hepatocellular Adenoma

Multiple

Hepatocellular Carcinoma

Bile Duct

Hyperplasia

Minimal

Oval Cell

Hyperplasia

Mild

Hypertrophy

Mild

Leukemia Mononuclear

Vacuolization Cytoplasmic

Moderate

Note: HEPATOCLR ADEN TGLs = 4-1

Note: HEPATOCLR CARC TGLs = 3-4

Ovary

Periovarn Tiss

Cyst

Note: CYST TGLs = 2-3

Spleen

Leukemia Mononuclear

Note: LEUKEMIA MONUC TGLs = 1-2

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8968

TRT#: 14

SEX: Female

DAY ON TEST: 731

DOSE: 10 PPM 10-3

DISP: Terminal Sacrifice

HISTO: 852718

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Mild

Hepatocellular Adenoma

Bile Duct

Hyperplasia

Mild

Leukemia Mononuclear

Vacuolization Cytoplasmic

Mild

Note: HEPATOCLR ADEN TGLs = 3-5

Note: LEUKEMIA MONUC TGLs = 4-4

Ovary

Periovarn Tiss

Cyst

Note: CYST TGLs = 1-3

Spleen

Leukemia Mononuclear

Note: LEUKEMIA MONUC TGLs = 5-6

Uterus

Polyp Stromal

Note: POLYP STROMAL TGLs = 2-2

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01  
**Test Type:** CHRONIC  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 08:38:10  
**First Dose M/F:** NA / NA  
**Lab:** BAT

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<b>ANIMAL ID:</b> 8969	<b>TRT#:</b> 14	<b>SEX:</b> Female	<b>DAY ON TEST:</b> 732
	<b>DOSE:</b> 10 PPM 10-3	<b>DISP:</b> Terminal Sacrifice	<b>HISTO:</b> 852719

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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**NORMAL**

Stomach - Forestomach

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**OBSERVATIONS**

Liver		Basophilic Focus	Moderate
		Eosinophilic Focus	Marked
	Bile Duct	Hyperplasia	Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Ovary	Periovarn Tiss	Cyst	
Note: CYST	TGLs = 1-2		
Spleen		Leukemia Mononuclear	
Stomach	Glandular	Mineralization	Moderate

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PRIMARY CAUSE OF DEATH

-

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01  
Test Type: CHRONIC  
Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014  
Time Report Requested: 08:38:10  
First Dose M/F: NA / NA  
Lab: BAT

ANIMAL ID: 8970

TRT#: 14

SEX: Female

DAY ON TEST: 732

DOSE: 10 PPM 10-3

DISP: Terminal Sacrifice

HISTO: 852720

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Spleen

Stomach - Forestomach

Stomach - Glandular

OBSERVATIONS

Liver

Basophilic Focus

Mild

Degeneration

Cystic, Mild

Eosinophilic Focus

Marked

Hepatocellular Adenoma

Multiple

Bile Duct

Hyperplasia

Mild

Oval Cell

Hyperplasia

Mild

Hypertrophy

Mild

Inflammation

Chronic, Multifocal, Mild

Vacuolization Cytoplasmic

Mild

Note: HEPATOCLR ADEN TGLs = 1-2,2-3

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 05077-01  
**Test Type:** CHRONIC  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 08:38:10  
**First Dose M/F:** NA / NA  
**Lab:** BAT

**ANIMAL ID:** 8971

**TRT#:** 14

**SEX:** Female

**DAY ON TEST:** 732

**DOSE:** 10 PPM 10-3

**DISP:** Terminal Sacrifice

**HISTO:** 852721

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

**OBSERVATIONS**

Eye

Retina

Atrophy

Marked

Lens

Cataract

Moderate

Note: ATROPHY TGLs = 1-2

[ Atrophy TGLs = 1-2 ]

Liver

Eosinophilic Focus

Marked

Hepatocellular Adenoma

Bile Duct

Hyperplasia

Mild

Vacuolization Cytoplasmic

Mild

[ Vacuolization Cytoplasmic TGLs = 2-3 ]

Stomach

Glandular

Mineralization

Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01  
Test Type: CHRONIC  
Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014  
Time Report Requested: 08:38:10  
First Dose M/F: NA / NA  
Lab: BAT

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ANIMAL ID: 8972	TRT#: 14	SEX: Female	DAY ON TEST: 732
	DOSE: 10 PPM 10-3	DISP: Terminal Sacrifice	HISTO: 852722

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ORGAN AND ACCOUNTABLE SITE STATUS

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NORMAL

Stomach - Forestomach

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OBSERVATIONS

Liver		Basophilic Focus	Moderate
		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Mild
	Oval Cell	Hyperplasia	Mild
		Hypertrophy	Minimal
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Note: HEPATOCLR ADEN	TGLs = 1-4,2-2,3-3		
Spleen		Leukemia Mononuclear	
Stomach	Glandular	Mineralization	Mild

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PRIMARY CAUSE OF DEATH

-

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8973

TRT#: 14

SEX: Female

DAY ON TEST: 732

DOSE: 10 PPM 10-3

DISP: Terminal Sacrifice

HISTO: 852723

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Marked

Hepatocellular Adenoma

Multiple

Bile Duct

Hyperplasia

Mild

Oval Cell

Hyperplasia

Mild

Hypertrophy

Minimal

Inflammation

Chronic, Multifocal, Minimal

Necrosis

Minimal

Vacuolization Cytoplasmic

Moderate

[ Hyperplasia TGLS = 2-3 ]

Mammary Gland

Fibroadenoma

Note: FIBROADENOMA TGLs = 1-2

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL1-2, SKIN MASS IS MAMMARY TUMOR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8974

TRT#: 14

SEX: Female

DAY ON TEST: 733

DOSE: 10 PPM 10-3

DISP: Terminal Sacrifice

HISTO: 852724

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Spleen Stomach - Forestomach

OBSERVATIONS

Liver		Basophilic Focus	
		Eosinophilic Focus	Marked
	Bile Duct	Hyperplasia	Mild
		Hypertrophy	Minimal
		Inflammation	Chronic Active, Mild
		Vacuolization Cytoplasmic	Mild
Ovary	Periovarn Tiss	Cyst	
Note: CYST	TGLs = 1-3		
Pituitary Gland	Pars Distalis	Adenoma	
Note: ADENOMA	TGLs = 2-2		
Stomach	Glandular	Mineralization	Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8975

TRT#: 14

SEX: Female

DAY ON TEST: 625

DOSE: 10 PPM 10-3

DISP: Moribund Sacrifice

HISTO: 852725

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Heart	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Kidney	Lymph Node	Nose
Pancreas	Pituitary Gland	Salivary Glands	Skin
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder	Uterus		

**MISSING**

Parathyroid Gland

**OBSERVATIONS**

Adrenal Gland	Cortex	Vacuolization Cytoplasmic	Mild
Clitoral Gland		Inflammation	Chronic Active, Mild
Liver	Bile Duct	Eosinophilic Focus	Mild
		Hyperplasia	Mild
		Hypertrophy	Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Marked
		Leukemia Mononuclear	
Lung			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Moderate
Ovary	Follicle	Cyst	
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-11 ]			
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01  
Test Type: CHRONIC  
Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014  
Time Report Requested: 08:38:10  
First Dose M/F: NA / NA  
Lab: BAT

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ANIMAL ID: 8976	TRT#: 14	SEX: Female	DAY ON TEST: 733
	DOSE: 10 PPM 10-3	DISP: Terminal Sacrifice	HISTO: 852726

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ORGAN AND ACCOUNTABLE SITE STATUS

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NORMAL

Stomach - Forestomach	Stomach - Glandular
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OBSERVATIONS

Liver		Basophilic Focus	Mild
		Eosinophilic Focus	Marked
		Hepatocellular Carcinoma	Multiple
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Moderate
Note: HEPATOCLR CARC TGLs = 1-2,2-3,3-4			
Pituitary Gland	Pars Distalis	Adenoma	
Note: ADENOMA TGLs = 5-6			
Spleen		Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 4-5			

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PRIMARY CAUSE OF DEATH

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-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8977

TRT#: 14

SEX: Female

DAY ON TEST: 714

DOSE: 10 PPM 10-3

DISP: Moribund Sacrifice

HISTO: 852727

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Brain	Clitoral Gland	Esophagus	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Nose	Ovary
Parathyroid Gland	Salivary Glands	Skin	Stomach - Forestomach
Trachea	Urinary Bladder		

INSUFFICIENT TISSUE

Bone Marrow

OBSERVATIONS

Adrenal Gland	Cortex	Hypertrophy	Focal, Marked
	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
Bone	Femur	Hyperostosis	
Heart		Leukemia Mononuclear	
Kidney		Leukemia Mononuclear	
		Nephropathy	Chronic, Minimal
Liver		Eosinophilic Focus	Mild
	Bile Duct	Hyperplasia	Mild
		Hypertrophy	Moderate
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Moderate
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
	Mediastinal	Leukemia Mononuclear	
	Mesenteric	Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 3-13,4-11,7-15		
Mammary Gland		Hyperplasia	Cystic, Moderate
Pancreas	Acinus	Atrophy	Mild
		Leukemia Mononuclear	
Pituitary Gland	Pars Distalis	Hyperplasia	Moderate
Note: HYPERPLASIA	TGLs = 1-7		

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:10

**First Dose M/F:** NA / NA

**Lab:** BAT

**ANIMAL ID:** 8977

**TRT#:** 14

**SEX:** Female

**DAY ON TEST:** 714

**DOSE:** 10 PPM 10-3

**DISP:** Moribund Sacrifice

**HISTO:** 852727

**ORGAN AND ACCOUNTABLE SITE STATUS**

Spinal Cord	Nerve	Demyelination	Mild
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 5-12 ]			
Stomach	Glandular	Leukemia Mononuclear	
Thymus		Leukemia Mononuclear	
Thyroid Gland	C Cell	Hyperplasia	Moderate
		Leukemia Mononuclear	
Uterus		Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 6-14			

**PRIMARY CAUSE OF DEATH**

-

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 05077-01  
**Test Type:** CHRONIC  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 08:38:10  
**First Dose M/F:** NA / NA  
**Lab:** BAT

**ANIMAL ID:** 8978

**TRT#:** 14

**SEX:** Female

**DAY ON TEST:** 733

**DOSE:** 10 PPM 10-3

**DISP:** Terminal Sacrifice

**HISTO:** 852728

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Eosinophilic Focus

Marked

Hepatocellular Adenoma

Bile Duct

Hyperplasia

Mild

Oval Cell

Hyperplasia

Minimal

Hypertrophy

Mild

Leukemia Mononuclear

Vacuolization Cytoplasmic

Mild

Note: HEPATOCLR ADEN TGLs = 1-2

Spleen

Leukemia Mononuclear

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8979

TRT#: 14

SEX: Female

DAY ON TEST: 733

DOSE: 10 PPM 10-3

DISP: Terminal Sacrifice

HISTO: 852729

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver	Bile Duct	Cyst Degeneration Eosinophilic Focus Hepatocellular Adenoma	Mild Cystic, Mild Marked Multiple
	Bile Duct	Hyperplasia	Mild
	Oval Cell	Hyperplasia Hypertrophy Leukemia Mononuclear Vacuolization Cytoplasmic	Moderate Mild Moderate
Lymph Node Note: LEUKEMIA MONUC TGLs = 1-2	Mandibular	Leukemia Mononuclear	
Spleen Note: LEUKEMIA MONUC TGLs = 2-3		Leukemia Mononuclear	
Uterus Note: HYPERPLASIA TGLs = 4-5	Endometrium	Hyperplasia	Cystic, Glandular, Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01  
Test Type: CHRONIC  
Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014  
Time Report Requested: 08:38:10  
First Dose M/F: NA / NA  
Lab: BAT

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ANIMAL ID: 8980	TRT#: 14	SEX: Female	DAY ON TEST: 733
	DOSE: 10 PPM 10-3	DISP: Terminal Sacrifice	HISTO: 852730

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ORGAN AND ACCOUNTABLE SITE STATUS

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NORMAL

Stomach - Forestomach	Stomach - Glandular
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OBSERVATIONS

Liver		Basophilic Focus	Mild
		Eosinophilic Focus	Marked
		Hepatocellular Carcinoma	
	Bile Duct	Hyperplasia	Mild
	Oval Cell	Hyperplasia	Mild
		Hypertrophy	Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Note: [ HEPATOCLR CARC ] TGLs = 3-5			
Pituitary Gland	Pars Distalis	Adenoma	
Note: ADENOMA TGLs = 1-2			
Spleen		Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 2-3			

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PRIMARY CAUSE OF DEATH

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8981

TRT#: 14

SEX: Female

DAY ON TEST: 736

DOSE: 10 PPM 10-3

DISP: Terminal Sacrifice

HISTO: 852731

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

**OBSERVATIONS**

Liver		Basophilic Focus	Mild
		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Mild
		Hypertrophy	Mild
		Inflammation	Chronic, Multifocal, Mild
Note: HEPATOCLR ADEN TGLs = 2-3,3-4,4-4			
Pituitary Gland	Pars Distalis	Adenoma	
Note: ADENOMA TGLs = 1-2			
Spleen		Fibrosis	Mild
Stomach	Glandular	Mineralization	Minimal

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01  
Test Type: CHRONIC  
Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014  
Time Report Requested: 08:38:10  
First Dose M/F: NA / NA  
Lab: BAT

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ANIMAL ID: 8982	TRT#: 14	SEX: Female	DAY ON TEST: 736
	DOSE: 10 PPM 10-3	DISP: Terminal Sacrifice	HISTO: 852732

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ORGAN AND ACCOUNTABLE SITE STATUS

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NORMAL

Spleen	Stomach - Forestomach	Stomach - Glandular
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OBSERVATIONS

Liver		Basophilic Focus	Minimal
		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	
	Bile Duct	Hyperplasia	Mild
	Oval Cell	Hyperplasia	Minimal
		Hypertrophy	Moderate
		Inflammation	Chronic, Multifocal, Mild
		Vacuolization Cytoplasmic	Moderate

[ Vacuolization Cytoplasmic TGLS = 2-2 ]

Pituitary Gland

Pars Distalis

Adenoma

[ Adenoma TGLS = 3-4 ]

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PRIMARY CAUSE OF DEATH

-

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8983

TRT#: 14

SEX: Female

DAY ON TEST: 608

DOSE: 10 PPM 10-3

DISP: Moribund Sacrifice

HISTO: 852733

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Esophagus
Heart	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Lung	Nose	Ovary	Pancreas
Parathyroid Gland	Salivary Glands	Skin	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	Urinary Bladder
Uterus			

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Cortex	Vacuolization Cytoplasmic	Mild
Brain		Compression	
		Hydrocephalus	Moderate
Clitoral Gland		Inflammation	Chronic Active, Mild
Kidney		Nephropathy	Chronic, Minimal
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Mild
	Oval Cell	Hyperplasia	Minimal
		Hypertrophy	Moderate
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
[ Vacuolization Cytoplasmic TGLS = 2-12,3-12 ]			
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Fibroadenoma	
		Hyperplasia	Cystic, Mild
Note: FIBROADENOMA TGLs = 1-13			
Pituitary Gland	Pars Distalis	Adenoma	
Note: ADENOMA TGLs = 4-7			
Spleen		Leukemia Mononuclear	
Thyroid Gland	C Cell	Hyperplasia	Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:10

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8983

**TRT#:** 14

**SEX:** Female

**DAY ON TEST:** 608

**DOSE:** 10 PPM 10-3

**DISP:** Moribund Sacrifice

**HISTO:** 852733

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Tissue NOS

Liposarcoma

Note: LIPOSARC TGLs = 5-11

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PRIMARY CAUSE OF DEATH

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Animal Note: TGL1-13, SKIN MASS IS MAMMARY TUMOR

Animal Note: MORIBUND SACRIFICE DUE TO PITUITARY TUMOR

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\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01  
**Test Type:** CHRONIC  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 08:38:10  
**First Dose M/F:** NA / NA  
**Lab:** BAT

**ANIMAL ID:** 8984

**TRT#:** 14

**SEX:** Female

**DAY ON TEST:** 736

**DOSE:** 10 PPM 10-3

**DISP:** Terminal Sacrifice

**HISTO:** 852734

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Moderate

Hepatocellular Adenoma

Bile Duct

Hyperplasia

Mild

Oval Cell

Hyperplasia

Minimal

Hypertrophy

Mild

Inflammation

Chronic, Multifocal, Minimal

Vacuolization Cytoplasmic

Moderate

Note: HEPATOCLR ADEN TGLs = 2-3

PRIMARY CAUSE OF DEATH

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\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01  
Test Type: CHRONIC  
Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014  
Time Report Requested: 08:38:10  
First Dose M/F: NA / NA  
Lab: BAT

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ANIMAL ID: 8985	TRT#: 14 DOSE: 10 PPM 10-3	SEX: Female DISP: Terminal Sacrifice	DAY ON TEST: 736 HISTO: 852735
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ORGAN AND ACCOUNTABLE SITE STATUS

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NORMAL

Spleen	Stomach - Forestomach	Stomach - Glandular
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OBSERVATIONS

Liver		Basophilic Focus	Mild
		Eosinophilic Focus	Moderate
		Hepatocellular Adenoma	
	Bile Duct	Hyperplasia	Mild
	Oval Cell	Hyperplasia	Mild
		Hypertrophy	Mild
		Vacuolization Cytoplasmic	Moderate
[ Hyperplasia TGLS = 2-3 ]			
Ovary	Periovarn Tiss	Cyst	
Note: CYST	TGLs = 1-2		

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PRIMARY CAUSE OF DEATH

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8986

TRT#: 14

SEX: Female

DAY ON TEST: 736

DOSE: 10 PPM 10-3

DISP: Terminal Sacrifice

HISTO: 852736

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Eosinophilic Focus

Marked

Hepatocellular Adenoma

Multiple

Bile Duct

Hyperplasia

Moderate

Oval Cell

Hyperplasia

Minimal

Leukemia Mononuclear

Note: HEPATOCLR ADEN TGLs = 3-5,5-7

Skin

Subcut Tiss

Fibrosarcoma

Note: FIBROSARC TGLs = 1-3

Spleen

Leukemia Mononuclear

Note: LEUKEMIA MONUC TGLs = 2-2

Uterus

Endometrium

Hyperplasia

Cystic, Glandular, Moderate

Note: HYPERPLASIA TGLs = 6-4

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8987

TRT#: 14

SEX: Female

DAY ON TEST: 610

DOSE: 10 PPM 10-3

DISP: Moribund Sacrifice

HISTO: 852737

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Heart	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lung	Lymph Node	Nose
Ovary	Pancreas	Salivary Glands	Skin
Spleen	Thymus	Trachea	Urinary Bladder
Uterus			

MISSING

Parathyroid Gland

OBSERVATIONS

Adrenal Gland	Cortex	Vacuolization Cytoplasmic	Mild
Clitoral Gland		Inflammation	Chronic Active, Moderate
Kidney		Nephropathy	Chronic, Mild
Liver		Eosinophilic Focus	Moderate
		Hepatocellular Adenoma	
		Hypertrophy	Mild
		Vacuolization Cytoplasmic	Marked
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Moderate
Pituitary Gland	Pars Distalis	Hyperplasia	Mild
Stomach	Forestomach	Acanthosis	Moderate
	Forestomach	Ulcer	Mild
	Glandular	Ulcer	Mild
Thyroid Gland	C Cell	Hyperplasia	Moderate
Tongue		Carcinoma	Metastatic (Zymbal'S Gland)
Note: CARCINOMA	TGLs = 2-11		
Zymbal's Gland		Carcinoma	
Note: CARCINOMA	TGLs = 1-12		

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)

**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:10

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8987

**TRT#:** 14

**SEX:** Female

**DAY ON TEST:** 610

**DOSE:** 10 PPM 10-3

**DISP:** Moribund Sacrifice

**HISTO:** 852737

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Animal Note: MORIBUND SACRIFICE DUE TO ZYMBALS GLAND TUMOR

