

**Experiment Number:** 97006-01  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Methyl isobutyl ketone  
**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014  
**Time Report Requested:** 22:41:40  
**First Dose M/F:** NA / NA  
**Lab:** BNW

<b>C Number:</b>	C97006
<b>Lock Date:</b>	01/24/2003
<b>Cage Range:</b>	All
<b>Date Range:</b>	All
<b>Reasons For Removal:</b>	All
<b>Removal Date Range:</b>	All
<b>Treatment Groups:</b>	All
<b>Study Gender:</b>	Both
<b>PWG Approval Date</b>	05/14/2004

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:40

First Dose M/F: NA / NA

Lab: BNW

<b>ANIMAL ID:</b> 1	<b>TRT#:</b> 1 <b>DOSE:</b> CONTROL	<b>SEX:</b> Male <b>DISP:</b> Terminal Sacrifice	<b>DAY ON TEST:</b> 726 <b>HISTO:</b> 44563
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ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Larynx
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Nose	* Pancreas
* Parathyroid Gland	Peritoneum	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Trachea

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Mild
* Heart		Cardiomyopathy	Minimal
* Islets, Pancreatic		Adenoma	
* Kidney		Nephropathy	Minimal
* Liver		Angiectasis	Mild
[ Angiectasis TGLS = 4-14 ]			
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic, Minimal
* Mammary Gland		Galactoceles	Marked
[ Galactoceles TGLS = 1-14 ]			
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 2-10 ]			
Pleura		Fibrosis	Minimal
* Testes	Bilateral, Interstit Cell	Adenoma	
[ Adenoma TGLS = 3-9 ]			
* Thyroid Gland	C Cell	Hyperplasia	Moderate
* Urinary Bladder		Calculus Micro Observation Only	Mild

PRIMARY CAUSE OF DEATH	-
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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

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Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:40

First Dose M/F: NA / NA

Lab: BNW

<b>ANIMAL ID:</b> 2	<b>TRT#:</b> 1 <b>DOSE:</b> CONTROL	<b>SEX:</b> Male <b>DISP:</b> Terminal Sacrifice	<b>DAY ON TEST:</b> 726 <b>HISTO:</b> 44564
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ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Epididymis	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Nose	* Pancreas	* Parathyroid Gland	Peritoneum
Pleura	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Trachea	* Urinary Bladder

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Medulla		Pheochromocytoma Benign	
* Brain		Compression	Mild
* Kidney		Nephropathy	Minimal
* Liver		Clear Cell Focus	
* Lung	Alveolar Epith	Hyperplasia	Marked
[ Hyperplasia TGLS = 3-14 ]			
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 1-10 ]			
* Testes	Interstit Cell	Adenoma	
	Interstit Cell	Hyperplasia	Moderate
[ Adenoma TGLS = 2-9 ]			
* Thyroid Gland	Follicular Cel	Hyperplasia	Minimal

PRIMARY CAUSE OF DEATH

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:40

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 3

TRT#: 1

SEX: Male

DAY ON TEST: 727

DOSE: CONTROL

DISP: Terminal Sacrifice

HISTO: 44565

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Blood Vessel	* Bone	* Bone Marrow	* Brain
* Epididymis	* Esophagus	* Eye	* Harderian Gland
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney
* Larynx	* Lung	* Lymph Node, Mesenteric	* Mammary Gland
* Parathyroid Gland	Pleura	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Lymph Node, Mandibular	* Lymph Node, Mediastinal
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OBSERVATIONS

* Adrenal Cortex		Vacuolization Cytoplasmic	Minimal
* Adrenal Medulla		Hyperplasia	Mild
* Heart		Cardiomyopathy	Mild
* Liver		Clear Cell Focus	
Lymph Node	Deep Cervical	Infiltration Cellular	Histiocyte, Mild
[ Infiltration Cellular TGLS = 2-16 ]			
* Lymph Node, Bronchial		Infiltration Cellular	Histiocyte, Mild
[ Infiltration Cellular TGLS = 1-15 ]			
* Nose	Goblet Cell	Hyperplasia	Mild
	Respirat Epith	Hyperplasia	Mild
		Inflammation	Suppurative, Mild
* Pancreas	Acinus	Atrophy	Moderate
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 3-10 ]			
* Testes	Bilateral, Interstit Cell	Adenoma	
[ Adenoma TGLS = 4-9 ]			

PRIMARY CAUSE OF DEATH

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

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Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:40

First Dose M/F: NA / NA

Lab: BNW

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<b>ANIMAL ID:</b> 4	<b>TRT#:</b> 1 <b>DOSE:</b> CONTROL	<b>SEX:</b> Male <b>DISP:</b> Terminal Sacrifice	<b>DAY ON TEST:</b> 726 <b>HISTO:</b> 44566
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**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Epididymis	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Kidney	* Larynx	* Lung	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Nose	* Pancreas	* Parathyroid Gland
Peritoneum	Pleura	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

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**MISSING**

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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**OBSERVATIONS**