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\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01  
**Test Type:** CHRONIC  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 08:38:10  
**First Dose M/F:** NA / NA  
**Lab:** BAT

**ANIMAL ID:** 8988

**TRT#:** 14

**SEX:** Female

**DAY ON TEST:** 737

**DOSE:** 10 PPM 10-3

**DISP:** Terminal Sacrifice

**HISTO:** 852738

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Spleen

Stomach - Forestomach

Stomach - Glandular

**OBSERVATIONS**

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Moderate

Hypertrophy

Mild

Inflammation

Chronic, Multifocal, Minimal

Vacuolization Cytoplasmic

Mild

Mesentery

Inflammation

Chronic Active, Mild

[ Inflammation TGLS = 4-3 ]

Urinary Bladder

Calculus Micro Observation Only

Mucosa

Hyperplasia

Papillary, Moderate

[ Calculus Micro Observation Only TGLS = 1-4 ]

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01  
Test Type: CHRONIC  
Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014  
Time Report Requested: 08:38:10  
First Dose M/F: NA / NA  
Lab: BAT

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ANIMAL ID: 8989	TRT#: 14 DOSE: 10 PPM 10-3	SEX: Female DISP: Terminal Sacrifice	DAY ON TEST: 737 HISTO: 852739
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ORGAN AND ACCOUNTABLE SITE STATUS

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NORMAL

Spleen	Stomach - Forestomach	Stomach - Glandular
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OBSERVATIONS

Liver		Basophilic Focus	Mild
		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	
	Oval Cell	Hyperplasia	Mild
		Hypertrophy	Minimal
		Inflammation	Chronic Active, Mild
		Vacuolization Cytoplasmic	Mild
Note: HEPATOCLR ADEN TGLs = 2-2			
Pituitary Gland	Pars Distalis	Hyperplasia	Moderate
[ Hyperplasia TGLS = 3-4 ]			

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PRIMARY CAUSE OF DEATH

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8990

TRT#: 14

SEX: Female

DAY ON TEST: 737

DOSE: 10 PPM 10-3

DISP: Terminal Sacrifice

HISTO: 852740

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Stomach - Forestomach

Stomach - Glandular

OBSERVATIONS

Liver

Basophilic Focus

Mild

Eosinophilic Focus

Mild

Hepatocellular Adenoma

Hepatocellular Carcinoma

Bile Duct

Hyperplasia

Mild

Oval Cell

Hyperplasia

Moderate

Leukemia Mononuclear

Vacuolization Cytoplasmic

Mild

Note: HEPATOCLR CARC TGLs = 2-3,3-4

Note: LEUKEMIA MONUC TGLs = 3-4

Pituitary Gland

Pars Distalis

Hyperplasia

Mild

Note: HYPERPLASIA TGLs = 4-5

Spleen

Leukemia Mononuclear

Note: LEUKEMIA MONUC TGLs = 1-2

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01  
Test Type: CHRONIC  
Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014  
Time Report Requested: 08:38:10  
First Dose M/F: NA / NA  
Lab: BAT

ANIMAL ID: 8991

TRT#: 14

SEX: Female

DAY ON TEST: 737

DOSE: 10 PPM 10-3

DISP: Terminal Sacrifice

HISTO: 852741

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Stomach - Forestomach

OBSERVATIONS

Liver

Eosinophilic Focus

Marked

Hepatocellular Adenoma

Multiple

Bile Duct

Hyperplasia

Moderate

Oval Cell

Hyperplasia

Moderate

Hypertrophy

Mild

Leukemia Mononuclear

Vacuolization Cytoplasmic

Mild

Note: HEPATOCLR ADEN TGLs = 3-4

Spleen

Leukemia Mononuclear

Note: LEUKEMIA MONUC TGLs = 1-2

Stomach

Glandular

Mineralization

Minimal

Uterus

Cervix

Cyst

Note: CYST TGLs = 4-5

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8992

TRT#: 14

SEX: Female

DAY ON TEST: 737

DOSE: 10 PPM 10-3

DISP: Terminal Sacrifice

HISTO: 852742

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Stomach - Forestomach

Stomach - Glandular

OBSERVATIONS

Eye

Retina

Atrophy

Marked

Lens

Cataract

Moderate

Note: CATARACT TGLs = 1-2

Note: ATROPHY TGLs = 1-2

Liver

Eosinophilic Focus

Marked

Hepatocellular Adenoma

Multiple

Bile Duct

Hyperplasia

Mild

Oval Cell

Hyperplasia

Mild

Hypertrophy

Mild

Leukemia Mononuclear

Vacuolization Cytoplasmic

Moderate

Note: HEPATOCLR ADEN TGLs = 3-4

Spleen

Leukemia Mononuclear

Uterus

Polyp Stromal

Note: POLYP STROMAL TGLs = 2-3

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8993

TRT#: 14

SEX: Female

DAY ON TEST: 653

DOSE: 10 PPM 10-3

DISP: Moribund Sacrifice

HISTO: 852743

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Brain	Clitoral Gland
Esophagus	Heart	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Nose	Parathyroid Gland	Salivary Glands
Skin	Stomach - Forestomach	Trachea	Urinary Bladder

OBSERVATIONS

Adrenal Gland	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
Kidney		Leukemia Mononuclear	
Liver		Eosinophilic Focus	Moderate
		Hepatocellular Carcinoma	
	Bile Duct	Hyperplasia	Moderate
		Hypertrophy	Moderate
		Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 4-4,4-11		
Note: HEPATOCLR CARC	TGLs = 5-11		
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
	Mesenteric	Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 3-6		
Mammary Gland		Hyperplasia	Cystic, Moderate
Ovary		Leukemia Mononuclear	
Pancreas	Acinus	Atrophy	Moderate
Pituitary Gland	Pars Distalis	Leukemia Mononuclear	
Spleen		Leukemia Mononuclear	
	[ Leukemia Mononuclear TGLs = 1-1 ]		
Stomach	Glandular	Ulcer	Mild
Thymus		Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 7-2		
Thyroid Gland	C Cell	Hyperplasia	Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:10

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8993

**TRT#:** 14

**SEX:** Female

**DAY ON TEST:** 653

**DOSE:** 10 PPM 10-3

**DISP:** Moribund Sacrifice

**HISTO:** 852743

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Uterus

Endometrium

Leukemia Mononuclear

Hyperplasia

Cystic, Glandular, Mild

Note: HYPERPLASIA TGLs = 2-10

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PRIMARY CAUSE OF DEATH

-

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Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8994

TRT#: 14

SEX: Female

DAY ON TEST: 738

DOSE: 10 PPM 10-3

DISP: Terminal Sacrifice

HISTO: 852744

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Stomach - Forestomach

Stomach - Glandular

OBSERVATIONS

Eye

Retina

Atrophy

Marked

Lens

Cataract

Moderate

[ Atrophy TGLS = 1-2 ]

[ Cataract TGLS = 1-2 ]

Liver

Eosinophilic Focus

Marked

Hepatocellular Adenoma

Multiple

Bile Duct

Hyperplasia

Mild

Oval Cell

Hyperplasia

Minimal

Hypertrophy

Mild

Inflammation

Chronic Active, Mild

Vacuolization Cytoplasmic

Mild

Note: HEPATOCLR ADEN TGLs = 5-6

Mesentery

Inflammation

Chronic Active, Moderate

Note: INFLAMMATION TGLs = 4-5

Pituitary Gland

Pars Distalis

Adenoma

Note: ADENOMA TGLs = 3-4

Skin

Subcut Tiss

Fibrosarcoma

Note: FIBROSARC TGLs = 2-3

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8995

TRT#: 14

SEX: Female

DAY ON TEST: 529

DOSE: 10 PPM 10-3

DISP: Natural Death

HISTO: 852745

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Esophagus	Heart	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Lymph Node	Nose
Ovary	Pancreas	Parathyroid Gland	Pituitary Gland
Salivary Glands	Skin	Spleen	Stomach - Forestomach
Stomach - Glandular	Trachea	Urinary Bladder	Uterus

MISSING

Thymus

OBSERVATIONS

Clitoral Gland	Duct	Dilatation	Mild
		Inflammation	Chronic Active, Mild
Kidney		Nephropathy	Chronic, Mild
Liver		Basophilic Focus	Minimal
	Bile Duct	Hepatocellular Carcinoma	
Note: HEPATOCLR CARC TGLs = 1-11		Hyperplasia	Mild
Lung		Hepatocellular Carcinoma	Metastatic (Liver)
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Mesentery		Hepatocellular Carcinoma	Metastatic (Liver)
Note: HEPATOCLR CARC TGLs = 2-12			
Thyroid Gland	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL2-12, LESION IS IN THE MESENTERY

Animal Note: CAUSE OF DEATH, LIVER TUMOR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8996

TRT#: 14

SEX: Female

DAY ON TEST: 738

DOSE: 10 PPM 10-3

DISP: Terminal Sacrifice

HISTO: 852746

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Stomach - Forestomach

Stomach - Glandular

OBSERVATIONS

Liver

Basophilic Focus

Mild

Degeneration

Cystic, Moderate

Eosinophilic Focus

Moderate

Hepatocellular Adenoma

Multiple

Hepatocellular Carcinoma

Bile Duct

Hyperplasia

Minimal

Oval Cell

Hyperplasia

Minimal

Hypertrophy

Minimal

Leukemia Mononuclear

Vacuolization Cytoplasmic

Moderate

Note: HEPATOCLR ADEN TGLs = 3-4

Note: HEPATOCLR CARC TGLs = 4-5

Pituitary Gland

Pars Distalis

Cyst

Pars Distalis

Hyperplasia

Mild

Note: CYST TGLs = 5-6

[ Hyperplasia TGLs = 5-6 ]

Spleen

Leukemia Mononuclear

Note: LEUKEMIA MONUC TGLs = 1-2

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8997

TRT#: 14

SEX: Female

DAY ON TEST: 652

DOSE: 10 PPM 10-3

DISP: Moribund Sacrifice

HISTO: 852747

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Heart	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Nose	Ovary	Pancreas
Parathyroid Gland	Salivary Glands	Skin	Stomach - Forestomach
Thymus	Trachea	Urinary Bladder	

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Moderate
	Cortex	Vacuolization Cytoplasmic	Mild
Clitoral Gland	Duct	Dilatation	Mild
Kidney		Leukemia Mononuclear	
		Nephropathy	Chronic, Mild
Liver		Eosinophilic Focus	Marked
	Bile Duct	Hyperplasia	Moderate
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Moderate
Note: LEUKEMIA MONUC	TGLs = 3-4,3-13		
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
	Mediastinal	Leukemia Mononuclear	
	Mesenteric	Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 2-12		
Mammary Gland		Hyperplasia	Cystic, Moderate
Pituitary Gland	Pars Distalis	Hyperplasia	Mild
Spleen		Fibrosis	Moderate
		Leukemia Mononuclear	
[ Fibrosis TGLS = 6-11 ]			
[ Leukemia Mononuclear TGLS = 1-11 ]			
Stomach	Glandular	Ulcer	Mild
Thyroid Gland	C Cell	Hyperplasia	Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:10

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 8997

**TRT#:** 14

**SEX:** Female

**DAY ON TEST:** 652

**DOSE:** 10 PPM 10-3

**DISP:** Moribund Sacrifice

**HISTO:** 852747

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Uterus

Endometrium

Hyperplasia

Cystic, Glandular, Mild

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**PRIMARY CAUSE OF DEATH**

-

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Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

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\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 8998

TRT#: 14

SEX: Female

DAY ON TEST: 278

DOSE: 10 PPM 10-3

DISP: Moribund Sacrifice

HISTO: 852748

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Clitoral Gland	Esophagus	Heart	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Jejunum
Islets, Pancreatic	Kidney	Lung	Mammary Gland
Nose	Ovary	Pancreas	Parathyroid Gland
Pituitary Gland	Salivary Glands	Spleen	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	

**MISSING**

Intestine Small - Ileum	Urinary Bladder
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**OBSERVATIONS**

Adrenal Gland	Cortex	Vacuolization Cytoplasmic	Minimal
Liver		Hematopoietic Cell Proliferation	Mild
		Hypertrophy	Minimal
		Inflammation	Chronic Active, Mild
		Necrosis	Mild
Lymph Node			
Note: MANDIBULAR LN MISSING			
Note: MANDIBULAR LN NORMAL			
Skin	Subcut Tiss	Fibrosarcoma	
[ Fibrosarcoma TGLS = 1-11 ]			
Thyroid Gland	C Cell	Hyperplasia	Moderate
Uterus	Cervix	Cyst	

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO SKIN MASS

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01  
**Test Type:** CHRONIC  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 08:38:10  
**First Dose M/F:** NA / NA  
**Lab:** BAT

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<b>ANIMAL ID:</b> 8999	<b>TRT#:</b> 14	<b>SEX:</b> Female	<b>DAY ON TEST:</b> 738
	<b>DOSE:</b> 10 PPM 10-3	<b>DISP:</b> Terminal Sacrifice	<b>HISTO:</b> 852749

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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**NORMAL**

Spleen	Stomach - Forestomach	Stomach - Glandular
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**OBSERVATIONS**

Liver		Basophilic Focus	Moderate
		Eosinophilic Focus	Moderate
		Hepatocellular Adenoma	Multiple
	Oval Cell	Hyperplasia	Mild
		Hypertrophy	Minimal
		Vacuolization Cytoplasmic	Moderate

[ Vacuolization Cytoplasmic TGLS = 1-2,2-3 ]

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**PRIMARY CAUSE OF DEATH**

-

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01  
Test Type: CHRONIC  
Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014  
Time Report Requested: 08:38:10  
First Dose M/F: NA / NA  
Lab: BAT

ANIMAL ID: 9000

TRT#: 14

SEX: Female

DAY ON TEST: 738

DOSE: 10 PPM 10-3

DISP: Terminal Sacrifice

HISTO: 852750

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Stomach - Forestomach

Stomach - Glandular

OBSERVATIONS

Clitoral Gland

Duct

Adenoma

Dilatation

Moderate

Note: ADENOMA TGLs = 2-3

Note: DILATATION TGLs = 3-4

Liver

Eosinophilic Focus

Marked

Hepatocellular Adenoma

Multiple

Bile Duct

Hyperplasia

Mild

Oval Cell

Hyperplasia

Mild

Leukemia Mononuclear

Note: LEUKEMIA MONUC TGLs = 4-5

Note: HEPATOCLR ADEN TGLs = 5-6

Spleen

Leukemia Mononuclear

Note: LEUKEMIA MONUC TGLs = 1-2

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9001

TRT#: 15

SEX: Female

DAY ON TEST: 729

DOSE: 30 PPM 0-10

DISP: Terminal Sacrifice

HISTO: 852281

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla

Spleen

OBSERVATIONS

Adrenal Gland

Cortex

Hyperplasia

Mild

Kidney

Nephropathy

Chronic, Mild

Liver

Basophilic Focus

Minimal

Eosinophilic Focus

Marked

Hepatocellular Adenoma

Multiple

Bile Duct

Hyperplasia

Moderate

Oval Cell

Hyperplasia

Mild

Hypertrophy

Moderate

Inflammation

Chronic, Multifocal, Mild

Vacuolization Cytoplasmic

Moderate

Note: HEPATOCLR ADEN TGLs = 2-4

Mammary Gland

Hyperplasia

Cystic, Mild

Pancreas

Acinus

Atrophy

Mild

Parathyroid Gland

Hyperplasia

Mild

Pituitary Gland

Pars Distalis

Hyperplasia

Moderate

Thyroid Gland

C Cell

Hyperplasia

Mild

Uterus

Endometrium

Hyperplasia

Cystic, Glandular, Mild

Note: HYPERPLASIA TGLs = 1-10

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9002

TRT#: 15

SEX: Female

DAY ON TEST: 729

DOSE: 30 PPM 0-10

DISP: Terminal Sacrifice

HISTO: 852282

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Heart	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lung	Lymph Node	Ovary
Parathyroid Gland	Salivary Glands	Skin	Spleen
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder	Uterus		

OBSERVATIONS

Adrenal Gland	Cortex	Hypertrophy	Mild
Clitoral Gland		Inflammation	Chronic Active, Mild
Kidney		Nephropathy	Chronic, Mild
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Mild
	Oval Cell	Hyperplasia	Mild
		Inflammation	Chronic, Multifocal, Mild
		Vacuolization Cytoplasmic	Mild
Note: HEPATOCLR ADEN TGLs = 1-4			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Nose	Mucosa	Inflammation	Chronic Active, Mild
Pancreas	Acinus	Atrophy	Mild
Pituitary Gland	Pars Distalis	Hyperplasia	Mild
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9003

TRT#: 15

SEX: Female

DAY ON TEST: 729

DOSE: 30 PPM 0-10

DISP: Terminal Sacrifice

HISTO: 852283

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Lung	Lymph Node	Nose	Ovary
Pancreas	Parathyroid Gland	Pituitary Gland	Salivary Glands
Skin	Spleen	Stomach - Forestomach	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	Uterus

OBSERVATIONS

Adrenal Gland	Cortex	Hypertrophy	Mild
	Cortex	Vacuolization Cytoplasmic	Mild
Clitoral Gland	Duct	Dilatation	Moderate
Heart		Degeneration	Chronic, Minimal
Kidney		Nephropathy	Chronic, Minimal
Liver		Basophilic Focus	Mild
		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Moderate
		Hypertrophy	Moderate
		Inflammation	Chronic, Multifocal, Mild
		Vacuolization Cytoplasmic	Moderate

Note: HEPATOCLR ADEN TGLs = 3-4,4-13,5-4

Lymph Node

Note: MANDIBULAR LN NORMAL

Mammary Gland

Fibroadenoma

Multiple

Hyperplasia

Cystic, Mild

Note: FIBROADENOMA TGLs = 1-11,2-12

Thyroid Gland

C Cell

Hyperplasia

Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL1-11,2-12, SKIN MASSES ARE MAMMARY GLAND TUMORS

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)

**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:10

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 9003

**TRT#:** 15

**SEX:** Female

**DAY ON TEST:** 729

**DOSE:** 30 PPM 0-10

**DISP:** Terminal Sacrifice

**HISTO:** 852283

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9004

TRT#: 15

SEX: Female

DAY ON TEST: 729

DOSE: 30 PPM 0-10

DISP: Terminal Sacrifice

HISTO: 852284

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Heart	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lung	Lymph Node	Nose
Ovary	Parathyroid Gland	Pituitary Gland	Salivary Glands
Skin	Spleen	Stomach - Forestomach	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	

OBSERVATIONS

Adrenal Gland	Cortex	Hypertrophy	Mild
	Cortex	Vacuolization Cytoplasmic	Mild
Clitoral Gland		Inflammation	Chronic Active, Mild
Kidney	Renal Tubule	Mineralization	Mild
		Nephropathy	Chronic, Mild
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Mild
	Oval Cell	Hyperplasia	Minimal
		Hypertrophy	Mild
		Inflammation	Chronic, Multifocal, Mild
		Vacuolization Cytoplasmic	Mild
Note: HEPATOCLR ADEN TGLs = 1-4			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Moderate
Pancreas	Acinus	Atrophy	Minimal
Thyroid Gland	C Cell	Hyperplasia	Mild
Uterus	Endometrium	Hyperplasia	Cystic, Glandular, Moderate
Note: HYPERPLASIA TGLs = 2-10			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9005

TRT#: 15

SEX: Female

DAY ON TEST: 730

DOSE: 30 PPM 0-10

DISP: Terminal Sacrifice

HISTO: 852285

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Lung	Lymph Node	Nose	Ovary
Parathyroid Gland	Salivary Glands	Skin	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	Urinary Bladder