* Adrenal Medulla		Hyperplasia	Mild
* Brain		Compression	Marked
* Liver		Basophilic Focus	
		Degeneration	Cystic, Mild
		Leukemia Mononuclear	
		Vacuolization Cytoplasmic	Moderate
[ Leukemia Mononuclear TGLS = 4-6+14 ]			
* Mammary Gland		Carcinoma	
[ Carcinoma TGLS = 2-15 ]			
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 1-10+1 ]			
* Skin	Subcut Tiss	Fibroma	
[ Fibroma TGLS = 5-16+17 ]			
* Spleen		Leukemia Mononuclear	
* Testes	Bilateral, Interstit Cell	Adenoma	
[ Adenoma TGLS = 3-9 ]			

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PRIMARY CAUSE OF DEATH

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

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Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:40

First Dose M/F: NA / NA

Lab: BNW

<b>ANIMAL ID:</b> 5	<b>TRT#:</b> 1 <b>DOSE:</b> CONTROL	<b>SEX:</b> Male <b>DISP:</b> Terminal Sacrifice	<b>DAY ON TEST:</b> 726 <b>HISTO:</b> 44567
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ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Mammary Gland	* Nose	* Pancreas	* Parathyroid Gland
Peritoneum	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Trachea	* Urinary Bladder		

MISSING

\* Lymph Node, Bronchial

OBSERVATIONS

* Adrenal Medulla		Pheochromocytoma Benign	
* Kidney		Nephropathy	Mild
* Liver		Basophilic Focus	
		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 8-6 ]			
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic, Mild
		Leukemia Mononuclear	
		Leukemia Mononuclear	
* Lymph Node, Mediastinal			
[ Leukemia Mononuclear TGLS = 5-3 ]			
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 4-10 ]			
Pleura		Inflammation	Chronic, Mild
* Preputial Gland		Carcinoma	
[ Carcinoma TGLS = 1,2-14+15 ]			
* Spleen		Leukemia Mononuclear	
* Testes	Bilateral, Interstit Cell	Adenoma	
[ Adenoma TGLS = 6,7-9 ]			

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01

**Test Type:** CHRONIC

**Route:** RESPIRATORY EXPOSURE WHOLE BODY

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Methyl isobutyl ketone

**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014

**Time Report Requested:** 22:41:40

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

**Lab:** BNW

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**ANIMAL ID:** 5

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:** 726

**DOSE:** CONTROL

**DISP:** Terminal Sacrifice

**HISTO:** 44567

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* Thyroid Gland

C Cell

Carcinoma

[ Carcinoma TGLS = 3-3 ]

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PRIMARY CAUSE OF DEATH

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:40

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 6

TRT#: 1

SEX: Male

DAY ON TEST: 713

DOSE: CONTROL

DISP: Moribund Sacrifice

HISTO: 44568

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lung
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Pancreas	* Parathyroid Gland	Peritoneum	Pleura
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Spleen	* Stomach, Glandular	* Testes
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

**MISSING**

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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**OBSERVATIONS**

* Kidney [ Nephropathy TGLS = 4-7 ]	Nephropathy	Marked
* Liver [ Vacuolization Cytoplasmic TGLS = 3-6 ]	Vacuolization Cytoplasmic	Moderate
* Pituitary Gland [ Adenoma TGLS = 1-10 ] [ Hemorrhage TGLS = 1-10 ]	Adenoma Hemorrhage	Marked
* Stomach, Forestomach [ Ulcer TGLS = 2-14 ]	Ulcer	Marked

PRIMARY CAUSE OF DEATH

- Pituitary Gland Adenoma

CONTRIBUTORY CAUSE OF DEATH

- Pituitary Gland Hemorrhage;Stomach;Forestomach Ulcer

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:40

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 7

TRT#: 1

SEX: Male

DAY ON TEST: 727

DOSE: CONTROL

DISP: Terminal Sacrifice

HISTO: 44569

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lung	* Lymph Node, Mesenteric	* Mammary Gland
* Nose	* Pancreas	* Parathyroid Gland	Peritoneum
Pleura	* Preputial Gland	* Salivary Glands	* Seminal Vesicle
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thyroid Gland
* Trachea	* Urinary Bladder		

**MISSING**

* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Thymus
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**OBSERVATIONS**

* Adrenal Medulla		Hyperplasia	Mild
* Heart		Cardiomyopathy	Moderate
	Myocardium	Mineralization	Mild
* Kidney		Nephropathy	Mild
* Liver		Clear Cell Focus	
* Pituitary Gland		Hyperplasia	Marked
* Prostate		Inflammation	Suppurative, Moderate
* Skin	Subcut Tiss	Fibroma	
[ Fibroma TGLS = 2-15 ]			
* Testes	Bilateral, Interstit Cell	Adenoma	
[ Adenoma TGLS = 3-9 ]			

PRIMARY CAUSE OF DEATH

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:40

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 8

TRT#: 1

SEX: Male

DAY ON TEST: 679

DOSE: CONTROL

DISP: Moribund Sacrifice

HISTO: 44570

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Nose	* Pancreas	* Parathyroid Gland
Peritoneum	Pleura	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Brain		Compression	Marked
* Kidney		Nephropathy	Mild
* Liver		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 3-6 ]			
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Mild
[ Leukemia Mononuclear TGLS = 4-4+5 ]		Leukemia Mononuclear	
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 1-10 ]			
* Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 2-14 ]			
* Testes	Interstit Cell	Adenoma	
	Germinal Epith	Atrophy	Marked
[ Atrophy TGLS = 5-9 ]			