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Cortex	Vacuolization Cytoplasmic	Mild
Clitoral Gland		Inflammation	Chronic Active, Mild
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Minimal
Liver		Basophilic Focus	Mild
		Eosinophilic Focus	Mild
	Bile Duct	Hyperplasia	Mild
		Hypertrophy	Mild
		Inflammation	Chronic Active, Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Mammary Gland		Hyperplasia	Cystic, Moderate
Pancreas	Acinus	Atrophy	Moderate
Pituitary Gland	Pars Distalis	Adenoma	
Note: ADENOMA	TGLs = 1-7		
Spleen		Leukemia Mononuclear	
Thyroid Gland	C Cell	Hyperplasia	Moderate
Uterus	Endometrium	Hyperplasia	Cystic, Glandular, Mild
		Polyp Stromal	
Note: POLYP STROMAL	TGLs = 2-10		

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9006

TRT#: 15

SEX: Female

DAY ON TEST: 730

DOSE: 30 PPM 0-10

DISP: Terminal Sacrifice

HISTO: 852286

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Lung
Lymph Node	Nose	Ovary	Parathyroid Gland
Salivary Glands	Spleen	Stomach - Forestomach	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	

OBSERVATIONS

Adrenal Gland	Cortex	Vacuolization Cytoplasmic	Mild
Clitoral Gland	Duct	Dilatation	Moderate
Heart		Degeneration	Chronic, Mild
Intestine Large	Rectum	Parasite Metazoan	
Kidney		Nephropathy	Chronic, Mild
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Mild
	Oval Cell	Hyperplasia	Mild
		Hypertrophy	Moderate
		Inflammation	Chronic, Multifocal, Mild
		Vacuolization Cytoplasmic	Mild
Note: HEPATOCLR ADEN TGLs = 2-4,3-12			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Moderate
Pancreas	Acinus	Atrophy	Marked
Pituitary Gland	Pars Distalis	Adenoma	Mild
Skin		Squamous Cell Papilloma	
Note: PAPILLOMA SQUA TGLs = 1-11			
Thyroid Gland	C Cell	Hyperplasia	Mild
Uterus	Endometrium	Hyperplasia	Cystic, Glandular, Moderate
Note: HYPERPLASIA TGLs = 4-10			

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:10

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 9006

**TRT#:** 15

**SEX:** Female

**DAY ON TEST:** 730

**DOSE:** 30 PPM 0-10

**DISP:** Terminal Sacrifice

**HISTO:** 852286

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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PRIMARY CAUSE OF DEATH

-

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9007

TRT#: 15

SEX: Female

DAY ON TEST: 593

DOSE: 30 PPM 0-10

DISP: Natural Death

HISTO: 852287

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Kidney	Nose	Ovary
Parathyroid Gland	Pituitary Gland	Salivary Glands	Skin
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder	Uterus		

**OBSERVATIONS**

Clitoral Gland		Inflammation	Chronic Active, Mild
Heart		Leukemia Mononuclear	
Liver		Eosinophilic Focus	Marked
	Bile Duct	Fibrosis	Mild
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Mild
	Oval Cell	Hyperplasia	Moderate
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Note: HEPATOCLR ADEN	TGLs = 2-4,2-11,2-12,3-11,3-12		
Note: LEUKEMIA MONUC	TGLs = 1-4,1-11,1-12		
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Mild
Spleen		Leukemia Mononuclear	
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: CAUSE OF DEATH, LEUKEMIA MONONUCLEAR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9008

TRT#: 15

SEX: Female

DAY ON TEST: 730

DOSE: 30 PPM 0-10

DISP: Terminal Sacrifice

HISTO: 852288

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Lung	Lymph Node	Nose	Ovary
Parathyroid Gland	Salivary Glands	Skin	Spleen
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder	Uterus		

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Moderate
	Cortex	Vacuolization Cytoplasmic	Mild
Clitoral Gland	Duct	Dilatation	Moderate
		Inflammation	Chronic Active, Mild
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Mild
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
		Hepatocellular Carcinoma	
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Mild
		Inflammation	Chronic, Multifocal, Mild
		Vacuolization Cytoplasmic	Mild
Note: HEPATOCLR CARC	TGLs = 1-11		
Note: HEPATOCLR ADEN	TGLs = 2-4		
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Moderate
Pancreas	Acinus	Atrophy	Mild
Pituitary Gland	Pars Distalis	Hyperplasia	Mild
Thyroid Gland	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9009

TRT#: 15

SEX: Female

DAY ON TEST: 688

DOSE: 30 PPM 0-10

DISP: Moribund Sacrifice

HISTO: 852289

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Clitoral Gland	Esophagus	Heart	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Lung	Lymph Node
Nose	Ovary	Pancreas	Parathyroid Gland
Pituitary Gland	Salivary Glands	Skin	Spleen
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder	Uterus		

**OBSERVATIONS**

Adrenal Gland	Cortex	Hyperplasia	Mild
	Cortex	Vacuolization Cytoplasmic	Mild
Kidney	Renal Tubule	Mineralization	Moderate
		Nephropathy	Chronic, Mild
Liver	Bile Duct	Hyperplasia	Mild
		Hypertrophy	Mild
		Inflammation	Chronic, Multifocal, Mild
		Vacuolization Cytoplasmic	Moderate
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Moderate
Thyroid Gland	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO UNDETERMINED CAUSE

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9010

TRT#: 15

SEX: Female

DAY ON TEST: 730

DOSE: 30 PPM 0-10

DISP: Terminal Sacrifice

HISTO: 852290

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Heart	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lung	Lymph Node	Nose
Ovary	Parathyroid Gland	Pituitary Gland	Salivary Glands
Skin	Spleen	Stomach - Forestomach	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	Uterus

OBSERVATIONS

Adrenal Gland	Cortex	Vacuolization Cytoplasmic	Mild
Clitoral Gland	Duct	Dilatation	Moderate
Kidney		Nephropathy	Chronic, Minimal
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Mild
	Oval Cell	Hyperplasia	Mild
		Inflammation	Chronic, Multifocal, Mild
		Vacuolization Cytoplasmic	Moderate
Note: HEPATOCLR ADEN TGLs = 1-4			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Mild
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9011

TRT#: 15

SEX: Female

DAY ON TEST: 731

DOSE: 30 PPM 0-10

DISP: Terminal Sacrifice

HISTO: 852291

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Clitoral Gland	Esophagus	Intestine Large - Cecum
Intestine Large - Colon	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Kidney	Lung	Lymph Node
Nose	Ovary	Parathyroid Gland	Pituitary Gland
Salivary Glands	Skin	Stomach - Forestomach	Stomach - Glandular
Trachea	Urinary Bladder	Uterus	

MISSING

Thymus

OBSERVATIONS

Heart		Degeneration	Chronic, Mild
Intestine Large	Rectum	Parasite Metazoan	
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Note: HEPATOCLR ADEN TGLs = 2-4			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Moderate
Pancreas	Acinus	Atrophy	Moderate
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-11 ]			
Thyroid Gland	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9012

TRT#: 15

SEX: Female

DAY ON TEST: 731

DOSE: 30 PPM 0-10

DISP: Terminal Sacrifice

HISTO: 852292

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Kidney	Lung	Lymph Node
Mammary Gland	Nose	Ovary	Parathyroid Gland
Pituitary Gland	Salivary Glands	Skin	Spleen
Stomach - Forestomach	Stomach - Glandular	Thymus	Thyroid Gland
Trachea	Urinary Bladder		

OBSERVATIONS

Clitoral Gland		Inflammation	Chronic Active, Mild
Heart		Degeneration	Chronic, Mild
Liver		Basophilic Focus	Mild
	Bile Duct	Cyst	Mild
		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Mild
	Oval Cell	Hyperplasia	Moderate
		Inflammation	Chronic, Multifocal, Mild
		Vacuolization Cytoplasmic	Moderate
Note: HEPATOCLR ADEN TGLs = 1-4,2-4			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Pancreas	Acinus	Atrophy	Mild
Uterus		Polyp Stromal	
Note: POLYP STROMAL TGLs = 3-10			

PRIMARY CAUSE OF DEATH

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9013

TRT#: 15

SEX: Female

DAY ON TEST: 674

DOSE: 30 PPM 0-10

DISP: Moribund Sacrifice

HISTO: 852293

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Eye	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lung	Lymph Node	Nose
Ovary	Parathyroid Gland	Pituitary Gland	Salivary Glands
Skin	Stomach - Forestomach	Stomach - Glandular	Thymus
Thyroid Gland	Trachea	Urinary Bladder	Uterus

OBSERVATIONS

Adrenal Gland	Cortex	Vacuolization Cytoplasmic	Moderate
Clitoral Gland	Duct	Dilatation	Moderate
		Inflammation	Chronic Active, Mild
Eye			
Note: 82			
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Mild
Liver		Basophilic Focus	Mild
		Eosinophilic Focus	Mild
	Bile Duct	Hyperplasia	Mild
	Oval Cell	Hyperplasia	Moderate
		Inflammation	Chronic, Multifocal, Mild
		Necrosis	Moderate
		Vacuolization Cytoplasmic	Marked
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Moderate
Pancreas	Acinus	Atrophy	Mild
Spleen		Hematopoietic Cell Proliferation	Moderate

PRIMARY CAUSE OF DEATH

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9014

TRT#: 15

SEX: Female

DAY ON TEST: 731

DOSE: 30 PPM 0-10

DISP: Terminal Sacrifice

HISTO: 852294

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Esophagus	Heart	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Lung	Lymph Node
Nose	Ovary	Pancreas	Pituitary Gland
Salivary Glands	Skin	Spleen	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	Urinary Bladder
Uterus			

**MISSING**

Parathyroid Gland

**OBSERVATIONS**

Clitoral Gland	Duct	Dilatation	Moderate
Kidney		Nephropathy	Chronic, Minimal
Liver		Eosinophilic Focus	Marked
	Bile Duct	Hepatocellular Adenoma	Multiple
		Hyperplasia	Mild
		Inflammation	Chronic, Multifocal, Mild
		Vacuolization Cytoplasmic	Moderate
Note: HEPATOCLR ADEN TGLs = 1-4,2-11			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Thyroid Gland	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9015

TRT#: 15

SEX: Female

DAY ON TEST: 731

DOSE: 30 PPM 0-10

DISP: Terminal Sacrifice

HISTO: 852295

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Lung	Lymph Node	Nose	Ovary
Parathyroid Gland	Salivary Glands	Skin	Spleen
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder	Uterus		

**OBSERVATIONS**

Clitoral Gland	Duct	Dilatation	Moderate
Heart		Degeneration	Chronic, Mild
Intestine Large	Rectum	Parasite Metazoan	
Kidney		Nephropathy	Chronic, Minimal
Liver		Basophilic Focus	Mild
	Bile Duct	Eosinophilic Focus	Marked
		Hyperplasia	Moderate
		Hypertrophy	Moderate
		Inflammation	Chronic Active, Mild
		Vacuolization Cytoplasmic	Mild
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Moderate
Pancreas	Acinus	Atrophy	Moderate
Pituitary Gland	Pars Distalis	Hyperplasia	Moderate
Note: HYPERPLASIA TGLs = 3-7			
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9016

TRT#: 15

SEX: Female

DAY ON TEST: 731

DOSE: 30 PPM 0-10

DISP: Terminal Sacrifice

HISTO: 852296

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Brain	Esophagus
Heart	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Nose	Ovary	Parathyroid Gland	Pituitary Gland
Salivary Glands	Skin	Stomach - Forestomach	Stomach - Glandular
Trachea	Urinary Bladder	Uterus	

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
Bone Marrow	Femoral	Leukemia Mononuclear	
Clitoral Gland	Duct	Dilatation	Moderate
Kidney		Leukemia Mononuclear	
		Nephropathy	Chronic, Mild
Liver		Eosinophilic Focus	Marked
	Bile Duct	Hyperplasia	Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Minimal
Note: LEUKEMIA MONUC	TGLs = 6-4		
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
	Mediastinal	Leukemia Mononuclear	
	Mediastinal	Leukemia Mononuclear	
	Pancreatic	Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 2-11,3-7,4-2,5-13		
Mammary Gland		Hyperplasia	Cystic, Moderate
Pancreas	Acinus	Atrophy	Mild
Spleen		Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 1-12		
Thymus		Leukemia Mononuclear	
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9017

TRT#: 15

SEX: Female

DAY ON TEST: 732

DOSE: 30 PPM 0-10

DISP: Terminal Sacrifice

HISTO: 852297

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Heart	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lymph Node	Nose	Pancreas
Parathyroid Gland	Salivary Glands	Skin	Spleen
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder			

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Moderate
	Cortex	Hypertrophy	Moderate
Clitoral Gland	Duct	Dilatation	Moderate
Kidney		Nephropathy	Chronic, Minimal
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Mild
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Moderate
		Hypertrophy	Moderate
		Inflammation	Chronic, Multifocal, Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Moderate
Note: HEPATOCLR ADEN	TGLs = 3-11,4-4		
Lung		Alveolar/Bronchiolar Adenoma	
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Ovary	Periovarn Tiss	Cyst	
		Leiomyosarcoma	
Note: LEIOMYOSAR	TGLs = 1-10		
Note: CYST	TGLs = 1-10,2-12		

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:10

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 9017

**TRT#:** 15

**SEX:** Female

**DAY ON TEST:** 732

**DOSE:** 30 PPM 0-10

**DISP:** Terminal Sacrifice

**HISTO:** 852297

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Pituitary Gland  
Note: CYST      TGLs = 5-7

Pars Distalis

Cyst

Thyroid Gland

C Cell

Hyperplasia

Moderate

Uterus

Endometrium

Hyperplasia

Cystic, Glandular, Moderate

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**PRIMARY CAUSE OF DEATH**

-

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9018

TRT#: 15

SEX: Female

DAY ON TEST: 732

DOSE: 30 PPM 0-10

DISP: Terminal Sacrifice

HISTO: 852298

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Lung	Lymph Node	Nose	Ovary
Pancreas	Parathyroid Gland	Pituitary Gland	Salivary Glands
Skin	Spleen	Stomach - Forestomach	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Cortex	Hypertrophy	Mild
Clitoral Gland	Duct	Dilatation	Moderate
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Minimal
Liver		Eosinophilic Focus	Moderate
	Bile Duct	Hepatocellular Adenoma	Multiple
	Oval Cell	Hyperplasia	Mild
		Hyperplasia	Moderate
		Hypertrophy	Moderate
		Inflammation	Chronic, Multifocal, Mild
		Vacuolization Cytoplasmic	Moderate
Note: HEPATOCLR ADEN TGLs = 1-4			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Moderate
Thyroid Gland	C Cell	Hyperplasia	Mild
Uterus	Endometrium	Hyperplasia	Cystic, Glandular, Moderate
		Polyp Stromal	
Note: POLYP STROMAL TGLs = 2-10			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9019

TRT#: 15

SEX: Female

DAY ON TEST: 732

DOSE: 30 PPM 0-10

DISP: Terminal Sacrifice

HISTO: 852299

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Brain	Esophagus	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Lung	Lymph Node
Salivary Glands	Skin	Spleen	Stomach - Forestomach
Stomach - Glandular	Trachea	Urinary Bladder	

MISSING

Parathyroid Gland	Thymus
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OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Marked
	Cortex	Hypertrophy	Mild
Note: HYPERPLASIA	TGLs = 3-7		
Bone	Femur	Hyperostosis	
Clitoral Gland	Duct	Dilatation	Moderate
		Inflammation	Chronic Active, Mild
Eye	Retina	Atrophy	Marked
	Lens	Cataract	Moderate
Note: ATROPHY	TGLs = 1-11		
Note: CATARACT	TGLs = 1-11		
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Minimal
Liver		Basophilic Focus	Mild
		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Moderate
		Inflammation	Chronic, Multifocal, Mild
		Vacuolization Cytoplasmic	Moderate
Note: HEPATOCLR ADEN	TGLs = 2-4		
Lymph Node			
Note: MANDIBULAR LN NORMAL			

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:10

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 9019

**TRT#:** 15

**SEX:** Female

**DAY ON TEST:** 732

**DOSE:** 30 PPM 0-10

**DISP:** Terminal Sacrifice

**HISTO:** 852299

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Mammary Gland

Hyperplasia

Cystic, Moderate

Pancreas

Acinus

Atrophy

Moderate

Pituitary Gland

Pars Distalis

Hyperplasia

Mild

Thyroid Gland

C Cell

Hyperplasia

Moderate

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**PRIMARY CAUSE OF DEATH**

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9020

TRT#: 15

SEX: Female

DAY ON TEST: 732

DOSE: 30 PPM 0-10

DISP: Terminal Sacrifice

HISTO: 852300

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Lung	Ovary	Pancreas	Pituitary Gland
Salivary Glands	Skin	Spleen	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	Urinary Bladder
Uterus			

**MISSING**

Parathyroid Gland

**OBSERVATIONS**

Clitoral Gland	Duct	Dilatation	Moderate
Heart		Degeneration	Chronic, Mild
Intestine Large	Rectum	Parasite Metazoan	
Kidney		Nephropathy	Chronic, Minimal
Liver		Basophilic Focus	Moderate
		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Moderate
		Inflammation	Chronic, Multifocal, Mild
		Vacuolization Cytoplasmic	Moderate
Note: HEPATOCLR ADEN TGLs = 2-4			
Lymph Node	Mandibular	Angiectasis	Moderate
Note: ANGIECTASIS TGLs = 1-11			
Mammary Gland		Hyperplasia	Cystic, Marked
Nose	Mucosa	Inflammation	Chronic Active, Moderate
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9021

TRT#: 15

SEX: Female

DAY ON TEST: 732

DOSE: 30 PPM 0-10

DISP: Terminal Sacrifice

HISTO: 852301

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Brain	Esophagus
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Lung
Lymph Node	Nose	Parathyroid Gland	Pituitary Gland
Skin	Spleen	Stomach - Forestomach	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	Uterus

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Moderate
Clitoral Gland	Duct	Dilatation	Moderate
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Mild
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
		Hepatocholangiocarcinoma	
	Bile Duct	Hyperplasia	Mild
	Oval Cell	Hyperplasia	Marked
		Inflammation	Chronic, Multifocal, Mild
	Bile Duct	Metaplasia	Minimal
		Vacuolization Cytoplasmic	Moderate
Note: HEPATOCHOLCARC TGLs = 3-4			
Note: HEPATOCLR ADEN TGLs = 3-4			
Note: METAPLASIA, NOS PANCREATIC ACINAR DIFFERENTIATION			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Moderate
Ovary	Periovarn Tiss	Cyst	
	Rete Ovarii	Hyperplasia	Moderate
Note: CYST TGLs = 1-10			
Pancreas	Acinus	Atrophy	Marked
Salivary Glands		Cytomegaly	Focal, Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:10

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 9021

**TRT#:** 15

**SEX:** Female

**DAY ON TEST:** 732

**DOSE:** 30 PPM 0-10

**DISP:** Terminal Sacrifice

**HISTO:** 852301

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Thyroid Gland

C Cell

Hyperplasia

Mild

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PRIMARY CAUSE OF DEATH

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9022

TRT#: 15

SEX: Female

DAY ON TEST: 733

DOSE: 30 PPM 0-10

DISP: Terminal Sacrifice

HISTO: 852302

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Heart	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lung	Lymph Node	Nose
Ovary	Parathyroid Gland	Pituitary Gland	Salivary Glands
Skin	Spleen	Stomach - Forestomach	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	Uterus

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Cortex	Vacuolization Cytoplasmic	Mild
Clitoral Gland	Duct	Dilatation	Moderate
Kidney		Nephropathy	Chronic, Mild
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Moderate
		Inflammation	Chronic, Multifocal, Mild
		Vacuolization Cytoplasmic	Moderate
Note: HEPATOCLR ADEN TGLs = 1-4			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Mild
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9023

TRT#: 15

SEX: Female

DAY ON TEST: 733

DOSE: 30 PPM 0-10

DISP: Terminal Sacrifice

HISTO: 852303

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Heart	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lymph Node	Nose	Ovary
Parathyroid Gland	Pituitary Gland	Salivary Glands	Skin
Spleen	Stomach - Forestomach	Stomach - Glandular	Trachea
Urinary Bladder			

MISSING

Thymus

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Moderate
	Cortex	Hypertrophy	Mild
Clitoral Gland		Inflammation	Chronic Active, Mild
Kidney		Nephropathy	Chronic, Minimal
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Moderate
		Inflammation	Chronic, Multifocal, Mild
		Vacuolization Cytoplasmic	Moderate
Note: HEPATOCLR ADEN TGLs = 2-12			
Lung	Interstitialium	Inflammation	Chronic Active, Mild
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Moderate
Pancreas	Acinus	Atrophy	Mild
Thyroid Gland	Follicle	Cyst	
	C Cell	Hyperplasia	Mild
Uterus	Endometrium	Hyperplasia	Cystic, Glandular, Moderate
[ Hyperplasia TGLS = 1-13 ]			

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)

**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:10

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 9023

**TRT#:** 15

**SEX:** Female

**DAY ON TEST:** 733

**DOSE:** 30 PPM 0-10

**DISP:** Terminal Sacrifice

**HISTO:** 852303

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9024

TRT#: 15

SEX: Female

DAY ON TEST: 733

DOSE: 30 PPM 0-10

DISP: Terminal Sacrifice

HISTO: 852304

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Lung	Lymph Node	Nose	Ovary
Pancreas	Parathyroid Gland	Pituitary Gland	Salivary Glands
Skin	Spleen	Stomach - Forestomach	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	Uterus

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Moderate
Clitoral Gland	Duct	Dilatation	Moderate
		Inflammation	Chronic Active, Mild
Heart		Degeneration	Chronic, Minimal
Kidney		Nephropathy	Chronic, Mild
Liver		Basophilic Focus	Mild
		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Mild
	Oval Cell	Hyperplasia	Moderate
		Inflammation	Chronic, Multifocal, Mild
		Vacuolization Cytoplasmic	Moderate
Note: HEPATOCLR ADEN TGLs = 1-11			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9025

TRT#: 15

SEX: Female

DAY ON TEST: 659

DOSE: 30 PPM 0-10

DISP: Natural Death

HISTO: 852305

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Brain	Clitoral Gland	Esophagus
Heart	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Jejunum	Islets, Pancreatic	Kidney
Nose	Pancreas	Parathyroid Gland	Salivary Glands
Skin	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder	Uterus	

MISSING

Intestine Small - Ileum

AUTO PRECLUDES DIAG.