PRIMARY CAUSE OF DEATH

- Pituitary Gland Adenoma

CONTRIBUTORY CAUSE OF DEATH

- Brain Compression;Spleen Leukemia Mononuclear

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

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Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:40

First Dose M/F: NA / NA

Lab: BNW

<b>ANIMAL ID:</b> 9	<b>TRT#:</b> 1 <b>DOSE:</b> CONTROL	<b>SEX:</b> Male <b>DISP:</b> Terminal Sacrifice	<b>DAY ON TEST:</b> 726 <b>HISTO:</b> 44571
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ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lung
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Pancreas	* Parathyroid Gland	Peritoneum	* Pituitary Gland
Pleura	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Kidney	Nephropathy	Mild
* Liver	Vacuolization Cytoplasmic	Minimal
[ Vacuolization Cytoplasmic TGLS = 3-14 ]		
Mesentery	Necrosis	Moderate
[ Necrosis TGLS = 1-14 ]		
* Testes	Bilateral, Interstit Cell	Adenoma
[ Adenoma TGLS = 2-9 ]		

PRIMARY CAUSE OF DEATH

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\* PROTOCOL REQUIRED TISSUE

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Species/Strain: Rat/F 344/N

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CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:40

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 10

TRT#: 1

SEX: Male

DAY ON TEST: 727

DOSE: CONTROL

DISP: Terminal Sacrifice

HISTO: 44572

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Nose	* Pancreas
* Parathyroid Gland	Peritoneum	Pleura	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Kidney	Pelvis, Transit Epithe	Hyperplasia Nephropathy Leukemia Mononuclear	Minimal Moderate
* Liver [ Leukemia Mononuclear TGLS = 3-6 ]			
* Lung [ Hyperplasia TGLS = 5-14 ]	Alveolar Epith Alveolus	Hyperplasia Infiltration Cellular	Minimal Histiocyte, Mild
* Pituitary Gland [ Adenoma TGLS = 2-10 ]		Adenoma	
* Skin [ Adenoma TGLS = 1-14 ]	Sebaceous GI	Adenoma	
* Spleen		Leukemia Mononuclear	
* Testes [ Adenoma TGLS = 4-9 ]	Interstit Cell	Adenoma	

PRIMARY CAUSE OF DEATH

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

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Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

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Date Report Requested: 10/16/2014

Time Report Requested: 22:41:40

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 11

TRT#: 1

SEX: Male

DAY ON TEST: 726

DOSE: CONTROL

DISP: Terminal Sacrifice

HISTO: 44573

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Lung	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Nose	* Pancreas
* Parathyroid Gland	Peritoneum	Pleura	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Trachea	* Urinary Bladder

MISSING

\* Lymph Node, Mandibular

OBSERVATIONS

* Kidney		Nephropathy	Minimal
* Larynx		Foreign Body	Marked
* Liver		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 2-6 ]			
* Lymph Node, Bronchial		Leukemia Mononuclear	
* Pituitary Gland		Adenoma	
* Skin		Cyst Epithelial Inclusion	Marked
[ Cyst Epithelial Inclusion TGLS = 1-15 ]			
* Spleen		Leukemia Mononuclear	
Note: atypical MCL; majority of neoplastic cells in spleen and liver are oval, appear to be spindling.			
[ Leukemia Mononuclear TGLS = 3,4-14 ]			
* Testes	Bilateral, Interstit Cell	Adenoma	
[ Adenoma TGLS = 5-9 ]			
* Thyroid Gland	C Cell	Adenoma	

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:40

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 12

TRT#: 1

SEX: Male

DAY ON TEST: 726

DOSE: CONTROL

DISP: Terminal Sacrifice

HISTO: 44574

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Blood Vessel	* Bone	* Bone Marrow	* Brain
* Epididymis	* Esophagus	* Harderian Gland	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Larynx	* Liver	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Nose	* Pancreas	* Parathyroid Gland
Peritoneum	Pleura	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Cortex		Vacuolization Cytoplasmic	Mild
* Adrenal Medulla		Hyperplasia	Mild
* Eye	Lens	Cataract	Moderate
* Heart		Cardiomyopathy	Mild
* Islets, Pancreatic		Carcinoma	
[ Carcinoma TGLS = 4-14 ]			
* Kidney		Nephropathy	Mild
* Lung		Fibrosarcoma	Metastatic (Skin)
[ Fibrosarcoma TGLS = 1-14+4+5 ]			
* Mammary Gland		Galactoceles	Mild
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 2-10 ]			
* Skin	Subcut Tiss	Fibrosarcoma	
[ Fibrosarcoma TGLS = 5-15 ]			
* Testes	Bilateral, Interstit Cell	Adenoma	
[ Adenoma TGLS = 3-9 ]			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:40

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 13

TRT#: 1

SEX: Male

DAY ON TEST: 726

DOSE: CONTROL

DISP: Terminal Sacrifice

HISTO: 44575

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lung	* Lymph Node, Mesenteric
* Mammary Gland	* Pancreas	* Parathyroid Gland	Peritoneum
Pleura	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
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OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Minimal
* Kidney		Nephropathy	Mild
* Liver		Basophilic Focus	
		Clear Cell Focus	
* Nose	Respirat Epith	Hyperplasia	Mild
* Pituitary Gland		Hyperplasia	Marked
* Spleen		Leukemia Mononuclear	
* Testes	Bilateral, Interstit Cell	Adenoma	
[ Adenoma TGLS = 1-9 ]			
Tongue	Epithelium	Hyperplasia	Mild
[ Hyperplasia TGLS = 2-14 ]			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:40