Thyroid Gland

OBSERVATIONS

Adrenal Gland	Cortex	Hypertrophy	Mild
	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
Bone Marrow	Femoral	Leukemia Mononuclear	
Liver	Bile Duct	Hyperplasia	Mild
		Hypertrophy	Moderate
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Marked
Note: LEUKEMIA MONUC TGLs = 2-11,3-11,4-11			
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Moderate
Ovary	Periovarn Tiss	Cyst	
Note: CYST TGLs = 5-10			
Pituitary Gland	Pars Distalis	Hyperplasia	Mild
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-12 ]			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)

**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:10

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 9025

**TRT#:** 15

**SEX:** Female

**DAY ON TEST:** 659

**DOSE:** 30 PPM 0-10

**DISP:** Natural Death

**HISTO:** 852305

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Animal Note: CAUSE OF DEATH, LEUKEMIA MONONUCLEAR

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9026

TRT#: 16

SEX: Female

DAY ON TEST: 733

DOSE: 30 PPM 10-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Clitoral Gland	Esophagus	Heart
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Lung
Lymph Node	Nose	Ovary	Parathyroid Gland
Pituitary Gland	Salivary Glands	Skin	Spleen
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder	Uterus		

OBSERVATIONS

Kidney		Nephropathy	Chronic, Mild
Liver		Eosinophilic Focus	Marked
	Bile Duct	Fibrosis	Moderate
	Oval Cell	Hepatocellular Adenoma	Multiple
		Hyperplasia	Moderate
		Vacuolization Cytoplasmic	Mild
Note: HEPATOCLR ADEN TGLs = 1-4			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Mild
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9027

TRT#: 16

SEX: Female

DAY ON TEST: 682

DOSE: 30 PPM 10-10

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Brain	Esophagus
Heart	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Lung	Lymph Node	Nose	Ovary
Pancreas	Parathyroid Gland	Pituitary Gland	Salivary Glands
Skin	Stomach - Forestomach	Stomach - Glandular	Trachea
Urinary Bladder			

MISSING

Clitoral Gland	Thymus
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OBSERVATIONS

Adrenal Gland	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
Kidney		Nephropathy	Chronic, Mild
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Oval Cell	Hyperplasia	Moderate
		Inflammation	Chronic, Multifocal, Mild
Note: HEPATOCLR ADEN TGLs = 1-4			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Fibroadenoma	
		Hyperplasia	Cystic, Moderate
Spleen		Leukemia Mononuclear	
Thyroid Gland	C Cell	Hyperplasia	Mild
Uterus		Leiomyosarcoma	
Note: LEIOMYOSAR TGLs = 2-11			
Vagina		Leiomyosarcoma	
Note: LEIOMYOSAR TGLs = 3-12			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:10

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 9027

**TRT#:** 16

**SEX:** Female

**DAY ON TEST:** 682

**DOSE:** 30 PPM 10-10

**DISP:** Moribund Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Animal Note: MORIBUND SAC. DUE TO VAGINAL TUMOR AND PROLAPSE

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9028

TRT#: 16

SEX: Female

DAY ON TEST: 716

DOSE: 30 PPM 10-10

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Brain
Esophagus	Heart	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lung	Nose	Ovary
Parathyroid Gland	Salivary Glands	Skin	Spleen
Stomach - Glandular	Trachea	Urinary Bladder	Uterus

MISSING

Thymus

AUTO PRECLUDES DIAG.

Bone Marrow

OBSERVATIONS

Clitoral Gland	Duct	Dilatation	Moderate
Kidney		Nephropathy	Chronic, Mild
Liver		Basophilic Focus	Moderate
		Eosinophilic Focus	Marked
	Bile Duct	Fibrosis	Moderate
		Hepatocellular Adenoma	Multiple
	Oval Cell	Hyperplasia	Marked
		Inflammation	Chronic, Multifocal, Mild
		Vacuolization Cytoplasmic	Moderate
Note: HEPATOCLR ADEN TGLs = 1-4,2-4,3-4			
Lymph Node	Mandibular	Infiltration Cellular	Plasma Cell, Moderate
Mammary Gland		Hyperplasia	Cystic, Moderate
Pancreas	Acinus	Atrophy	Minimal
Pituitary Gland	Pars Distalis	Hyperplasia	Moderate
Stomach	Forestomach	Acanthosis	Mild
	Forestomach	Inflammation	Chronic Active, Moderate
	Forestomach	Ulcer	Moderate
Thyroid Gland	C Cell	Hyperplasia	Moderate

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:10

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 9028

**TRT#:** 16

**SEX:** Female

**DAY ON TEST:** 716

**DOSE:** 30 PPM 10-10

**DISP:** Moribund Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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PRIMARY CAUSE OF DEATH

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Animal Note: MORIBUND SACRIFICE DUE TO LIVER TUMORS

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\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9029

TRT#: 16

SEX: Female

DAY ON TEST: 684

DOSE: 30 PPM 10-10

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Heart	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lung	Lymph Node	Nose
Ovary	Parathyroid Gland	Pituitary Gland	Salivary Glands
Skin	Spleen	Stomach - Forestomach	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	Uterus

OBSERVATIONS

Adrenal Gland	Cortex	Vacuolization Cytoplasmic	Mild
Clitoral Gland	Duct	Dilatation	Moderate
Kidney		Nephropathy	Chronic, Mild
Liver		Basophilic Focus	Moderate
	Bile Duct	Cyst	
		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
		Hepatocellular Carcinoma	
	Oval Cell	Hyperplasia	Moderate
		Inflammation	Chronic, Multifocal, Mild
		Necrosis	Moderate
Note: CYST	TGLs = 1-4		
Note: HEPATOCLR CARC	TGLs = 2-4		
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Marked
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO LIVER LESIONS

Animal Note: TGL3-2,3-3, MOTTLED LUNG NOT APPARENT ON MICRO

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9030

TRT#: 16

SEX: Female

DAY ON TEST: 733

DOSE: 30 PPM 10-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Clitoral Gland	Esophagus	Heart	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Lung	Lymph Node
Nose	Ovary	Parathyroid Gland	Salivary Glands
Skin	Spleen	Stomach - Forestomach	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Cortex	Hypertrophy	Mild
	Cortex	Vacuolization Cytoplasmic	Moderate
Eye	Retina	Atrophy	Marked
	Lens	Cataract	Moderate
Note: CATARACT	TGLs = 1-11		
Kidney		Nephropathy	Chronic, Minimal
Liver		Basophilic Focus	Mild
		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Oval Cell	Hyperplasia	Moderate
		Hypertrophy	Moderate
		Inflammation	Chronic, Multifocal, Mild
		Necrosis	Mild
		Vacuolization Cytoplasmic	Mild
Note: HEPATOCLR ADEN	TGLs = 2-4,3-12,4-12,5-13		
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Mild
Pituitary Gland	Pars Distalis	Hyperplasia	Mild
Thyroid Gland	C Cell	Hyperplasia	Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:10

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 9030

**TRT#:** 16

**SEX:** Female

**DAY ON TEST:** 733

**DOSE:** 30 PPM 10-10

**DISP:** Terminal Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Uterus  
PRIMARY CAUSE OF DEATH

Endometrium

Hyperplasia

Cystic, Glandular, Mild

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-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9031

TRT#: 15

SEX: Female

DAY ON TEST: 736

DOSE: 30 PPM 0-10

DISP: Terminal Sacrifice

HISTO: 852311

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Heart	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lung	Lymph Node	Nose
Ovary	Pancreas	Parathyroid Gland	Pituitary Gland
Salivary Glands	Skin	Spleen	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	Urinary Bladder

**OBSERVATIONS**

Adrenal Gland	Cortex	Hyperplasia	Mild
Clitoral Gland		Inflammation	Chronic Active, Mild
Kidney		Nephropathy	Chronic, Mild
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Moderate
		Inflammation	Chronic, Multifocal, Mild
		Vacuolization Cytoplasmic	Moderate
Note: HEPATOCLR ADEN TGLs = 1-4,2-4			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Thyroid Gland	C Cell	Hyperplasia	Mild
Uterus		Polyp Stromal	

PRIMARY CAUSE OF DEATH

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9032

TRT#: 15

SEX: Female

DAY ON TEST: 736

DOSE: 30 PPM 0-10

DISP: Terminal Sacrifice

HISTO: 852312

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Clitoral Gland	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lung	Nose	Ovary
Pancreas	Parathyroid Gland	Salivary Glands	Skin
Stomach - Forestomach	Stomach - Glandular	Trachea	Urinary Bladder
Uterus			

MISSING

Thymus

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Cortex	Vacuolization Cytoplasmic	Mild
Heart		Degeneration	Chronic, Minimal
Kidney		Nephropathy	Chronic, Minimal
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Moderate
		Inflammation	Chronic, Multifocal, Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Note: HEPATOCLR ADEN TGLs = 1-11,2-4,3-4			
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Moderate
Pituitary Gland	Pars Distalis	Hyperplasia	Mild
Spleen		Leukemia Mononuclear	
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9033

TRT#: 15

SEX: Female

DAY ON TEST: 728

DOSE: 30 PPM 0-10

DISP: Natural Death

HISTO: 852313

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Esophagus	Heart	Intestine Small - Duodenum
Islets, Pancreatic	Kidney	Nose	Ovary
Parathyroid Gland	Salivary Glands	Skin	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	Urinary Bladder
Uterus			

AUTO PRECLUDES DIAG.

Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Ileum
Intestine Small - Jejunum	Thyroid Gland		

OBSERVATIONS

Clitoral Gland		Inflammation	Chronic Active, Mild
Liver		Eosinophilic Focus	Marked
	Bile Duct	Fibrosis	Mild
		Hepatocellular Adenoma	
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Moderate
		Inflammation	Chronic, Multifocal, Mild
		Vacuolization Cytoplasmic	Mild
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Moderate
Pancreas	Acinus	Atrophy	Mild
Pituitary Gland	Pars Distalis	Hyperplasia	Moderate
Note: HYPERPLASIA TGLs = 1-7			
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 2-11,3-11 ]			

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL5-6, STOMACH LESION IS DUE TO POST MORTEM CHANGE

Animal Note: CAUSE OF DEATH, LEUKEMIA MONONUCLEAR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9034

TRT#: 15

SEX: Female

DAY ON TEST: 736

DOSE: 30 PPM 0-10

DISP: Terminal Sacrifice

HISTO: 852314

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Heart	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lung	Nose	Pancreas
Parathyroid Gland	Salivary Glands	Skin	Stomach - Forestomach
Stomach - Glandular	Trachea	Urinary Bladder	Uterus

MISSING

Thymus

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
Clitoral Gland	Duct	Dilatation	Moderate
Kidney		Nephropathy	Chronic, Moderate
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Moderate
		Hypertrophy	Moderate
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Moderate
Note: HEPATOCLR ADEN TGLs = 2-4			
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Moderate
Ovary	Periovarn Tiss	Cyst	
Note: CYST TGLs = 1-10			
Pituitary Gland	Pars Distalis	Adenoma	
Note: ADENOMA TGLs = 3-7			
Spleen		Leukemia Mononuclear	
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9035

TRT#: 15

SEX: Female

DAY ON TEST: 737

DOSE: 30 PPM 0-10

DISP: Terminal Sacrifice

HISTO: 852315

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Esophagus	Heart	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Lymph Node - Mesenteric	Lymph Node - Thoracic
Nose	Ovary	Pancreas	Parathyroid Gland
Skin	Spleen	Stomach - Forestomach	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	

MISSING

Lung

OBSERVATIONS

Clitoral Gland	Duct	Dilatation	Moderate
Note: DILATATION	TGLs = 1-10		
Kidney		Nephropathy	Chronic, Mild
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Mild
	Oval Cell	Hyperplasia	Moderate
		Inflammation	Chronic, Multifocal, Mild
		Vacuolization Cytoplasmic	Moderate
Note: HEPATOCLR ADEN	TGLs = 2-4,3-11		
Mammary Gland		Hyperplasia	Cystic, Moderate
Pituitary Gland	Pars Distalis	Hyperplasia	Mild
Salivary Glands	Acinus	Atrophy	Mild
Thyroid Gland	C Cell	Hyperplasia	Moderate
Uterus	Endometrium	Hyperplasia	Cystic, Glandular, Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9036

TRT#: 15

SEX: Female

DAY ON TEST: 614

DOSE: 30 PPM 0-10

DISP: Moribund Sacrifice

HISTO: 852316

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Esophagus	Heart	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Kidney	Nose
Ovary	Parathyroid Gland	Pituitary Gland	Salivary Glands
Skin	Stomach - Forestomach	Stomach - Glandular	Trachea
Urinary Bladder	Uterus		

MISSING

Clitoral Gland

OBSERVATIONS

Liver		Eosinophilic Focus	Marked
		Hepatocellular Carcinoma	
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Moderate
		Hypertrophy	Marked
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Marked
Note: LEUKEMIA MONUC TGLs = 2-4,2-12 [ Hyperplasia TGLS = 3-12 ]			
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Moderate
Pancreas	Acinus	Atrophy	Marked
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-11 ]			
Thymus		Leukemia Mononuclear	
Thyroid Gland	C Cell	Adenoma	

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO LIVER TUMORS AND LEUKEMIA

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9037

TRT#: 15

SEX: Female

DAY ON TEST: 737

DOSE: 30 PPM 0-10

DISP: Terminal Sacrifice

HISTO: 852317

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Heart	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lymph Node	Nose	Ovary
Parathyroid Gland	Pituitary Gland	Salivary Glands	Skin
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder			

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
Clitoral Gland		Inflammation	Chronic Active, Mild
Kidney		Nephropathy	Chronic, Mild
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Mild
	Oval Cell	Hyperplasia	Moderate
		Inflammation	Chronic, Multifocal, Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Note: HEPATOCLR ADEN TGLs = 1-4,2-4			
Lung	Alveolar Epith	Hyperplasia	Moderate
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Moderate
Pancreas	Acinus	Atrophy	Marked
Spleen		Leukemia Mononuclear	
Thyroid Gland	C Cell	Hyperplasia	Mild
Uterus	Endometrium	Hyperplasia	Cystic, Glandular, Moderate

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9038

TRT#: 15

SEX: Female

DAY ON TEST: 642

DOSE: 30 PPM 0-10

DISP: Moribund Sacrifice

HISTO: 852318

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Esophagus	Heart	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Lung	Lymph Node
Parathyroid Gland	Salivary Glands	Skin	Spleen
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder	Uterus		

OBSERVATIONS

Clitoral Gland		Inflammation	Chronic Active, Mild
Kidney		Nephropathy	Chronic, Minimal
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Mild
	Oval Cell	Hyperplasia	Moderate
		Hypertrophy	Mild
		Vacuolization Cytoplasmic	Moderate
Note: HEPATOCLR ADEN TGLs = 2-4,3-11			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Moderate
Nose	Mucosa	Inflammation	Chronic Active, Mild
Ovary	Periovarn Tiss	Cyst	
Note: CYST TGLs = 1-10			
Pancreas	Acinus	Atrophy	Mild
Pituitary Gland	Pars Distalis	Hyperplasia	Mild
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO LIVER TUMORS

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9039

TRT#: 15

SEX: Female

DAY ON TEST: 684

DOSE: 30 PPM 0-10

DISP: Moribund Sacrifice

HISTO: 852319

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Parathyroid Gland	Pituitary Gland	Salivary Glands	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	Uterus

OBSERVATIONS

Adrenal Gland	Cortex	Vacuolization Cytoplasmic	Mild
Clitoral Gland		Inflammation	Chronic Active, Mild
Heart		Degeneration	Chronic, Moderate
Kidney		Nephropathy	Chronic, Minimal
Liver		Basophilic Focus	Mild
		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Mild
	Oval Cell	Hyperplasia	Moderate
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Note: HEPATOCLR ADEN TGLs = 7-4			
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
	Mediastinal	Leukemia Mononuclear	
	Mesenteric	Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 2-12,3-2,6-14			
Mammary Gland		Hyperplasia	Cystic, Moderate
Nose	Mucosa	Inflammation	Chronic Active, Mild
Ovary	Periovarn Tiss	Cyst	
Note: CYST TGLs = 5-10			
Pancreas	Perivascular	Inflammation	Chronic Active, Mild
Skin		Acanthosis	Moderate
	Subcut Tiss	Inflammation	Chronic Active, Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:10

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 9039

**TRT#:** 15

**SEX:** Female

**DAY ON TEST:** 684

**DOSE:** 30 PPM 0-10

**DISP:** Moribund Sacrifice

**HISTO:** 852319

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Note: ACANTHOSIS TGLs = 1-11

Spleen

Leukemia Mononuclear

Note: LEUKEMIA MONUC TGLs = 4-13

Stomach

Forestomach

Inflammation

Chronic Active, Mild

Forestomach

Ulcer

Moderate

Note: ULCER TGLs = 8-15

Thyroid Gland

C Cell

Hyperplasia

Moderate

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**PRIMARY CAUSE OF DEATH**

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Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9040

TRT#: 15

SEX: Female

DAY ON TEST: 516

DOSE: 30 PPM 0-10

DISP: Moribund Sacrifice

HISTO: 852320

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Brain	Esophagus
Heart	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Mammary Gland
Nose	Pancreas	Parathyroid Gland	Pituitary Gland
Salivary Glands	Skin	Stomach - Glandular	Trachea
Urinary Bladder	Uterus		

MISSING

Intestine Large - Cecum	Stomach - Forestomach
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OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
Clitoral Gland	Duct	Dilatation	Moderate
		Inflammation	Chronic Active, Mild
Kidney		Leukemia Mononuclear	
Liver		Eosinophilic Focus	Minimal
	Bile Duct	Hyperplasia	Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Note: LEUKEMIA MONUC TGLs = 3-4			
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
	Mediastinal	Leukemia Mononuclear	
	Mesenteric	Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 2-13			
Ovary	Periovarn Tiss	Cyst	
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-11 ]			
Thymus		Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 4-12			

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:10

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 9040

**TRT#:** 15

**SEX:** Female

**DAY ON TEST:** 516

**DOSE:** 30 PPM 0-10

**DISP:** Moribund Sacrifice

**HISTO:** 852320

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

Thyroid Gland

C Cell

Hyperplasia

Mild

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**PRIMARY CAUSE OF DEATH**

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Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9041

TRT#: 15

SEX: Female

DAY ON TEST: 737

DOSE: 30 PPM 0-10

DISP: Terminal Sacrifice

HISTO: 852321

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Lung
Lymph Node	Nose	Pancreas	Parathyroid Gland
Salivary Glands	Skin	Stomach - Forestomach	Stomach - Glandular
Trachea	Urinary Bladder		

MISSING

Thymus

OBSERVATIONS

Adrenal Gland	Cortex	Vacuolization Cytoplasmic	Mild
Clitoral Gland	Duct	Dilatation	Moderate
Heart		Degeneration	Chronic, Mild
Intestine Large	Rectum	Parasite Metazoan	
Kidney		Nephropathy	Chronic, Minimal
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Mild
	Oval Cell	Hyperplasia	Moderate
		Inflammation	Chronic, Multifocal, Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Note: HEPATOCLR ADEN TGLs = 2-11,3-11			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Ovary	Periovarn Tiss	Cyst	
Note: CYST TGLs = 1-12			
Pituitary Gland	Pars Distalis	Hyperplasia	Mild
Spleen		Leukemia Mononuclear	
Thyroid Gland	C Cell	Hyperplasia	Mild

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:10

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 9041

**TRT#:** 15

**SEX:** Female

**DAY ON TEST:** 737

**DOSE:** 30 PPM 0-10

**DISP:** Terminal Sacrifice

**HISTO:** 852321

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Uterus

Endometrium

Hyperplasia

Cystic, Glandular, Mild

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PRIMARY CAUSE OF DEATH

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9042

TRT#: 15

SEX: Female

DAY ON TEST: 737

DOSE: 30 PPM 0-10

DISP: Terminal Sacrifice

HISTO: 852322

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Heart	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Kidney	Lung	Lymph Node
Nose	Ovary	Pancreas	Parathyroid Gland
Pituitary Gland	Salivary Glands	Skin	Spleen
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder			

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Moderate
	Cortex	Vacuolization Cytoplasmic	Moderate
Clitoral Gland	Duct	Dilatation	Moderate
		Inflammation	Chronic Active, Mild
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Moderate
		Inflammation	Chronic, Multifocal, Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Note: HEPATOCLR ADEN TGLs = 2-4,3-4			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Moderate
Thyroid Gland	C Cell	Hyperplasia	Mild
Uterus		Polyp Stromal	
Note: POLYP STROMAL TGLs = 1-11			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9043

TRT#: 15

SEX: Female

DAY ON TEST: 704

DOSE: 30 PPM 0-10

DISP: Natural Death

HISTO: 852323

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Heart	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Kidney	Nose	Ovary
Pancreas	Parathyroid Gland	Pituitary Gland	Salivary Glands
Skin	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder	Uterus	

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Cortex	Hypertrophy	Mild
Clitoral Gland	Duct	Dilatation	Moderate
		Inflammation	Chronic Active, Mild
Liver		Eosinophilic Focus	Marked
	Bile Duct	Fibrosis	Mild
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Marked
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Moderate
Note: HEPATOCLR ADEN	TGLs = 3-12,3-13		
Note: LEUKEMIA MONUC	TGLs = 2-12,2-13		
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Moderate
Spleen		Leukemia Mononuclear	
	[ Leukemia Mononuclear TGLS = 1-11 ]		
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: CAUSE OF DEATH, LEUKEMIA AND LIVER LESIONS

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9044

TRT#: 15

SEX: Female

DAY ON TEST: 491

DOSE: 30 PPM 0-10

DISP: Moribund Sacrifice

HISTO: 852324

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Heart	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Kidney	Nose	Ovary
Pancreas	Parathyroid Gland	Pituitary Gland	Salivary Glands
Skin	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder	Uterus	

**MISSING**

Clitoral Gland

**OBSERVATIONS**

Adrenal Gland	Cortex	Vacuolization Cytoplasmic	Mild
Liver		Eosinophilic Focus	Mild
	Bile Duct	Hyperplasia	Mild
	Oval Cell	Hyperplasia	Moderate
		Inflammation	Chronic, Multifocal, Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Moderate
Lung	Alveolar Epith	Hyperplasia	Minimal
		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Moderate
Spleen		Leukemia Mononuclear	
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9045

TRT#: 15

SEX: Female

DAY ON TEST: 738

DOSE: 30 PPM 0-10

DISP: Terminal Sacrifice

HISTO: 852325

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Esophagus	Heart	Intestine Large - Cecum
Intestine Large - Colon	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Nose	Ovary	Parathyroid Gland
Pituitary Gland	Salivary Glands	Skin	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	Urinary Bladder

OBSERVATIONS

Clitoral Gland	Duct	Dilatation	Moderate
Note: DILATATION TGLs = 4-10			
Intestine Large	Rectum	Parasite Metazoan	
Kidney		Nephropathy	Chronic, Mild
Liver		Eosinophilic Focus	Moderate
	Bile Duct	Hepatocellular Adenoma	Multiple
	Oval Cell	Hyperplasia	Mild
		Hyperplasia	Moderate
		Inflammation	Chronic Active, Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Note: HEPATOCLR ADEN TGLs = 2-12,3-4			
Lung		Inflammation	Granulomatous, Focal, Mild
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Mild
Spleen		Leukemia Mononuclear	
Thyroid Gland	C Cell	Hyperplasia	Mild
Uterus		Polyp Stromal	
Note: POLYP STROMAL TGLs = 1-11			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9046

TRT#: 15

SEX: Female

DAY ON TEST: 738

DOSE: 30 PPM 0-10

DISP: Terminal Sacrifice

HISTO: 852326

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Lung	Lymph Node	Nose	Pancreas
Parathyroid Gland	Pituitary Gland	Salivary Glands	Skin
Spleen	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder		

OBSERVATIONS

Adrenal Gland	Bilateral, Cortex Cortex	Adenoma Vacuolization Cytoplasmic Inflammation Degeneration	Moderate Chronic Active, Mild Chronic, Mild
Clitoral Gland		Nephropathy	Chronic, Mild
Heart		Eosinophilic Focus	Marked
Kidney		Hepatocellular Adenoma Hepatocellular Carcinoma	Multiple
Liver	Bile Duct Oval Cell	Hyperplasia Hyperplasia Inflammation Vacuolization Cytoplasmic	Moderate Moderate Chronic, Multifocal, Mild Moderate
Note: HEPATOCLR ADEN TGLs = 3-4,3-12			
Note: HEPATOCLR CARC TGLs = 4-12			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Moderate
Ovary	Follicle	Cyst	
Note: CYST TGLs = 5-11			
Thyroid Gland	C Cell	Hyperplasia	Moderate
Uterus	Endometrium	Hyperplasia	Cystic, Glandular, Moderate

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)

**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:10

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 9046

**TRT#:** 15

**SEX:** Female

**DAY ON TEST:** 738

**DOSE:** 30 PPM 0-10

**DISP:** Terminal Sacrifice

**HISTO:** 852326

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Animal Note: TGL2-7, PITUITARY FOCUS NOT APPARENT ON MICRO

Animal Note: TGL1-2, 1 MM LUNG FOCUS NOT APPARENT ON MICRO

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9047

TRT#: 15

SEX: Female

DAY ON TEST: 659

DOSE: 30 PPM 0-10

DISP: Natural Death

HISTO: 852327

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Brain
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Kidney	Nose	Ovary	Parathyroid Gland
Pituitary Gland	Salivary Glands	Skin	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	Uterus

OBSERVATIONS

Bone Marrow	Femoral	Leukemia Mononuclear	
Clitoral Gland		Inflammation	Chronic Active, Mild
Heart		Degeneration	Chronic, Mild
Liver		Eosinophilic Focus	Moderate
	Bile Duct	Hepatocellular Adenoma	Multiple
	Oval Cell	Hyperplasia	Moderate
		Hyperplasia	Marked
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Moderate
Note: LEUKEMIA MONUC TGLs = 2-4,2-12,2-13 [ Vacuolization Cytoplasmic TGLS = 4-4,4-12,4-13 ]			
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Marked
Pancreas	Acinus	Atrophy	Mild
Spleen		Leukemia Mononuclear	
Note: LEUKEMIA MONUC TGLs = 1-11			
Stomach	Forestomach	Squamous Cell Papilloma	
Note: PAPILLOMA SQUA TGLs = 5-14			
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: CAUSE OF DEATH, LEUKEMIA MONONUCLEAR

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9048

TRT#: 15

SEX: Female

DAY ON TEST: 632

DOSE: 30 PPM 0-10

DISP: Moribund Sacrifice

HISTO: 852328

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Esophagus	Heart	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Lung	Lymph Node
Nose	Ovary	Parathyroid Gland	Pituitary Gland
Salivary Glands	Skin	Spleen	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	Urinary Bladder
Uterus			

OBSERVATIONS

Clitoral Gland	Duct	Dilatation	Moderate
Note: DILATATION	TGLs = 4-10		
Kidney		Nephropathy	Chronic, Mild
Liver	Bile Duct	Basophilic Focus	Moderate
		Cyst	Moderate
		Eosinophilic Focus	Marked
	Bile Duct	Hepatocellular Adenoma	Multiple
		Hyperplasia	Mild
	Oval Cell	Hyperplasia	Moderate
		Hypertrophy	Moderate
		Inflammation	Chronic, Multifocal, Mild
		Vacuolization Cytoplasmic	Moderate
Note: HEPATOCLR ADEN	TGLs = 2-4,3-4		
Note: CYST	TGLs = 1-11		
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Moderate
Pancreas	Acinus	Atrophy	Mild
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO LIVER LESIONS

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:10

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 9048

**TRT#:** 15

**DOSE:** 30 PPM 0-10

**SEX:** Female

**DISP:** Moribund Sacrifice

**DAY ON TEST:** 632

**HISTO:** 852328

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9049

TRT#: 15

SEX: Female

DAY ON TEST: 730

DOSE: 30 PPM 0-10

DISP: Natural Death

HISTO: 852329

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Kidney	Nose	Ovary
Pituitary Gland	Salivary Glands	Skin	Stomach - Forestomach
Stomach - Glandular	Thymus	Thyroid Gland	Trachea
Urinary Bladder	Uterus		

MISSING

Mammary Gland	Parathyroid Gland
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OBSERVATIONS

Clitoral Gland		Inflammation	Chronic Active, Moderate
Heart		Degeneration	Chronic, Mild
	Myocardium	Inflammation	Chronic Active, Moderate
Liver		Eosinophilic Focus	Moderate
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hepatocellular Carcinoma	
	Oval Cell	Hyperplasia	Mild
		Hyperplasia	Moderate
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Note: HEPATOCLR ADEN	TGLs = 4-12,5-4		
Note: HEPATOCLR CARC	TGLs = 3-13		
Lung		Hepatocellular Carcinoma	Metastatic (Liver)
		Leukemia Mononuclear	
Lymph Node	Mediastinal	Angiectasis	Marked
	Mesenteric	Angiectasis	Moderate
Note: ANGIECTASIS	TGLs = 2-11		
Note: ANGIECTASIS	TGLs = 6-14		
Pancreas	Acinus	Atrophy	Mild
Spleen		Leukemia Mononuclear	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:10

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 9049

**TRT#:** 15

**SEX:** Female

**DAY ON TEST:** 730

**DOSE:** 30 PPM 0-10

**DISP:** Natural Death

**HISTO:** 852329

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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PRIMARY CAUSE OF DEATH

-

Animal Note: TGL2-11, LESION IS IN MEDIASTINAL LN, NOT THYMUS

Animal Note: CAUSE OF DEATH, LIVER TUMORS AND MYOCARDITIS

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9050

TRT#: 15

SEX: Female

DAY ON TEST: 579

DOSE: 30 PPM 0-10

DISP: Moribund Sacrifice

HISTO: 852330

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Clitoral Gland	Esophagus	Heart
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Lymph Node
Nose	Pancreas	Parathyroid Gland	Pituitary Gland
Salivary Glands	Skin	Stomach - Forestomach	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	Uterus

OBSERVATIONS

Kidney		Nephropathy	Chronic, Minimal
Liver		Eosinophilic Focus	Marked
	Bile Duct	Hyperplasia	Mild
	Oval Cell	Hyperplasia	Moderate
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Moderate
Note: LEUKEMIA MONUC TGLs = 3-4			
Lung		Leukemia Mononuclear	
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Ovary	Periovarn Tiss	Cyst	
Note: CYST TGLs = 2-10			
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-11 ]			
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9051

TRT#: 16

SEX: Female

DAY ON TEST: 729

DOSE: 30 PPM 10-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Heart	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lung	Lymph Node	Nose
Ovary	Pancreas	Parathyroid Gland	Salivary Glands
Skin	Spleen	Stomach - Forestomach	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	Uterus

OBSERVATIONS

Adrenal Gland	Cortex	Vacuolization Cytoplasmic	Mild
Clitoral Gland	Duct	Dilatation	Moderate
Note: DILATATION TGLs = 1-10			
Kidney		Nephropathy	Chronic, Minimal
Liver		Basophilic Focus	Moderate
		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Oval Cell	Hyperplasia	Moderate
		Inflammation	Chronic, Multifocal, Mild
		Vacuolization Cytoplasmic	Mild
Note: HEPATOCLR ADEN TGLs = 2-11			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Pituitary Gland	Pars Distalis	Hyperplasia	Mild
Thyroid Gland	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9052

TRT#: 16

SEX: Female

DAY ON TEST: 729

DOSE: 30 PPM 10-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Heart	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Kidney	Lung	Lymph Node
Nose	Ovary	Pancreas	Parathyroid Gland
Skin	Spleen	Stomach - Forestomach	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
Clitoral Gland		Inflammation	Chronic Active, Mild
Liver		Basophilic Focus	Marked
		Eosinophilic Focus	Marked
	Bile Duct	Fibrosis	Mild
		Hepatocellular Adenoma	Multiple
	Oval Cell	Hyperplasia	Moderate
		Inflammation	Chronic, Multifocal, Mild
		Vacuolization Cytoplasmic	Moderate
[ Vacuolization Cytoplasmic TGLS = 2-4,2-11 ]			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Pituitary Gland	Pars Distalis	Hyperplasia	Moderate
Salivary Glands	Acinus	Atrophy	Mild
Thyroid Gland	C Cell	Hyperplasia	Mild
Uterus		Polyp Stromal	
Note: POLYP STROMAL TGLs = 1-10			

PRIMARY CAUSE OF DEATH -

Animal Note: TGL3-12, GLANDULAR STOMACH, LYMPHOID PATCH, NSL

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9053

TRT#: 16

SEX: Female

DAY ON TEST: 577

DOSE: 30 PPM 10-10

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Heart	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lymph Node	Nose	Ovary
Parathyroid Gland	Pituitary Gland	Salivary Glands	Skin
Stomach - Glandular	Thymus	Trachea	Urinary Bladder
Uterus			

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Cortex	Vacuolization Cytoplasmic	Mild
Clitoral Gland		Inflammation	Chronic Active, Mild
Kidney		Nephropathy	Chronic, Minimal
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Oval Cell	Hyperplasia	Marked
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Marked
Note: LEUKEMIA MONUC	TGLs = 2-4		
Note: HEPATOCLR ADEN	TGLs = 3-4,4-4		
Lung		Leukemia Mononuclear	
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Mild
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-11 ]			
Stomach	Forestomach	Acanthosis	Mild
	Forestomach	Inflammation	Chronic Active, Mild
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)

**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:10

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 9053

**TRT#:** 16

**SEX:** Female

**DAY ON TEST:** 577

**DOSE:** 30 PPM 10-10

**DISP:** Moribund Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9054

TRT#: 16

SEX: Female

DAY ON TEST: 729

DOSE: 30 PPM 10-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Heart	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lung	Lymph Node	Nose
Ovary	Parathyroid Gland	Salivary Glands	Skin
Spleen	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder		

OBSERVATIONS

Adrenal Gland	Cortex	Vacuolization Cytoplasmic	Mild
Clitoral Gland	Duct	Dilatation	Moderate
Kidney		Nephropathy	Chronic, Mild
Liver		Basophilic Focus	Mild
		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
		Hepatocellular Carcinoma	
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Marked
		Inflammation	Chronic, Multifocal, Mild
		Vacuolization Cytoplasmic	Marked
Note: HEPATOCLR ADEN TGLs = 2-4,2-12			
Note: HEPATOCLR CARC TGLs = 2-12			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Moderate
Pancreas	Acinus	Atrophy	Moderate
Pituitary Gland	Pars Distalis	Hyperplasia	Mild
Note: HYPERPLASIA TGLs = 1-7			
Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Mild
Uterus	Cervix	Cyst	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:10

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 9054

**TRT#:** 16

**SEX:** Female

**DAY ON TEST:** 729

**DOSE:** 30 PPM 10-10

**DISP:** Terminal Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Note: CYST      TGLs = 3-11

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**PRIMARY CAUSE OF DEATH**      -

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9055

TRT#: 16

SEX: Female

DAY ON TEST: 729

DOSE: 30 PPM 10-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Heart	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lung	Lymph Node	Nose
Ovary	Pancreas	Parathyroid Gland	Salivary Glands
Skin	Spleen	Stomach - Forestomach	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	Uterus

OBSERVATIONS

Adrenal Gland	Cortex	Hypertrophy	Mild
Clitoral Gland	Duct	Dilatation	Moderate
Kidney		Nephropathy	Chronic, Mild
Liver		Basophilic Focus	Moderate
		Eosinophilic Focus	Marked
	Bile Duct	Fibrosis	Mild
		Hepatocellular Adenoma	Multiple
	Oval Cell	Hyperplasia	Moderate
		Inflammation	Chronic, Multifocal, Mild
Note: HEPATOCLR ADEN TGLs = 1-4,2-4			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Pituitary Gland	Pars Distalis	Adenoma	
Note: ADENOMA TGLs = 3-7			
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9056

TRT#: 16

SEX: Female

DAY ON TEST: 706

DOSE: 30 PPM 10-10

DISP: Natural Death

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Brain	Esophagus
Heart	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Nose	Pancreas	Parathyroid Gland	Pituitary Gland
Salivary Glands	Skin	Stomach - Forestomach	Stomach - Glandular
Trachea	Urinary Bladder	Uterus	

MISSING

Thymus

AUTO PRECLUDES DIAG.