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 14

TRT#: 1

SEX: Male

DAY ON TEST: 629

DOSE: CONTROL

DISP: Moribund Sacrifice

HISTO: 44576

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lymph Node, Mediastinal	* Mammary Gland
* Nose	* Pancreas	* Parathyroid Gland	Pleura
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Stomach, Forestomach	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

\* Lymph Node, Mandibular

OBSERVATIONS

* Bone Marrow		Leukemia Mononuclear	
* Kidney		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 6-7 ]			
* Liver		Leukemia Mononuclear	
* Lung		Leukemia Mononuclear	
Lymph Node	Pancreatic	Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 7-14 ]			
* Lymph Node, Bronchial		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-3 ]			
* Lymph Node, Mesenteric		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 8-16 ]			
Mesentery		Necrosis	Mild
[ Necrosis TGLS = 2-17 ]			
* Pituitary Gland		Leukemia Mononuclear	
* Spleen		Fibrosis	Marked
		Hemorrhage	Marked
		Leukemia Mononuclear	
		Necrosis	Marked

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 97006-01  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Methyl isobutyl ketone  
**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014  
**Time Report Requested:** 22:41:40  
**First Dose M/F:** NA / NA  
**Lab:** BNW

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<b>ANIMAL ID:</b> 14	<b>TRT#:</b> 1	<b>SEX:</b> Male	<b>DAY ON TEST:</b> 629
	<b>DOSE:</b> CONTROL	<b>DISP:</b> Moribund Sacrifice	<b>HISTO:</b> 44576

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Fibrosis TGLS = 5-15 ]			
[ Hemorrhage TGLS = 4-14 ]			
[ Leukemia Mononuclear TGLS = 3-14 ]			
* Stomach, Glandular		Erosion	Mild
[ Erosion TGLS = 10-18 ]			
* Testes	Interstit Cell	Adenoma	
[ Adenoma TGLS = 9-9 ]			

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PRIMARY CAUSE OF DEATH	- Spleen	Leukemia Mononuclear
CONTRIBUTORY CAUSE OF DEATH	- Spleen	Hemorrhage

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:40

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 15

TRT#: 1

SEX: Male

DAY ON TEST: 687

DOSE: CONTROL

DISP: Moribund Sacrifice

HISTO: 44577

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Epididymis	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Pancreas	* Parathyroid Gland	Peritoneum	Pleura
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Trachea	* Urinary Bladder		

**MISSING**

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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**OBSERVATIONS**

* Adrenal Medulla		Hyperplasia	Moderate
* Brain		Hemorrhage	Moderate
* Kidney		Nephropathy	Minimal
* Liver		Hepatodiaphragmatic Nodule	Marked
		Leukemia Mononuclear	
	[ Hepatodiaphragmatic Nodule TGLS = 2-15 ]		
* Lung		Leukemia Mononuclear	
* Lymph Node, Mediastinal		Leukemia Mononuclear	
	[ Leukemia Mononuclear TGLS = 5-3 ]		
Mesentery		Necrosis	Moderate
	[ Necrosis TGLS = 4-16 ]		
* Pituitary Gland		Adenoma	
	[ Adenoma TGLS = 1-10 ]		
* Spleen		Leukemia Mononuclear	
	[ Leukemia Mononuclear TGLS = 3-14 ]		
* Testes	Bilateral, Interstit Cell	Adenoma	
	[ Adenoma TGLS = 6-9 ]		
* Thyroid Gland	C Cell	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Methyl isobutyl ketone  
**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014  
**Time Report Requested:** 22:41:40  
**First Dose M/F:** NA / NA  
**Lab:** BNW

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**ANIMAL ID:** 15

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:** 687

**DOSE:** CONTROL

**DISP:** Moribund Sacrifice

**HISTO:** 44577

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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PRIMARY CAUSE OF DEATH

- Spleen Leukemia Mononuclear

CONTRIBUTORY CAUSE OF DEATH

- Pituitary Gland Adenoma

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:40

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 16

TRT#: 1

SEX: Male

DAY ON TEST: 727

DOSE: CONTROL

DISP: Terminal Sacrifice

HISTO: 44578

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Esophagus	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lung	* Lymph Node, Bronchial	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Nose	* Parathyroid Gland
* Pituitary Gland	Pleura	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Trachea
* Urinary Bladder			

**MISSING**

\* Lymph Node, Mandibular

**OBSERVATIONS**

* Epididymis		Mesothelioma Malignant	
* Eye	Lens	Cataract	Moderate
* Kidney		Nephropathy	Mild
* Liver		Clear Cell Focus	
		Eosinophilic Focus	
Mesentery		Necrosis	Moderate
[ Necrosis TGLS = 4,5-15+16 ]			
* Pancreas	Acinus	Atrophy	Minimal
Peritoneum	Tunica Vaginal	Mesothelioma Malignant	
[ Mesothelioma Malignant TGLS = 3-14 ]			
* Testes	Bilateral, Interstit Cell	Adenoma	
		Mesothelioma Malignant	
[ Adenoma TGLS = 1,2-9 ]			
* Thyroid Gland	Follicle	Cyst	Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:40