Thyroid Gland

OBSERVATIONS

Adrenal Gland	Cortex	Hypertrophy	Mild
Bone Marrow	Femoral	Leukemia Mononuclear	
Clitoral Gland		Inflammation	Chronic Active, Mild
Kidney		Leukemia Mononuclear	
Liver		Eosinophilic Focus	Moderate
		Hepatocellular Carcinoma	
		Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 3-4		
Note: HEPATOCLR CARC	TGLs = 4-12		
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
	Mediastinal	Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 1-11		
Mammary Gland		Hyperplasia	Cystic, Moderate
Ovary		Leukemia Mononuclear	
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 2-1 ]			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)

**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:10

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 9056

**TRT#:** 16

**SEX:** Female

**DAY ON TEST:** 706

**DOSE:** 30 PPM 10-10

**DISP:** Natural Death

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Animal Note: CAUSE OF DEATH LEUKEMIA MONONUCLEAR

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9057

TRT#: 16

SEX: Female

DAY ON TEST: 730

DOSE: 30 PPM 10-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Esophagus	Heart	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Lung	Lymph Node
Nose	Ovary	Parathyroid Gland	Salivary Glands
Skin	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder		

OBSERVATIONS

Clitoral Gland	Duct	Dilatation	Moderate
		Inflammation	Chronic Active, Mild
Kidney		Nephropathy	Chronic, Mild
Liver		Basophilic Focus	
		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
		Hepatocellular Carcinoma	
	Oval Cell	Hyperplasia	Moderate
		Hypertrophy	Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Moderate
Note: HEPATOCLR ADEN TGLs = 2-4,2-11,2-12 [ Basophilic Focus TGLS = 2-12 ]			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Moderate
Pituitary Gland	Pars Distalis	Hyperplasia	Moderate
Spleen		Leukemia Mononuclear	
Thyroid Gland	C Cell	Hyperplasia	Mild
Uterus		Polyp Stromal	
Note: POLYP STROMAL TGLs = 1-10			

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)

**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:10

**First Dose M/F:** NA / NA

**Lab:** BAT

---

**ANIMAL ID:** 9057

**TRT#:** 16

**SEX:** Female

**DAY ON TEST:** 730

**DOSE:** 30 PPM 10-10

**DISP:** Terminal Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9058

TRT#: 16

SEX: Female

DAY ON TEST: 730

DOSE: 30 PPM 10-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Clitoral Gland	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lung	Lymph Node	Nose
Pancreas	Parathyroid Gland	Pituitary Gland	Salivary Glands
Skin	Spleen	Stomach - Forestomach	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	Uterus

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Cortex	Vacuolization Cytoplasmic	Mild
Eye	Retina	Atrophy	Marked
	Lens	Cataract	Moderate
Note: CATARACT	TGLs = 3-11		
Note: ATROPHY	TGLs = 3-11		
Heart		Degeneration	Chronic, Minimal
Kidney		Nephropathy	Chronic, Minimal
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Oval Cell	Hyperplasia	Moderate
		Inflammation	Chronic, Multifocal, Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Moderate
Note: HEPATOCLR ADEN	TGLs = 2-4		
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Ovary	Periovarn Tiss	Cyst	
Note: CYST	TGLs = 1-12		
Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:10

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 9058

**TRT#:** 16

**SEX:** Female

**DAY ON TEST:** 730

**DOSE:** 30 PPM 10-10

**DISP:** Terminal Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

PRIMARY CAUSE OF DEATH

-

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Animal Note: TGL4-13, GLANDULAR STOMACH, LYMPHOID PATCH, NSL

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9059

TRT#: 16

SEX: Female

DAY ON TEST: 730

DOSE: 30 PPM 10-10

DISP: Terminal Sacrifice

HISTO:

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Lung	Lymph Node	Mammary Gland	Nose
Ovary	Pancreas	Parathyroid Gland	Pituitary Gland
Salivary Glands	Skin	Spleen	Stomach - Forestomach
Stomach - Glandular	Trachea	Urinary Bladder	

**MISSING**

Thymus

**OBSERVATIONS**

Adrenal Gland	Cortex	Hyperplasia	Mild
	Cortex	Vacuolization Cytoplasmic	Mild
Clitoral Gland		Inflammation	Chronic Active, Mild
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Minimal
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Oval Cell	Hyperplasia	Moderate
		Inflammation	Chronic, Multifocal, Mild
		Vacuolization Cytoplasmic	Mild
Note: HEPATOCLR ADEN TGLs = 1-4			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Thyroid Gland	C Cell	Hyperplasia	Mild
Uterus	Endometrium	Hyperplasia	Cystic, Glandular, Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9060

TRT#: 16

SEX: Female

DAY ON TEST: 730

DOSE: 30 PPM 10-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Heart	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lung	Lymph Node	Nose
Parathyroid Gland	Salivary Glands	Skin	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	Urinary Bladder
Uterus			

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
Clitoral Gland	Duct	Dilatation	Moderate
Kidney		Nephropathy	Chronic, Minimal
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
		Hepatocellular Carcinoma	Multiple
	Oval Cell	Hyperplasia	Moderate
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Note: HEPATOCLR CARC TGLs = 1-12,2-12			
Note: HEPATOCLR ADEN TGLs = 3-4			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Ovary	Periovarn Tiss	Cyst	
Note: CYST TGLs = 4-11			
Pancreas	Acinus	Atrophy	Minimal
Pituitary Gland	Pars Distalis	Hyperplasia	Mild
Note: HYPERPLASIA TGLs = 5-7			
Spleen		Leukemia Mononuclear	
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9061

TRT#: 16

SEX: Female

DAY ON TEST: 710

DOSE: 30 PPM 10-10

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Brain	Esophagus
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Nose
Pancreas	Parathyroid Gland	Pituitary Gland	Salivary Glands
Skin	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder	Uterus	

OBSERVATIONS

Adrenal Gland	Cortex	Hypertrophy	Minimal
	Cortex	Vacuolization Cytoplasmic	Moderate
Bone Marrow	Femoral	Leukemia Mononuclear	
Clitoral Gland	Duct	Dilatation	Moderate
Heart		Leukemia Mononuclear	
Kidney		Leukemia Mononuclear	
		Nephropathy	Chronic, Minimal
Liver		Eosinophilic Focus	Marked
	Bile Duct	Fibrosis	Moderate
		Hepatocellular Adenoma	Multiple
		Hepatocellular Carcinoma	Multiple
	Bile Duct	Hyperplasia	Mild
	Oval Cell	Hyperplasia	Marked
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Note: LEUKEMIA MONUC	TGLs = 2-4,2-11		
Note: HEPATOCLR CARC	TGLs = 3-11		
Note: HEPATOCLR ADEN	TGLs = 4-4,4-11		
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Moderate
Ovary		Leukemia Mononuclear	
Spleen		Leukemia Mononuclear	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:10

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 9061

**TRT#:** 16

**SEX:** Female

**DAY ON TEST:** 710

**DOSE:** 30 PPM 10-10

**DISP:** Moribund Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

[ Leukemia Mononuclear TGLS = 1-1 ]

Thyroid Gland

C Cell

Adenoma

C Cell

Hyperplasia

Mild

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**PRIMARY CAUSE OF DEATH**

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Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9062

TRT#: 16

SEX: Female

DAY ON TEST: 731

DOSE: 30 PPM 10-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Brain	Esophagus
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Lung	Lymph Node
Ovary	Parathyroid Gland	Pituitary Gland	Salivary Glands
Skin	Spleen	Stomach - Forestomach	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	Uterus

MISSING

Intestine Large - Cecum

INSUFFICIENT TISSUE

Bone Marrow

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Moderate
	Cortex	Hypertrophy	Moderate
	Cortex	Vacuolization Cytoplasmic	Moderate
Clitoral Gland	Duct	Dilatation	Moderate
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Mild
Liver	Bile Duct	Cyst	
		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Mild
	Oval Cell	Hyperplasia	Moderate
		Inflammation	Chronic, Multifocal, Mild
		Vacuolization Cytoplasmic	Mild
Note: HEPATOCLR ADEN TGLs = 2-4,3-4			
Note: CYST TGLs = 1-4			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Moderate
Nose	Mucosa	Inflammation	Chronic Active, Moderate

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:10

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 9062

**TRT#:** 16

**SEX:** Female

**DAY ON TEST:** 731

**DOSE:** 30 PPM 10-10

**DISP:** Terminal Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Pancreas	Acinus	Atrophy	Moderate
Thyroid Gland	C Cell	Hyperplasia	Moderate

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**PRIMARY CAUSE OF DEATH**

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\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9063

TRT#: 16

SEX: Female

DAY ON TEST: 731

DOSE: 30 PPM 10-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Heart	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lung	Nose	Ovary
Parathyroid Gland	Salivary Glands	Skin	Spleen
Stomach - Forestomach	Thymus	Trachea	Urinary Bladder

OBSERVATIONS

Adrenal Gland	Cortex	Vacuolization Cytoplasmic	Mild
Clitoral Gland	Duct	Dilatation	Moderate
Kidney		Nephropathy	Chronic, Mild
Liver		Basophilic Focus	Moderate
		Eosinophilic Focus	Marked
	Bile Duct	Fibrosis	Mild
		Hepatocellular Adenoma	Multiple
		Hepatocellular Carcinoma	
	Bile Duct	Hyperplasia	Mild
	Oval Cell	Hyperplasia	Moderate
		Inflammation	Chronic, Multifocal, Mild
		Necrosis	Mild
		Vacuolization Cytoplasmic	Mild

Note: HEPATOCLR CARC TGLs = 2-12

[ Vacuolization Cytoplasmic TGLS = 3-4,3-12,3-13 ]

Lymph Node Mandibular

Note: LYMPH MAL HIST TGLs = 1-11

Note: MANDIBULAR LN NORMAL

Mammary Gland		Hyperplasia	Cystic, Moderate
Pancreas	Acinus	Atrophy	Minimal
Pituitary Gland	Pars Distalis	Hyperplasia	Moderate
Stomach	Glandular	Dysplasia	Focal, Mild

Note: DYSPLASIA TGLs = 5-6

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:10

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 9063

**TRT#:** 16

**SEX:** Female

**DAY ON TEST:** 731

**DOSE:** 30 PPM 10-10

**DISP:** Terminal Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

Thyroid Gland

C Cell

Hyperplasia

Moderate

Uterus

Endometrium

Hyperplasia

Cystic, Glandular, Moderate

Note: HYPERPLASIA TGLs = 4-10

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**PRIMARY CAUSE OF DEATH**

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9064

TRT#: 16

SEX: Female

DAY ON TEST: 682

DOSE: 30 PPM 10-10

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Brain	Esophagus
Eye	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Nose	Ovary	Pancreas	Parathyroid Gland
Pituitary Gland	Salivary Glands	Skin	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	Urinary Bladder
Uterus			

OBSERVATIONS

Adrenal Gland	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
Clitoral Gland	Duct	Dilatation	Moderate
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Minimal
Liver	Bile Duct	Hyperplasia	Mild
	Oval Cell	Hyperplasia	Moderate
		Hypertrophy	Moderate
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Moderate
Note: LEUKEMIA MONUC TGLs = 3-4			
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Minimal
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 2-1 ]			
Thyroid Gland	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL1-11, EYE PIGMENT NO APPARENT ON MICRO

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9065

TRT#: 16

SEX: Female

DAY ON TEST: 674

DOSE: 30 PPM 10-10

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Heart	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Nose	Ovary	Pancreas
Parathyroid Gland	Pituitary Gland	Salivary Glands	Skin
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea

MISSING

Clitoral Gland

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
Kidney		Nephropathy	Chronic, Minimal
Liver		Eosinophilic Focus	Marked
	Bile Duct	Fibrosis	Mild
		Hepatocellular Adenoma	Multiple
		Hepatocellular Carcinoma	
	Oval Cell	Hyperplasia	Marked
		Leukemia Mononuclear	
		Thrombosis	
Note: LEUKEMIA MONUC	TGLs = 2-4,2-12		
Note: HEPATOCLR ADEN	TGLs = 3-4,3-12		
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Moderate
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-1 ]			
Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Moderate
Urinary Bladder		Papilloma	
Uterus		Sarcoma Stromal	
Note: SARC STROMAL	TGLs = 4-		

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)

**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:10

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 9065

**TRT#:** 16

**SEX:** Female

**DAY ON TEST:** 674

**DOSE:** 30 PPM 10-10

**DISP:** Moribund Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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PRIMARY CAUSE OF DEATH

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Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9066

TRT#: 16

SEX: Female

DAY ON TEST: 731

DOSE: 30 PPM 10-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Heart	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Kidney	Lung	Lymph Node
Nose	Parathyroid Gland	Pituitary Gland	Salivary Glands
Skin	Spleen	Stomach - Forestomach	Stomach - Glandular
Trachea	Urinary Bladder		

MISSING

Ovary	Thymus
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OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Moderate
	Cortex	Vacuolization Cytoplasmic	Mild
Clitoral Gland	Duct	Dilatation	Moderate
Liver	Bile Duct	Cyst	
		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
		Hepatocellular Carcinoma	
	Oval Cell	Hyperplasia	Moderate
		Inflammation	Chronic, Multifocal, Mild
		Vacuolization Cytoplasmic	Mild
Note: HEPATOCLR CARC TGLs = 2-11			
Note: CHOLANGIOFIBROSIS-----MINIMAL			
Note: HEPATOCLR ADEN TGLs = 4-11,3-4,5-4			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Moderate
Thyroid Gland	C Cell	Hyperplasia	Mild
Uterus	Endometrium	Hyperplasia	Cystic, Glandular, Moderate
Note: HYPERPLASIA TGLs = 1-10			

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:10

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 9066

**TRT#:** 16

**SEX:** Female

**DAY ON TEST:** 731

**DOSE:** 30 PPM 10-10

**DISP:** Terminal Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9067

TRT#: 16

SEX: Female

DAY ON TEST: 731

DOSE: 30 PPM 10-10

DISP: Terminal Sacrifice

HISTO:

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Esophagus	Heart	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Lung	Lymph Node
Nose	Ovary	Pancreas	Parathyroid Gland
Pituitary Gland	Salivary Glands	Skin	Spleen
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder	Uterus		

**OBSERVATIONS**

Clitoral Gland	Duct	Dilatation	Moderate
Kidney		Nephropathy	Chronic, Minimal
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Oval Cell	Hyperplasia	Moderate
		Vacuolization Cytoplasmic	Moderate
Note: HEPATOCLR ADEN TGLs = 1-4,2-11			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9068

TRT#: 16

SEX: Female

DAY ON TEST: 695

DOSE: 30 PPM 10-10

DISP: Natural Death

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Brain
Esophagus	Heart	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Kidney	Lung	Nose
Ovary	Pancreas	Parathyroid Gland	Pituitary Gland
Salivary Glands	Skin	Spleen	Stomach - Forestomach
Stomach - Glandular	Thymus	Thyroid Gland	Trachea
Urinary Bladder	Uterus		

INSUFFICIENT TISSUE

Bone Marrow

OBSERVATIONS

Adrenal Gland	Cortex	Vacuolization Cytoplasmic	Mild
Clitoral Gland		Inflammation	Chronic Active, Mild
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
		Hepatocellular Carcinoma	
	Oval Cell	Hyperplasia	Moderate
		Inflammation	Chronic, Multifocal, Mild
		Vacuolization Cytoplasmic	Moderate
Note: HEPATOCLR CARC	TGLs = 3-12		
Note: HEPATOCLR ADEN	TGLs = 2-4,4-4		
Mammary Gland		Fibroadenoma	
Note: FIBROADENOMA	TGLs = 1-11		

PRIMARY CAUSE OF DEATH

-

Animal Note: CAUSE OF DEATH, LARGE MAMMARY TUMOR AND LIVER LESIONS

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9069

TRT#: 16

SEX: Female

DAY ON TEST: 731

DOSE: 30 PPM 10-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Esophagus
Heart	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Lung	Nose	Pancreas	Parathyroid Gland
Salivary Glands	Skin	Spleen	Stomach - Forestomach
Stomach - Glandular	Urinary Bladder	Uterus	

MISSING

Lymph Node	Thymus
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OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Cortex	Vacuolization Cytoplasmic	Mild
Brain		Compression	
Clitoral Gland	Duct	Dilatation	Moderate
Kidney		Nephropathy	Chronic, Minimal
Liver		Basophilic Focus	Mild
		Eosinophilic Focus	Marked
	Bile Duct	Fibrosis	Mild
		Hepatocellular Adenoma	Multiple
		Hepatocellular Carcinoma	Multiple
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Moderate
		Hypertrophy	Mild
		Inflammation	Chronic, Multifocal, Mild
		Vacuolization Cytoplasmic	Moderate

Note: HEPATOCLR ADEN TGLs = 2-12,4-14,5-4

Note: HEPATOCLR CARC TGLs = 3-13

Lymph Node

Note: MANDIBULAR LN MISSING

Mammary Gland

Ovary

Periovarn Tiss

Hyperplasia

Cyst

Cystic, Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:10

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 9069

**TRT#:** 16

**SEX:** Female

**DAY ON TEST:** 731

**DOSE:** 30 PPM 10-10

**DISP:** Terminal Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

Note: CYST TGLs = 1-11

Pituitary Gland

Pars Distalis

Adenoma

Note: ADENOMA TGLs = 6-7

Thyroid Gland

C Cell

Hyperplasia

Mild

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**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9070

TRT#: 16

SEX: Female

DAY ON TEST: 732

DOSE: 30 PPM 10-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Esophagus	Heart	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Lung	Lymph Node
Nose	Ovary	Parathyroid Gland	Salivary Glands
Skin	Spleen	Stomach - Forestomach	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	Uterus

OBSERVATIONS

Clitoral Gland Note: DILATATION TGLs = 1-10	Duct	Dilatation	Moderate
Kidney		Nephropathy	Chronic, Mild
Liver		Basophilic Focus	Mild
		Eosinophilic Focus	Marked
	Bile Duct	Fibrosis	Moderate
		Hepatocellular Adenoma	Multiple
	Oval Cell	Hyperplasia	Moderate
		Inflammation	Chronic Active, Mild
		Vacuolization Cytoplasmic	Moderate
Note: HEPATOCLR ADEN TGLs = 3-13,3-11,4-4,5-12			
Lymph Node Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Moderate
Pancreas	Acinus	Atrophy	Moderate
Pituitary Gland Note: ADENOMA TGLs = 2-7	Pars Distalis	Adenoma	
Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9071

TRT#: 16

SEX: Female

DAY ON TEST: 732

DOSE: 30 PPM 10-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Brain	Esophagus
Heart	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Lung	Lymph Node	Nose	Ovary
Parathyroid Gland	Salivary Glands	Skin	Spleen
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder	Uterus		

OBSERVATIONS

Adrenal Gland	Medulla	Hyperplasia	Mild
	Cortex	Vacuolization Cytoplasmic	Moderate
Clitoral Gland	Duct	Dilatation	Moderate
Kidney		Nephropathy	Chronic, Mild
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Oval Cell	Hyperplasia	Moderate
		Inflammation	Chronic, Multifocal, Mild
		Vacuolization Cytoplasmic	Mild
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Adenoma	
		Hyperplasia	Cystic, Moderate
Note: ADENOMA TGLs = 1-11			
Pancreas	Acinus	Atrophy	Mild
Pituitary Gland	Pars Distalis	Adenoma	
Thyroid Gland	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL1-11, SKIN MASS IS REALLY A MAMMARY TUMOR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9072

TRT#: 16

SEX: Female

DAY ON TEST: 599

DOSE: 30 PPM 10-10

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Brain
Clitoral Gland	Esophagus	Heart	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Nose	Ovary
Pancreas	Parathyroid Gland	Pituitary Gland	Salivary Glands
Skin	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder	Uterus	

OBSERVATIONS

Bone Marrow	Femoral	Leukemia Mononuclear	
Kidney		Nephropathy	Chronic, Minimal
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
		Hepatocellular Carcinoma	
	Bile Duct	Hyperplasia	Marked
	Oval Cell	Hyperplasia	Moderate
		Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 2-4		
Note: HEPATOCLR ADEN	TGLs = 3-4,4-12		
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Moderate
Spleen		Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 1-11		
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9073

TRT#: 16

SEX: Female

DAY ON TEST: 633

DOSE: 30 PPM 10-10

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Brain	Clitoral Gland	Esophagus
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Kidney
Lymph Node	Nose	Parathyroid Gland	Pituitary Gland
Salivary Glands	Skin	Stomach - Glandular	Trachea
Urinary Bladder	Uterus		

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
Bone Marrow	Femoral	Leukemia Mononuclear	
Heart		Degeneration	Chronic, Mild
		Leukemia Mononuclear	
Liver		Eosinophilic Focus	Mild
	Oval Cell	Hyperplasia	Moderate
		Leukemia Mononuclear	
		Leukemia Mononuclear	
Lung			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Moderate
Ovary	Periovarn Tiss	Cyst	
Note: CYST TGLs = 2-10			
Pancreas	Acinus	Atrophy	Moderate
		Leukemia Mononuclear	
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLs = 1-11 ]			
Stomach	Forestomach	Acanthosis	Mild
Thymus		Leukemia Mononuclear	
Thyroid Gland	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:10

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 9073

**TRT#:** 16

**SEX:** Female

**DAY ON TEST:** 633

**DOSE:** 30 PPM 10-10

**DISP:** Moribund Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

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\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9074

TRT#: 16

SEX: Female

DAY ON TEST: 732

DOSE: 30 PPM 10-10

DISP: Terminal Sacrifice

HISTO:

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Adrenal Gland - Cortex  
Brain  
Intestine Large - Colon  
Intestine Small - Jejunum  
Nose  
Stomach - Forestomach  
Urinary Bladder

Adrenal Gland - Medulla  
Esophagus  
Intestine Large - Rectum  
Islets, Pancreatic  
Ovary  
Stomach - Glandular  
Uterus

Bone  
Heart  
Intestine Small - Duodenum  
Lung  
Parathyroid Gland  
Thymus

Bone Marrow  
Intestine Large - Cecum  
Intestine Small - Ileum  
Mammary Gland  
Salivary Glands  
Trachea

**OBSERVATIONS**

Clitoral Gland  
Kidney  
Liver

Bile Duct  
Oval Cell

Inflammation  
Nephropathy  
Eosinophilic Focus  
Fibrosis  
Hepatocellular Adenoma  
Hyperplasia  
Leukemia Mononuclear  
Vacuolization Cytoplasmic

Chronic Active, Mild  
Chronic, Minimal  
Marked  
Moderate  
Multiple  
Moderate  
Mild

Note: HEPATOCLR ADEN TGLs = 2-4

Lymph Node  
Pancreas  
Pituitary Gland  
Skin

Mandibular  
Acinus  
Pars Distalis  
Subcut Tiss

Leukemia Mononuclear  
Atrophy  
Hyperplasia  
Lipoma

Moderate  
Mild

[ Lipoma TGLS = 1-11,1-12 ]

Spleen  
Thyroid Gland

C Cell  
C Cell

Leukemia Mononuclear  
Adenoma  
Hyperplasia

Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:10

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9075

TRT#: 16

SEX: Female

DAY ON TEST: 732

DOSE: 30 PPM 10-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla  
Clitoral Gland  
Intestine Large - Colon  
Intestine Small - Jejunum  
Pancreas  
Stomach - Forestomach  
Urinary Bladder

Bone  
Esophagus  
Intestine Large - Rectum  
Islets, Pancreatic  
Parathyroid Gland  
Stomach - Glandular

Bone Marrow  
Heart  
Intestine Small - Duodenum  
Lymph Node  
Salivary Glands  
Thymus

Brain  
Intestine Large - Cecum  
Intestine Small - Ileum  
Nose  
Skin  
Trachea

OBSERVATIONS

Adrenal Gland

Cortex  
Cortex

Hyperplasia  
Vacuolization Cytoplasmic  
Nephropathy  
Eosinophilic Focus  
Hepatocellular Adenoma  
Hyperplasia  
Leukemia Mononuclear  
Vacuolization Cytoplasmic

Moderate  
Mild  
Chronic, Minimal  
Marked  
Multiple  
Moderate  
Mild

Note: HEPATOCLR ADEN TGLs = 3-4  
Lung

Squamous Cell Carcinoma

Metastatic (Uncertain Primary Site), Multiple (Uncertain Primary Site)

Note: SQUAM CEL CARC TGLs = 4-2,4-3  
Lymph Node

Note: MANDIBULAR LN NORMAL

Mammary Gland

Hyperplasia  
Cyst

Cystic, Moderate

Ovary  
Note: CYST TGLs = 1-10,2-10

Periovarn Tiss

Pituitary Gland

Pars Distalis

Hyperplasia  
Leukemia Mononuclear

Mild

Spleen

Thyroid Gland

Bilateral, C Cell  
C Cell

Adenoma  
Hyperplasia  
Adenocarcinoma

Moderate

Uterus

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:11

**First Dose M/F:** NA / NA

**Lab:** BAT

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<b>ANIMAL ID:</b> 9075	<b>TRT#:</b> 16 <b>DOSE:</b> 30 PPM 10-10	<b>SEX:</b> Female <b>DISP:</b> Terminal Sacrifice	<b>DAY ON TEST:</b> 732 <b>HISTO:</b>
<b>ORGAN AND ACCOUNTABLE SITE STATUS</b>			
	Cervix, Mucosa Endometrium	Hyperplasia Hyperplasia Polyp Stromal	Squamous, Mild Cystic, Glandular, Moderate
Note: HYPERPLASIA	TGLs = 5-10		
Note: POLYP STROMAL	TGLs = 5-12		
<b>PRIMARY CAUSE OF DEATH</b>	-		

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:11

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9076

TRT#: 15

SEX: Female

DAY ON TEST: 733

DOSE: 30 PPM 0-10

DISP: Terminal Sacrifice

HISTO: 852366

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lung	Lymph Node - Mesenteric	Lymph Node - Thoracic
Nose	Parathyroid Gland	Salivary Glands	Skin
Spleen	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder	Uterus	

OBSERVATIONS

Clitoral Gland	Duct	Dilatation	Moderate
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Mild
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Mild
	Oval Cell	Hyperplasia	Moderate
		Vacuolization Cytoplasmic	Moderate
Note: HEPATOCLR ADEN TGLs = 3-4,4-4			
Mammary Gland		Hyperplasia	Cystic, Moderate
Ovary	Periovarn Tiss	Cyst	
Note: CYST TGLs = 1-10			
Pancreas	Acinus	Atrophy	Moderate
Pituitary Gland	Pars Distalis	Hyperplasia	Moderate
Note: HYPERPLASIA TGLs = 2-7			
Note: ANGIECTASIS TGLs = 2-7			
Thyroid Gland	C Cell	Carcinoma	
Note: CARCINOMA TGLs = 5-7			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:11

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9077

TRT#: 15

SEX: Female

DAY ON TEST: 537

DOSE: 30 PPM 0-10

DISP: Moribund Sacrifice

HISTO: 852367

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Bone	Bone Marrow	Brain
Esophagus	Heart	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Kidney	Nose	Ovary
Parathyroid Gland	Pituitary Gland	Salivary Glands	Skin
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder			

OBSERVATIONS

Adrenal Gland	Medulla	Hyperplasia	Mild
Clitoral Gland	Duct	Dilatation	Moderate
Liver		Eosinophilic Focus	Mild
	Bile Duct	Hyperplasia	Mild
	Oval Cell	Hyperplasia	Moderate
		Hypertrophy	Marked
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Moderate
Note: LEUKEMIA MONUC TGLs = 3-11			
Lung		Leukemia Mononuclear	
Lymph Node	Mediastinal	Leukemia Mononuclear	
	Mediastinal	Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 4-12 ]			
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Mild
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 2-1 ]			
Thyroid Gland	C Cell	Hyperplasia	Mild
Uterus	Endometrium	Hyperplasia	Cystic, Glandular, Moderate
Note: HYPERPLASIA TGLs = 1-10			

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFCE DUE TO LEUKEMIA AND LIVER LESIONS

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:11

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 9077

**TRT#:** 15

**DOSE:** 30 PPM 0-10

**SEX:** Female

**DISP:** Moribund Sacrifice

**DAY ON TEST:** 537

**HISTO:** 852367

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:11

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9078

TRT#: 15

SEX: Female

DAY ON TEST: 733

DOSE: 30 PPM 0-10

DISP: Terminal Sacrifice

HISTO: 852368

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Heart	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lymph Node	Nose	Ovary
Parathyroid Gland	Pituitary Gland	Salivary Glands	Spleen
Stomach - Forestomach	Stomach - Glandular	Trachea	Urinary Bladder

MISSING

Thymus

OBSERVATIONS

Adrenal Gland	Cortex	Vacuolization Cytoplasmic	Mild
Clitoral Gland	Duct	Dilatation	Moderate
		Inflammation	Chronic Active, Mild
Kidney		Nephropathy	Chronic, Minimal
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Mild
	Oval Cell	Hyperplasia	Mild
		Hypertrophy	Mild
		Inflammation	Chronic, Multifocal, Mild
		Vacuolization Cytoplasmic	Mild
Note: HEPATOCLR ADEN TGLs = 2-4,3-11			
Lung		Alveolar/Bronchiolar Adenoma	
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Moderate
Pancreas	Acinus	Atrophy	Minimal
Skin	Subcut Tiss	Lipoma	
Note: LIPOMA TGLs = 1-12			
Thyroid Gland	C Cell	Hyperplasia	Mild
Uterus		Polyp Stromal	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:11

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 9078

**TRT#:** 15

**SEX:** Female

**DAY ON TEST:** 733

**DOSE:** 30 PPM 0-10

**DISP:** Terminal Sacrifice

**HISTO:** 852368

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Note: POLYP STROMAL TGLs = 4-10

PRIMARY CAUSE OF DEATH

-

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\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:11

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9079

TRT#: 15

SEX: Female

DAY ON TEST: 733

DOSE: 30 PPM 0-10

DISP: Terminal Sacrifice

HISTO: 852369

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Lymph Node	Nose	Ovary	Parathyroid Gland
Salivary Glands	Skin	Stomach - Forestomach	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	Uterus

OBSERVATIONS

Adrenal Gland	Cortex	Vacuolization Cytoplasmic	Moderate
Clitoral Gland		Carcinoma	
Note: CARCINOMA	TGLs = 1-11		
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Mild
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Mild
	Oval Cell	Hyperplasia	Moderate
		Hypertrophy	Moderate
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Note: HEPATOCLR ADEN	TGLs = 3-4		
Lung		Squamous Cell Carcinoma	Metastatic (Clitoral Gland)
Note: SQUAM CEL CARC	TGLs = 4-2		
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Moderate
Pancreas	Acinus	Atrophy	Minimal
Pituitary Gland	Pars Distalis	Hyperplasia	Moderate
Note: HYPERPLASIA	TGLs = 2-7		
Spleen		Leukemia Mononuclear	
Thyroid Gland	C Cell	Adenoma	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:11

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 9079

**TRT#:** 15

**SEX:** Female

**DAY ON TEST:** 733

**DOSE:** 30 PPM 0-10

**DISP:** Terminal Sacrifice

**HISTO:** 852369

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

C Cell

Hyperplasia

Moderate

---

PRIMARY CAUSE OF DEATH

-

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:11

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9080

TRT#: 15

SEX: Female

DAY ON TEST: 733

DOSE: 30 PPM 0-10

DISP: Terminal Sacrifice

HISTO: 852370

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Clitoral Gland	Esophagus	Heart	Intestine Large - Cecum
Intestine Large - Colon	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lymph Node	Nose	Pancreas
Parathyroid Gland	Salivary Glands	Skin	Spleen
Stomach - Forestomach	Stomach - Glandular	Trachea	Urinary Bladder
Uterus			

MISSING

Intestine Large - Rectum

INSUFFICIENT TISSUE

Thymus

OBSERVATIONS

Adrenal Gland	Cortex	Vacuolization Cytoplasmic	Minimal
Kidney		Nephropathy	Chronic, Minimal
Liver		Eosinophilic Focus	Marked
	Bile Duct	Hyperplasia	Moderate
	Oval Cell	Hyperplasia	Moderate
		Inflammation	Chronic, Multifocal, Mild
		Vacuolization Cytoplasmic	Moderate
Note: HEPATOCLR ADEN TGLs = 2-4			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Fibroadenoma	
		Hyperplasia	Cystic, Moderate
Note: FIBROADENOMA TGLs = 3-11			
Ovary	Periovarn Tiss	Cyst	
Note: CYST TGLs = 1-12			
Pituitary Gland	Pars Distalis	Adenoma	Moderate
Thyroid Gland	C Cell	Hyperplasia	Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)

**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:11

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 9080

**TRT#:** 15

**SEX:** Female

**DAY ON TEST:** 733

**DOSE:** 30 PPM 0-10

**DISP:** Terminal Sacrifice

**HISTO:** 852370

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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PRIMARY CAUSE OF DEATH

-

Animal Note: TGL3-11, SKIN LESION IS MAMMARY TUMOR

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:11

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9091

TRT#: 16

SEX: Female

DAY ON TEST: 737

DOSE: 30 PPM 10-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Heart	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lung	Lymph Node	Nose
Ovary	Parathyroid Gland	Pituitary Gland	Salivary Glands
Skin	Spleen	Stomach - Forestomach	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	

OBSERVATIONS

Adrenal Gland	Cortex	Cyst	
	Cortex	Hyperplasia	Mild
	Cortex	Vacuolization Cytoplasmic	Mild
Clitoral Gland	Duct	Dilatation	Moderate
Note: DILATATION TGLs = 5-10			
Kidney		Nephropathy	Chronic, Mild
Liver		Eosinophilic Focus	Marked
	Bile Duct	Fibrosis	Mild
		Hepatocellular Adenoma	Multiple
		Hepatocellular Carcinoma	Multiple
	Bile Duct	Hyperplasia	Mild
	Oval Cell	Hyperplasia	Moderate
		Vacuolization Cytoplasmic	Mild
Note: HEPATOCLR ADEN TGLs = 1-4,2-4			
Note: HEPATOCLR CARC TGLs = 3-12,4-11			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Minimal
Thyroid Gland	C Cell	Hyperplasia	Moderate
Uterus	Endometrium	Hyperplasia	Cystic, Glandular, Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:11

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9092

TRT#: 16

SEX: Female

DAY ON TEST: 737

DOSE: 30 PPM 10-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Brain	Esophagus
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Nose
Ovary	Parathyroid Gland	Salivary Glands	Skin
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder			

OBSERVATIONS

Adrenal Gland	Cortex	Cyst	
	Cortex	Hyperplasia	Moderate
Bone Marrow	Femoral	Leukemia Mononuclear	
Clitoral Gland	Duct	Dilatation	Moderate
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Minimal
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Mild
	Oval Cell	Hyperplasia	Mild
		Inflammation	Chronic Active, Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Moderate
Note: HEPATOCLR ADEN	TGLs = 2-4		
Note: HEPATOCLR ADEN	TGLs = 2-4		
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
	Mediastinal	Leukemia Mononuclear	
Note: LEUKEMIA MONUC	TGLs = 3-2		
Mammary Gland		Hyperplasia	Cystic, Moderate
Pancreas	Acinus	Atrophy	Mild
Pituitary Gland	Pars Distalis	Adenoma	
	Pars Distalis	Hyperplasia	Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:11

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 9092

**TRT#:** 16

**SEX:** Female

**DAY ON TEST:** 737

**DOSE:** 30 PPM 10-10

**DISP:** Terminal Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

Note: ADENOMA TGLs = 4-7

Spleen

Thyroid Gland

Uterus

Note: HYPERPLASIA TGLs = 1-10

C Cell

Endometrium

Leukemia Mononuclear

Hyperplasia

Hyperplasia

Moderate

Cystic, Glandular, Moderate

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**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:11

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9093

TRT#: 16

SEX: Female

DAY ON TEST: 738

DOSE: 30 PPM 10-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Clitoral Gland	Esophagus	Heart	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Lymph Node	Nose
Ovary	Pancreas	Parathyroid Gland	Pituitary Gland
Salivary Glands	Skin	Stomach - Forestomach	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	Uterus

OBSERVATIONS

Adrenal Gland	Cortex	Adenoma	
	Cortex	Hypertrophy	Moderate
	Cortex	Vacuolization Cytoplasmic	Moderate
Kidney		Nephropathy	Chronic, Minimal
Liver	Bile Duct	Cyst	
		Eosinophilic Focus	Moderate
		Hepatocellular Carcinoma	
	Oval Cell	Hyperplasia	Moderate
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Moderate
Note: HEPATOCLR CARC TGLs = 2-4			
Lung		Leukemia Mononuclear	
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Fibroadenoma	
		Hyperplasia	Cystic, Marked
Note: FIBROADENOMA TGLs = 3-10			
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-1 ]			
Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)

**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:11

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 9093

**TRT#:** 16

**SEX:** Female

**DAY ON TEST:** 738

**DOSE:** 30 PPM 10-10

**DISP:** Terminal Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Animal Note: TGL3-10, CLITORAL GLAND IS MAMMARY TUMOR

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:11

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9094

TRT#: 16

SEX: Female

DAY ON TEST: 704

DOSE: 30 PPM 10-10

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Heart	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lymph Node	Nose	Ovary
Pancreas	Parathyroid Gland	Pituitary Gland	Salivary Glands
Skin	Stomach - Glandular	Thymus	Trachea
Urinary Bladder	Uterus		

OBSERVATIONS

Adrenal Gland	Cortex	Hypertrophy	Mild
	Cortex	Vacuolization Cytoplasmic	Mild
Clitoral Gland		Inflammation	Chronic Active, Mild
Kidney		Nephropathy	Chronic, Minimal
Liver	Bile Duct	Eosinophilic Focus	Marked
		Fibrosis	Moderate
		Hepatocellular Adenoma	Multiple
		Hepatocellular Carcinoma	Multiple
	Oval Cell	Hyperplasia	Marked
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Marked
Note: LEUKEMIA MONUC	TGLs = 2-4,2-12,2-13		
Note: HEPATOCLR ADEN	TGLs = 4-4,4-12,4-13		
Note: HEPATOCLR CARC	TGLs = 3-12,3-13		
Lung		Leukemia Mononuclear	
		Metaplasia	Osseous, Focal, Mild
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Moderate
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-11 ]			
Stomach	Forestomach	Acanthosis	Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:11

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 9094

**TRT#:** 16

**SEX:** Female

**DAY ON TEST:** 704

**DOSE:** 30 PPM 10-10

**DISP:** Moribund Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

Forestomach

Inflammation

Chronic Active, Mild

Thyroid Gland

C Cell

Hyperplasia

Moderate

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**PRIMARY CAUSE OF DEATH**

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**Animal Note:** MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:11

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9095

TRT#: 16

SEX: Female

DAY ON TEST: 707

DOSE: 30 PPM 10-10

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Nose	Parathyroid Gland	Pituitary Gland	Salivary Glands
Skin	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder	Uterus	

MISSING

Mammary Gland

OBSERVATIONS

Adrenal Gland	Cortex	Vacuolization Cytoplasmic	Mild
Clitoral Gland		Inflammation	Chronic Active, Mild
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Minimal
Liver	Bile Duct	Eosinophilic Focus	Marked
		Fibrosis	Marked
		Hepatocellular Adenoma	Multiple
		Hepatocellular Carcinoma	Multiple
	Oval Cell	Hyperplasia	Marked
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Moderate
Note: HEPATOCLR CARC	TGLs = 3-11,3-12		
Note: HEPATOCLR ADEN	TGLs = 3-4,3-11,3-12		
Lung		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Ovary	Periovarn Tiss	Cyst	
Note: CYST	TGLs = 2-10		
Pancreas	Acinus	Atrophy	Marked
Spleen		Leukemia Mononuclear	
Thyroid Gland	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:11

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 9095

**TRT#:** 16

**SEX:** Female

**DAY ON TEST:** 707

**DOSE:** 30 PPM 10-10

**DISP:** Moribund Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA ANF LIVER TUMORS

Animal Note: TGL1-7, PITUITARY CYST NOT APPARENT ON MICRO

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:11

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9096

TRT#: 16

SEX: Female

DAY ON TEST: 738

DOSE: 30 PPM 10-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Lung	Lymph Node	Nose	Ovary
Pancreas	Parathyroid Gland	Salivary Glands	Skin
Spleen	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder	Uterus	

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Moderate
Clitoral Gland	Duct	Dilatation	Moderate
Note: DILATATION TGLs = 1-11			
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Minimal
Liver		Eosinophilic Focus	Marked
	Bile Duct	Fibrosis	Moderate
	Bile Duct	Hepatocellular Adenoma	Multiple
		Hyperplasia	Mild
		Inflammation	Multifocal, Mild
		Vacuolization Cytoplasmic	Moderate
Note: HEPATOCLR ADEN TGLs = 2-4,3-12,4-13			
Mammary Gland		Hyperplasia	Cystic, Mild
Pituitary Gland	Pars Distalis	Hyperplasia	Mild
Note: HYPERPLASIA TGLs = 5-7			
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:11