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 17

TRT#: 1

SEX: Male

DAY ON TEST: 701

DOSE: CONTROL

DISP: Moribund Sacrifice

HISTO: 44579

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Larynx	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Nose
* Pancreas	* Parathyroid Gland	Peritoneum	Pleura
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Lymph Node, Mandibular	* Mammary Gland
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OBSERVATIONS

* Bone		Hyperostosis	Mild
[ Hyperostosis TGLS = 11-18 ]			
* Islets, Pancreatic		Carcinoma	
[ Carcinoma TGLS = 10-15 ]			
* Kidney	Renal Tubule	Cyst	
		Nephropathy	Mild
[ Cyst TGLS = 8-7 ]			
* Liver		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 7-6 ]			
* Lung		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 2,9-4+5+14 ]			
* Lymph Node, Bronchial		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-17 ]			
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 3-10 ]			
* Spleen		Hemorrhage	Marked
		Leukemia Mononuclear	
		Necrosis	Marked

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01

**Test Type:** CHRONIC

**Route:** RESPIRATORY EXPOSURE WHOLE BODY

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Methyl isobutyl ketone

**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014

**Time Report Requested:** 22:41:40

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

**Lab:** BNW

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**ANIMAL ID:** 17

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:** 701

**DOSE:** CONTROL

**DISP:** Moribund Sacrifice

**HISTO:** 44579

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Hemorrhage TGLS = 6-16 ]

[ Leukemia Mononuclear TGLS = 5-15 ]

\* Testes

Bilateral, Interstit Cell

Adenoma

[ Adenoma TGLS = 4-9 ]

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**PRIMARY CAUSE OF DEATH**

- Spleen Leukemia Mononuclear

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:40

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 18

TRT#: 1

SEX: Male

DAY ON TEST: 727

DOSE: CONTROL

DISP: Terminal Sacrifice

HISTO: 44580

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Blood Vessel	* Bone	* Bone Marrow	* Brain
* Epididymis	* Esophagus	* Eye	* Harderian Gland
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx
* Lung	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Nose	* Pancreas	* Parathyroid Gland	Peritoneum
Pleura	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Cortex		Vacuolization Cytoplasmic	Marked
* Adrenal Medulla		Hyperplasia	Moderate
* Heart		Cardiomyopathy	Mild
* Kidney	Renal Tubule	Hyperplasia	Mild
		Nephropathy	Mild
* Liver		Leukemia Mononuclear	
	[ Leukemia Mononuclear TGLS = 2-6 ]		
* Pituitary Gland		Adenoma	
	[ Adenoma TGLS = 1-10 ]		
* Spleen		Leukemia Mononuclear	

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:40

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 19

TRT#: 1

SEX: Male

DAY ON TEST: 702

DOSE: CONTROL

DISP: Moribund Sacrifice

HISTO: 44581

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Liver	* Lung
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Pancreas	* Parathyroid Gland	Peritoneum	Pleura
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Trachea	* Urinary Bladder	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Brain		Compression	Marked
		Hemorrhage	Marked
* Kidney		Nephropathy	Mild
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 1-10 ]			
* Testes	Bilateral, Interstit Cell	Adenoma	
[ Adenoma TGLS = 2-9 ]			
* Thyroid Gland	C Cell	Hyperplasia	Minimal

PRIMARY CAUSE OF DEATH

- Pituitary Gland Adenoma

CONTRIBUTORY CAUSE OF DEATH

- Brain Compression;Brain Hemorrhage

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:40

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 20

TRT#: 1

SEX: Male

DAY ON TEST: 726

DOSE: CONTROL

DISP: Terminal Sacrifice

HISTO: 44582

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Nose	* Pancreas	* Parathyroid Gland
Peritoneum	Pleura	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Medulla		Pheochromocytoma Benign	
* Kidney		Nephropathy	Minimal
* Liver		Basophilic Focus	
		Clear Cell Focus	
* Lung	Alveolar Epith	Hyperplasia	Minimal
	Alveolus	Infiltration Cellular	Histiocyte, Mild
[ Hyperplasia TGLS = 5-5 ]			
Mesentery		Necrosis	Mild
[ Necrosis TGLS = 3-14 ]			
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 1-10 ]			
* Spleen		Hemangioma	
[ Hemangioma TGLS = 4-14 ]			
* Testes	Interstit Cell	Adenoma	
[ Adenoma TGLS = 2-9 ]			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:40

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 21

TRT#: 1

SEX: Male

DAY ON TEST: 727

DOSE: CONTROL

DISP: Terminal Sacrifice

HISTO: 44583

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lung	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Nose	* Pancreas
* Parathyroid Gland	Peritoneum	Pleura	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

**MISSING**

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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**OBSERVATIONS**

* Eye	Lens	Cataract	Moderate
* Kidney		Nephropathy	Mild
* Liver		Clear Cell Focus	
* Pituitary Gland		Hyperplasia	Marked
[ Hyperplasia TGLS = 1-10 ]			
* Testes	Bilateral, Interstit Cell	Adenoma	
[ Adenoma TGLS = 2-9 ]			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:40

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 22

TRT#: 1

SEX: Male

DAY ON TEST: 726

DOSE: CONTROL

DISP: Terminal Sacrifice

HISTO: 44584

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Pancreas	* Parathyroid Gland	Peritoneum	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Lymph Node, Mandibular	* Lymph Node, Mediastinal
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OBSERVATIONS

* Brain		Compression	Mild
* Heart		Cardiomyopathy	Mild
* Kidney		Nephropathy	Mild
[ Nephropathy TGLS = 6-7 ]			
* Liver		Basophilic Focus	
[ Mixed Cell Focus TGLS = 7-14 ]		Mixed Cell Focus	
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Mild
* Lymph Node, Bronchial		Pigmentation	Moderate
[ Pigmentation TGLS = 3-14 ]			
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 4-10 ]			
Pleura		Fibrosis	Minimal
		Inflammation	Chronic, Minimal
* Skin		Cyst Epithelial Inclusion	Marked
[ Cyst Epithelial Inclusion TGLS = 1,2-14+15 ]			
* Testes	Interstit Cell	Adenoma	
	Germinal Epith	Atrophy	Marked

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Methyl isobutyl ketone  
**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014  
**Time Report Requested:** 22:41:40  
**First Dose M/F:** NA / NA  
**Lab:** BNW

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**ANIMAL ID:** 22

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:** 726

**DOSE:** CONTROL

**DISP:** Terminal Sacrifice

**HISTO:** 44584

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Adenoma TGLS = 5-9 ]

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PRIMARY CAUSE OF DEATH

-

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:40

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 23

TRT#: 1

SEX: Male

DAY ON TEST: 723

DOSE: CONTROL

DISP: Natural Death

HISTO: 44585

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lung	* Lymph Node, Mesenteric	* Mammary Gland
* Pancreas	* Parathyroid Gland	Peritoneum	Pleura
* Preputial Gland	* Salivary Glands	* Seminal Vesicle	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Lymph Node, Mandibular	* Lymph Node, Mediastinal
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OBSERVATIONS

* Brain		Hemorrhage	Marked
* Heart		Cardiomyopathy	Mild
* Kidney		Nephropathy	Mild
* Liver		Leukemia Mononuclear	
* Lymph Node, Bronchial		Angiectasis	Marked
[ Angiectasis TGLS = 1-14 ]			
* Nose		Inflammation	Suppurative, Mild
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 2-10 ]			
* Prostate		Inflammation	Suppurative, Moderate
* Spleen		Leukemia Mononuclear	
* Testes	Bilateral, Interstit Cell	Adenoma	
	Germinal Epith	Atrophy	Marked
[ Adenoma TGLS = 3,4-9 ]			

PRIMARY CAUSE OF DEATH

- Pituitary Gland Adenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:40

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 24

TRT#: 1

SEX: Male

DAY ON TEST: 726

DOSE: CONTROL

DISP: Terminal Sacrifice

HISTO: 44586

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Nose	* Pancreas	* Parathyroid Gland
Peritoneum	Pleura	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Trachea	* Urinary Bladder

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Medulla		Pheochromocytoma Benign	
* Kidney		Nephropathy	Minimal
* Liver		Leukemia Mononuclear	
* Lung	Alveolus	Emphysema	Moderate
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 4-10 ]			
* Spleen		Accessory Spleen	
[ Accessory Spleen TGLS = 3-6 ]		Leukemia Mononuclear	
* Testes	Interstit Cell	Adenoma	
[ Adenoma TGLS = 2-9 ]			
* Thyroid Gland	C Cell	Carcinoma	
[ Carcinoma TGLS = 1-3 ]			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:40

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 25

TRT#: 1

SEX: Male

DAY ON TEST: 624

DOSE: CONTROL

DISP: Moribund Sacrifice

HISTO: 44587

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Pancreas	* Parathyroid Gland	Peritoneum	Pleura
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
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OBSERVATIONS

* Brain		Hemorrhage	Marked
[ Hemorrhage TGLS = 4-1 ]			
* Kidney		Leukemia Mononuclear	
		Nephropathy	Mild
* Larynx		Foreign Body	Marked
* Liver		Hepatodiaphragmatic Nodule	Marked
		Leukemia Mononuclear	
[ Hepatodiaphragmatic Nodule TGLS = 7-6 ]			
* Lung		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 2-4+5 ]			
Lymph Node	Deep Cervical	Leukemia Mononuclear	
	Pancreatic	Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-16 ]			
[ Leukemia Mononuclear TGLS = 8-15 ]			
* Pituitary Gland		Adenoma	
		Leukemia Mononuclear	
[ Adenoma TGLS = 3-10 ]			
[ Leukemia Mononuclear TGLS = 3-10 ]			

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01

**Test Type:** CHRONIC

**Route:** RESPIRATORY EXPOSURE WHOLE BODY

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Methyl isobutyl ketone

**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014

**Time Report Requested:** 22:41:40

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

**Lab:** BNW

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**ANIMAL ID:** 25

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:** 624

**DOSE:** CONTROL

**DISP:** Moribund Sacrifice

**HISTO:** 44587

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* Spleen [ Leukemia Mononuclear TGLS = 6-14 ] Leukemia Mononuclear

\* Testes [ Adenoma TGLS = 5-9 ] Bilateral, Interstit Cell Adenoma

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PRIMARY CAUSE OF DEATH - Spleen Leukemia Mononuclear