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9097

TRT#: 16

SEX: Female

DAY ON TEST: 738

DOSE: 30 PPM 10-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Lung	Nose	Parathyroid Gland	Pituitary Gland
Salivary Glands	Skin	Stomach - Forestomach	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	

MISSING

Clitoral Gland

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Mild
Liver	Bile Duct	Cyst	
		Cytomegaly	Moderate
		Hepatocellular Adenoma	Multiple
		Hepatocellular Carcinoma	
	Bile Duct	Hyperplasia	Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Note: HEPATOCLR ADEN	TGLs = 1-4,5-12		
Note: HEPATOCLR CARC	TGLs = 2-13		
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Mild
Ovary	Periovarn Tiss	Cyst	
Note: CYST	TGLs = 3-10		
Pancreas	Acinus	Atrophy	Mild
Spleen		Leukemia Mononuclear	
Thyroid Gland	C Cell	Hyperplasia	Moderate
Uterus	Cervix	Cyst	
Note: CYST	TGLs = 4-11		

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:11

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 9097

**TRT#:** 16

**SEX:** Female

**DAY ON TEST:** 738

**DOSE:** 30 PPM 10-10

**DISP:** Terminal Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:11

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9098

TRT#: 16

SEX: Female

DAY ON TEST: 738

DOSE: 30 PPM 10-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Bone Marrow	Brain	Clitoral Gland
Esophagus	Heart	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lung	Nose	Parathyroid Gland
Pituitary Gland	Salivary Glands	Skin	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	Urinary Bladder
Uterus			

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Cortex	Vacuolization Cytoplasmic	Mild
Eye	Retina	Atrophy	Marked
	Lens	Cataract	Moderate
Note: CATARACT	TGLs = 1-11		
Kidney		Nephropathy	Chronic, Minimal
Liver		Basophilic Focus	Mild
		Eosinophilic Focus	Marked
	Bile Duct	Fibrosis	Moderate
		Hepatocellular Adenoma	Multiple
		Hepatocellular Carcinoma	
	Oval Cell	Hyperplasia	Moderate
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Moderate
Note: HEPATOCLR CARC	TGLs = 4-14		
Note: HEPATOCLR ADEN	TGLs = 6-4,5-13		
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Mild
Ovary	Periovarn Tiss	Cyst	
Note: CYST	TGLs = 3-10		
Pancreas	Acinus	Atrophy	Moderate
Spleen		Leukemia Mononuclear	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:11

**First Dose M/F:** NA / NA

**Lab:** BAT

---

**ANIMAL ID:** 9098

**TRT#:** 16

**SEX:** Female

**DAY ON TEST:** 738

**DOSE:** 30 PPM 10-10

**DISP:** Terminal Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

[ Leukemia Mononuclear TGLS = 2-12 ]

Thyroid Gland

C Cell

Hyperplasia

Moderate

---

**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:11

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9099

TRT#: 16

SEX: Female

DAY ON TEST: 543

DOSE: 30 PPM 10-10

DISP: Moribund Sacrifice

HISTO: 852389

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Esophagus	Heart	Intestine Large - Cecum
Intestine Large - Colon	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Kidney	Lung	Mammary Gland
Nose	Ovary	Parathyroid Gland	Pituitary Gland
Salivary Glands	Skin	Stomach - Forestomach	Stomach - Glandular
Thymus	Trachea	Urinary Bladder	Uterus

**MISSING**

Intestine Large - Rectum

**OBSERVATIONS**

Clitoral Gland	Duct	Dilatation	Moderate
		Inflammation	Chronic Active, Marked
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
		Leukemia Mononuclear	
Lymph Node	Mandibular	Leukemia Mononuclear	
Pancreas	Acinus	Atrophy	Mild
Spleen		Leukemia Mononuclear	
Thyroid Gland	C Cell	Hyperplasia	Mild
Vagina		Polyp	

Note: POLYP TGLs = 1-11

**PRIMARY CAUSE OF DEATH**

-

Animal Note: MORIBUND SACRIFICE DUE TO PROLAPSED VAGINA

Animal Note: TGL1-11 TISSUE IS VAGINA, NOT UTERUS

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:11

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9100

TRT#: 16

SEX: Female

DAY ON TEST: 738

DOSE: 30 PPM 10-10

DISP: Natural Death

HISTO: 852390

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Heart	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lung	Lymph Node	Ovary
Pancreas	Parathyroid Gland	Pituitary Gland	Salivary Glands
Skin	Spleen	Stomach - Forestomach	Stomach - Glandular
Thymus	Trachea	Uterus	

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Moderate
	Cortex	Hypertrophy	Mild
Clitoral Gland		Carcinoma	
Note: CARCINOMA TGLs = 1-12			
Kidney	Renal Tubule	Inflammation	Acute, Multifocal, Moderate
Note: INFLAMMATION TGLs = 7-7			
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
		Hepatocellular Carcinoma	
	Oval Cell	Hyperplasia	Moderate
		Inflammation	Chronic, Multifocal, Mild
Note: HEPATOCLR ADEN TGLs = 4-4,2-13 [ Hepatocellular Adenoma TGLs = 3-13 ]			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Nose	Mucosa	Inflammation	Chronic Active, Mild
Thyroid Gland	C Cell	Hyperplasia	Mild
Urinary Bladder		Hemorrhage	Marked
Note: HEMORRHAGE TGLs = 6-11			

PRIMARY CAUSE OF DEATH -

Animal Note: CAUSE OF DEATH, CLITORAL GLAND TUMOR

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:11

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 9100

**TRT#:** 16

**SEX:** Female

**DAY ON TEST:** 738

**DOSE:** 30 PPM 10-10

**DISP:** Natural Death

**HISTO:** 852390

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Animal Note: TGL1-12, SKIN MASS IS CLITORAL GLAND TUMOR

Animal Note: TGL5-10, OVARIES WITHIN NORMAL LIMITS

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:11

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9181

TRT#: 16

SEX: Female

DAY ON TEST: 736

DOSE: 30 PPM 10-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Clitoral Gland	Esophagus	Heart	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Lung	Lymph Node
Nose	Ovary	Parathyroid Gland	Pituitary Gland
Salivary Glands	Skin	Spleen	Stomach - Forestomach
Stomach - Glandular	Trachea	Urinary Bladder	

MISSING

Thymus

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Mild
	Cortex	Hypertrophy	Mild
	Cortex	Vacuolization Cytoplasmic	Mild
Kidney		Nephropathy	Chronic, Mild
		Basophilic Focus	Mild
Liver		Eosinophilic Focus	Marked
	Bile Duct	Fibrosis	Moderate
		Hepatocellular Adenoma	Multiple
		Hepatocellular Carcinoma	
	Oval Cell	Hyperplasia	Moderate
		Hypertrophy	Mild
		Inflammation	Chronic, Multifocal, Mild
	Vacuolization Cytoplasmic	Moderate	
Note: HEPATOCLR ADEN TGLs = 1-4,2-11 [ Vacuolization Cytoplasmic TGLS = 2-11 ]			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Pancreas	Acinus	Atrophy	Moderate
Thyroid Gland	C Cell	Hyperplasia	Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:11

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 9181

**TRT#:** 16

**SEX:** Female

**DAY ON TEST:** 736

**DOSE:** 30 PPM 10-10

**DISP:** Terminal Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Uterus	Endometrium	Hyperplasia	Cystic, Glandular, Mild
PRIMARY CAUSE OF DEATH	-		

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:11

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9182

TRT#: 16

SEX: Female

DAY ON TEST: 736

DOSE: 30 PPM 10-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Clitoral Gland	Esophagus	Heart	Intestine Large - Cecum
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lung	Nose	Ovary
Parathyroid Gland	Pituitary Gland	Salivary Glands	Skin
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder	Uterus		

OBSERVATIONS

Adrenal Gland	Cortex	Vacuolization Cytoplasmic	Mild
Eye	Retina	Atrophy	Marked
	Lens	Cataract	Moderate
Note: CATARACT TGLs = 1-11			
Note: ATROPHY TGLs = 1-11			
Intestine Large	Colon	Parasite Metazoan	
Kidney		Nephropathy	Chronic, Moderate
Liver		Eosinophilic Focus	Marked
	Bile Duct	Fibrosis	Moderate
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Mild
	Oval Cell	Hyperplasia	Moderate
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Note: HEPATOCLR ADEN TGLs = 2-12,3-4			
Lymph Node	Mandibular	Leukemia Mononuclear	
Mammary Gland		Hyperplasia	Cystic, Moderate
Pancreas	Acinus	Atrophy	Moderate
Spleen		Leukemia Mononuclear	
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:11

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9183

TRT#: 16

SEX: Female

DAY ON TEST: 562

DOSE: 30 PPM 10-10

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Brain	Esophagus	Heart
Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum
Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic	Lymph Node
Nose	Ovary	Pancreas	Parathyroid Gland
Pituitary Gland	Salivary Glands	Skin	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	Urinary Bladder
Uterus			

OBSERVATIONS

Adrenal Gland	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
	Cortex	Vacuolization Cytoplasmic	Mild
Bone Marrow	Femoral	Leukemia Mononuclear	
Clitoral Gland		Inflammation	Chronic Active, Mild
Kidney		Nephropathy	Chronic, Minimal
Liver	Bile Duct	Hyperplasia	Moderate
		Hypertrophy	Moderate
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Marked
Note: LEUKEMIA MONUC TGLs = 2-4,3-4			
Lung		Leukemia Mononuclear	
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Mild
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-11 ]			
Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:11

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9184

TRT#: 16

SEX: Female

DAY ON TEST: 736

DOSE: 30 PPM 10-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Heart	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lung	Lymph Node	Nose
Ovary	Pancreas	Parathyroid Gland	Pituitary Gland
Salivary Glands	Skin	Stomach - Forestomach	Stomach - Glandular
Trachea	Urinary Bladder		

MISSING

Thymus

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Moderate
	Cortex	Vacuolization Cytoplasmic	Moderate
Clitoral Gland	Duct	Dilatation	Moderate
Kidney		Nephropathy	Chronic, Mild
Liver		Eosinophilic Focus	Moderate
	Oval Cell	Hepatocellular Adenoma	Multiple
		Hyperplasia	Moderate
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Moderate
Note: HEPATOCLR ADEN TGLs = 1-4,2-4			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Moderate
Spleen		Leukemia Mononuclear	
Thyroid Gland	C Cell	Hyperplasia	Moderate
Uterus	Endometrium	Hyperplasia	Cystic, Glandular, Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:11

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9185

TRT#: 16

SEX: Female

DAY ON TEST: 312

DOSE: 30 PPM 10-10

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Clitoral Gland	Esophagus	Heart
Intestine Large - Cecum	Intestine Large - Colon	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Lung	Lymph Node
Mammary Gland	Nose	Ovary	Pancreas
Parathyroid Gland	Pituitary Gland	Salivary Glands	Skin
Spleen	Stomach - Forestomach	Stomach - Glandular	Thymus
Trachea	Urinary Bladder		

OBSERVATIONS

Intestine Large	Rectum	Parasite Metazoan	
Kidney	Transit Epithe	Carcinoma	
Note: CARCINOMA TGLs = 3-11			
Liver		Eosinophilic Focus	Mild
		Hepatocellular Adenoma	
	Oval Cell	Hyperplasia	Minimal
		Inflammation	Chronic, Multifocal, Minimal
Note: HEPATOCLR ADEN TGLs = 4-4			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Oviduct		Dilatation	Moderate
Thyroid Gland	C Cell	Hyperplasia	Mild
Uterus		Dilatation	Moderate

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO KIDNEY TUMOR

Animal Note: TGL1,TGL2, INTESTINE NOT IN SECTION

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:11

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9186

TRT#: 16

SEX: Female

DAY ON TEST: 736

DOSE: 30 PPM 10-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Esophagus	Heart	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Lung	Lymph Node
Nose	Ovary	Pancreas	Parathyroid Gland
Pituitary Gland	Skin	Spleen	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	Urinary Bladder

MISSING

Mammary Gland

OBSERVATIONS

Clitoral Gland		Inflammation	Chronic Active, Mild
Kidney		Nephropathy	Chronic, Mild
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Oval Cell	Hyperplasia	Moderate
		Inflammation	Chronic, Multifocal, Mild
		Vacuolization Cytoplasmic	Moderate
Note: HEPATOCLR ADEN TGLs = 1-4,2-4			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Salivary Glands	Acinus	Atrophy	Mild
Thyroid Gland	C Cell	Hyperplasia	Mild
Uterus		Polyp Stromal	

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:11

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9187

TRT#: 16

SEX: Female

DAY ON TEST: 736

DOSE: 30 PPM 10-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex	Adrenal Gland - Medulla	Bone	Bone Marrow
Brain	Esophagus	Intestine Large - Cecum	Intestine Large - Colon
Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum
Islets, Pancreatic	Lung	Lymph Node	Nose
Ovary	Salivary Glands	Skin	Spleen
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder	Uterus		

MISSING

Clitoral Gland	Parathyroid Gland	Thyroid Gland
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OBSERVATIONS

Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Mild
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
	Oval Cell	Hyperplasia	Moderate
		Inflammation	Chronic, Multifocal, Mild
		Vacuolization Cytoplasmic	Moderate
Note: HEPATOCLR ADEN TGLs = 3-4			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Fibroadenoma	
		Hyperplasia	Cystic, Moderate
Note: FIBROADENOMA TGLs = 1-11			
Pancreas	Acinus	Atrophy	Moderate
		Focal Cellular Change	Multiple, Mild
Pituitary Gland	Pars Distalis	Hyperplasia	Mild
Note: HYPERPLASIA TGLs = 2-7			

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL1-11, SKIN MASS IS MAMMARY TUMOR

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:11

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9188

TRT#: 16

SEX: Female

DAY ON TEST: 737

DOSE: 30 PPM 10-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Bone	Bone Marrow	Brain
Esophagus	Intestine Large - Cecum	Intestine Large - Colon	Intestine Large - Rectum
Intestine Small - Duodenum	Intestine Small - Ileum	Intestine Small - Jejunum	Islets, Pancreatic
Nose	Pancreas	Parathyroid Gland	Skin
Stomach - Forestomach	Stomach - Glandular	Thymus	Trachea
Urinary Bladder	Uterus		

MISSING

Lymph Node	Salivary Glands
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OBSERVATIONS

Adrenal Gland	Cortex	Vacuolization Cytoplasmic	Minimal
Clitoral Gland	Duct	Dilatation	Moderate
Heart		Degeneration	Chronic, Mild
Kidney		Nephropathy	Chronic, Mild
Liver		Eosinophilic Focus	Marked
	Bile Duct	Fibrosis	Mild
		Hepatocellular Adenoma	Multiple
		Hepatocellular Carcinoma	
	Bile Duct	Hyperplasia	Moderate
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Mild
Note: HEPATOCLR ADEN	TGLs = 2-4		
Note: HEPATOCLR CARC	TGLs = 2-11		
Lung		Leukemia Mononuclear	
Lymph Node			
Note: MANDIBVULAR LN MISSING			
Mammary Gland		Hyperplasia	Cystic, Moderate
Ovary	Periovarn Tiss	Cyst	
Note: CYST	TGLs = 1-10		
Pituitary Gland	Pars Distalis	Cyst	
Note: CYST	TGLs = 3-7		

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:11

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 9188

**TRT#:** 16

**SEX:** Female

**DAY ON TEST:** 737

**DOSE:** 30 PPM 10-10

**DISP:** Terminal Sacrifice

**HISTO:**

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

Spleen

Leukemia Mononuclear

Thyroid Gland

C Cell

Hyperplasia

Mild

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**PRIMARY CAUSE OF DEATH**

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:11

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9189

TRT#: 16

SEX: Female

DAY ON TEST: 737

DOSE: 30 PPM 10-10

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla	Blood	Bone	Bone Marrow
Brain	Esophagus	Heart	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Lung	Lymph Node
Nose	Ovary	Parathyroid Gland	Pituitary Gland
Salivary Glands	Skin	Spleen	Stomach - Forestomach
Stomach - Glandular	Thymus	Trachea	Urinary Bladder

OBSERVATIONS

Adrenal Gland	Cortex	Hyperplasia	Moderate
Clitoral Gland		Inflammation	Chronic Active, Mild
Kidney		Nephropathy	Chronic, Mild
Liver		Eosinophilic Focus	Marked
		Hepatocellular Adenoma	Multiple
		Hepatocellular Carcinoma	
	Oval Cell	Hyperplasia	Moderate
		Inflammation	Chronic, Multifocal, Mild
		Vacuolization Cytoplasmic	Mild
Note: HEPATOCLR ADEN TGLs = 1-4,3-4			
Note: HEPATOCLR CARC TGLs = 2-11			
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Moderate
Pancreas	Acinus	Atrophy	Moderate
Thyroid Gland	C Cell	Hyperplasia	Moderate
Uterus	Endometrium	Hyperplasia	Cystic, Glandular, Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 05077-01

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Test Compound: Polybrominated biphenyl mixture (Firemaster FF-1)  
CAS Number: 67774-32-7

Date Report Requested: 10/23/2014

Time Report Requested: 08:38:11

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 9190

TRT#: 16

SEX: Female

DAY ON TEST: 724

DOSE: 30 PPM 10-10

DISP: Moribund Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Bone	Brain	Esophagus	Intestine Large - Cecum
Intestine Large - Colon	Intestine Large - Rectum	Intestine Small - Duodenum	Intestine Small - Ileum
Intestine Small - Jejunum	Islets, Pancreatic	Lymph Node	Nose
Ovary	Pancreas	Parathyroid Gland	Pituitary Gland
Salivary Glands	Skin	Stomach - Glandular	Thymus
Trachea	Urinary Bladder		

OBSERVATIONS

Adrenal Gland	Cortex	Leukemia Mononuclear	
	Medulla	Leukemia Mononuclear	
Bone Marrow	Femoral	Leukemia Mononuclear	
Clitoral Gland	Duct	Dilatation	Moderate
Note: DILATATION TGLs = 5-10			
Heart		Leukemia Mononuclear	
Kidney		Leukemia Mononuclear	
		Nephropathy	Chronic, Minimal
Liver		Eosinophilic Focus	Moderate
	Bile Duct	Fibrosis	Moderate
		Hepatocellular Adenoma	Multiple
	Bile Duct	Hyperplasia	Mild
	Oval Cell	Hyperplasia	Moderate
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Marked
Note: HEPATOCLR ADEN TGLs = 2-4,3-12			
Note: LEUKEMIA MONUC TGLs = 2-4			
Lung		Leukemia Mononuclear	
Lymph Node			
Note: MANDIBULAR LN NORMAL			
Mammary Gland		Hyperplasia	Cystic, Moderate
Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-11 ]			

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 05077-01

**Test Type:** CHRONIC

**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Polybrominated biphenyl mixture (Firemaster FF-1)  
**CAS Number:** 67774-32-7

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 08:38:11

**First Dose M/F:** NA / NA

**Lab:** BAT

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**ANIMAL ID:** 9190

**TRT#:** 16

**SEX:** Female

**DAY ON TEST:** 724

**DOSE:** 30 PPM 10-10

**DISP:** Moribund Sacrifice

**HISTO:**

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Stomach	Forestomach	Acanthosis	Mild
Thyroid Gland	C Cell	Hyperplasia	Mild
Uterus	Endometrium	Hyperplasia	Cystic, Glandular, Mild

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**PRIMARY CAUSE OF DEATH**

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Animal Note: TGL4-10OVBAR Y NORMAL ON HISTO

Animal Note: MORIBUND SACRIFICE DUE TO LEUKEMIA MONONUCLEAR

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**\*\* END OF REPORT \*\***

\* PROTOCOL REQUIRED TISSUE