CONTRIBUTORY CAUSE OF DEATH - Brain Hemorrhage

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\* PROTOCOL REQUIRED TISSUE



Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:40

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 26

TRT#: 1

SEX: Male

DAY ON TEST: 727

DOSE: CONTROL

DISP: Terminal Sacrifice

HISTO: 44588

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Nose	* Parathyroid Gland	Peritoneum	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Minimal
* Kidney		Nephropathy	Marked
[ Nephropathy TGLS = 5-7 ]			
* Liver		Basophilic Focus	
		Clear Cell Focus	
* Lung	Interstitialium	Fibrosis	Mild
	Alveolus	Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic, Mild
[ Fibrosis TGLS = 6-14 ]			
* Mammary Gland		Carcinoma	
[ Carcinoma TGLS = 2-14 ]			
Mesentery		Necrosis	Moderate
[ Necrosis TGLS = 3-15 ]			
* Pancreas	Acinus	Atrophy	Moderate
* Pituitary Gland		Hyperplasia	Marked
Pleura		Inflammation	Chronic, Mild
[ Inflammation TGLS = 6-14 ]			
* Preputial Gland		Hyperplasia	Marked

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01

**Test Type:** CHRONIC

**Route:** RESPIRATORY EXPOSURE WHOLE BODY

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Methyl isobutyl ketone

**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014

**Time Report Requested:** 22:41:40

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

**Lab:** BNW

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**ANIMAL ID:** 26

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:** 727

**DOSE:** CONTROL

**DISP:** Terminal Sacrifice

**HISTO:** 44588

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Hyperplasia TGLS = 1-15 ]

\* Testes

Bilateral, Interstit Cell

Adenoma

[ Adenoma TGLS = 4-9 ]

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**PRIMARY CAUSE OF DEATH**

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:40

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 27

TRT#: 1

SEX: Male

DAY ON TEST: 687

DOSE: CONTROL

DISP: Moribund Sacrifice

HISTO: 44589

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Blood Vessel	* Bone	* Bone Marrow	* Brain
* Epididymis	* Esophagus	* Eye	* Harderian Gland
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx
* Mammary Gland	* Nose	* Pancreas	* Parathyroid Gland
Peritoneum	* Pituitary Gland	Pleura	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Cortex		Vacuolization Cytoplasmic	Minimal
* Adrenal Medulla		Leukemia Mononuclear	
	Bilateral	Pheochromocytoma Benign	
* Heart		Leukemia Mononuclear	
	[ Leukemia Mononuclear TGLS = 1-14 ]		
* Kidney		Leukemia Mononuclear	
	[ Leukemia Mononuclear TGLS = 12-18 ]	Nephropathy	Mild
* Liver		Leukemia Mononuclear	
	[ Leukemia Mononuclear TGLS = 8-6 ]		
* Lung		Hemorrhage	Moderate
	Alveolus	Infiltration Cellular	Histiocyte, Mild
		Leukemia Mononuclear	
	[ Hemorrhage TGLS = 2-14 ]		
	[ Leukemia Mononuclear TGLS = 10-4+5 ]		
Lymph Node	Pancreatic	Leukemia Mononuclear	
	[ Leukemia Mononuclear TGLS = 7-15 ]		
* Lymph Node, Mediastinal		Leukemia Mononuclear	
* Lymph Node, Mesenteric		Leukemia Mononuclear	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01

**Test Type:** CHRONIC

**Route:** RESPIRATORY EXPOSURE WHOLE BODY

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Methyl isobutyl ketone

**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014

**Time Report Requested:** 22:41:40

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

**Lab:** BNW

**ANIMAL ID:** 27

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:** 687

**DOSE:** CONTROL

**DISP:** Moribund Sacrifice

**HISTO:** 44589

**ORGAN AND ACCOUNTABLE SITE STATUS**

[ Leukemia Mononuclear TGLS = 9-8 ]			
* Spleen		Leukemia Mononuclear Necrosis	Marked
[ Leukemia Mononuclear TGLS = 5-15 ]			
[ Necrosis TGLS = 6-16 ]			
* Stomach, Forestomach		Ulcer	Moderate
* Testes	Interstit Cell Germinal Epith	Adenoma Atrophy	Moderate
[ Adenoma TGLS = 4-9 ]			
[ Atrophy TGLS = 3-9 ]			
* Urinary Bladder	Transit Epithe	Papilloma	
[ Papilloma TGLS = 11-17 ]			

PRIMARY CAUSE OF DEATH - Spleen Leukemia Mononuclear

CONTRIBUTORY CAUSE OF DEATH - Spleen Necrosis

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:40

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 28

TRT#: 1

SEX: Male

DAY ON TEST: 592

DOSE: CONTROL

DISP: Natural Death

HISTO: 44590

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Harderian Gland	* Islets, Pancreatic	* Kidney	Lacrimal Gland
* Larynx	* Liver	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Nose	* Pancreas	* Parathyroid Gland
Peritoneum	* Pituitary Gland	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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AUTO PRECLUDES DIAG.

* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum		

OBSERVATIONS

* Eye	Lens	Cataract	Minimal
* Heart	Atrium	Schwannoma Malignant Thrombosis	Marked
	[ Schwannoma Malignant TGLS = 1-17+6 ]		
	[ Thrombosis TGLS = 1-17 ]		
* Lung	Mediastinum	Schwannoma Malignant Schwannoma Malignant	Metastatic (Heart) Metastatic (Heart)
	[ Schwannoma Malignant TGLS = 3-14+15+16+3 ]		
Pleura		Schwannoma Malignant	Metastatic (Heart)
	[ Schwannoma Malignant TGLS = 4-3 ]		
Skeletal Muscle		Schwannoma Malignant	Metastatic (Heart)
	[ Schwannoma Malignant TGLS = 4-3 ]		
* Spleen		Schwannoma Malignant	Metastatic (Heart)
* Testes	Bilateral, Interstit Cell	Adenoma	
	[ Adenoma TGLS = 2-9 ]		
* Thymus		Schwannoma Malignant	Metastatic (Heart)

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01

**Test Type:** CHRONIC

**Route:** RESPIRATORY EXPOSURE WHOLE BODY

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Methyl isobutyl ketone

**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014

**Time Report Requested:** 22:41:40

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

**Lab:** BNW

---

**ANIMAL ID:** 28

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:** 592

**DOSE:** CONTROL

**DISP:** Natural Death

**HISTO:** 44590

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Schwannoma Malignant TGLS = 3-14+15+16 ]

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PRIMARY CAUSE OF DEATH

- Heart Schwannoma Malignant

CONTRIBUTORY CAUSE OF DEATH

- Heart Atrium Thrombosis

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:40

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 29

TRT#: 1

SEX: Male

DAY ON TEST: 726

DOSE: CONTROL

DISP: Terminal Sacrifice

HISTO: 44591

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Larynx	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Nose
* Pancreas	* Parathyroid Gland	Peritoneum	Pleura
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Medulla		Atrophy	Marked
		Pheochromocytoma Benign	
[ Atrophy TGLS = 4-7 ]			
* Islets, Pancreatic		Carcinoma	
[ Carcinoma TGLS = 3-14 ]			
* Kidney	Papilla	Mineralization	Minimal
		Nephropathy	Mild
* Liver		Clear Cell Focus	
		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 5-6 ]			
* Lung		Leukemia Mononuclear	
* Mammary Gland		Fibroadenoma	
		Galactocele	Marked
[ Fibroadenoma TGLS = 6-15 ]			
[ Galactocele TGLS = 6-15 ]			
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 1-10 ]			
* Spleen		Leukemia Mononuclear	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Methyl isobutyl ketone  
**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014  
**Time Report Requested:** 22:41:40  
**First Dose M/F:** NA / NA  
**Lab:** BNW

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**ANIMAL ID:** 29

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:** 726

**DOSE:** CONTROL

**DISP:** Terminal Sacrifice

**HISTO:** 44591

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Leukemia Mononuclear TGLS = 2-14 ]

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PRIMARY CAUSE OF DEATH

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\* PROTOCOL REQUIRED TISSUE



Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:40

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 30

TRT#: 1

SEX: Male

DAY ON TEST: 726

DOSE: CONTROL

DISP: Terminal Sacrifice

HISTO: 44592

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Larynx	* Lung	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Nose	* Pancreas	* Parathyroid Gland	Peritoneum
Pleura	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Eye	Lens	Cataract	Moderate
* Islets, Pancreatic		Adenoma	
* Kidney		Nephropathy	Mild
* Liver		Basophilic Focus	
* Mammary Gland		Fibroadenoma	
		Galactocele	Marked
[ Galactocele TGLS = 1-16 ]			
Mesentery		Necrosis	Moderate
[ Necrosis TGLS = 4-14 ]			
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 2-10 ]			
* Testes	Bilateral, Interstit Cell	Adenoma	
	Germinal Epith	Atrophy	Moderate
[ Adenoma TGLS = 5-9 ]			
[ Atrophy TGLS = 6-9 ]			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:40

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 31

TRT#: 1

SEX: Male

DAY ON TEST: 727

DOSE: CONTROL

DISP: Terminal Sacrifice

HISTO: 44593

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Harderian Gland
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx
* Lung	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Nose	* Pancreas	* Parathyroid Gland	Peritoneum
Pleura	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Cortex		Vacuolization Cytoplasmic	Minimal
* Eye	Lens	Cataract	Moderate
* Heart		Cardiomyopathy	Mild
* Kidney		Nephropathy	Minimal
* Liver		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 4-6 ]			
* Pituitary Gland		Adenoma	
		Cyst	Marked
[ Cyst TGLS = 2-10 ]			
* Skin	Subcut Tiss	Fibroma	
[ Fibroma TGLS = 1-14+15 ]			
* Spleen		Leukemia Mononuclear	
* Testes	Bilateral, Interstit Cell	Adenoma	
	Germinal Epith	Atrophy	Marked
[ Adenoma TGLS = 3-9 ]			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:40

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 32

TRT#: 1

SEX: Male

DAY ON TEST: 727

DOSE: CONTROL

DISP: Terminal Sacrifice

HISTO: 44594

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Larynx	* Liver
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Parathyroid Gland	Peritoneum	Pleura	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Cortex [ Atrophy TGLS = 4-7 ]		Atrophy	Marked
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Minimal
* Pancreas	Acinus	Atrophy	Minimal
* Pituitary Gland [ Atrophy TGLS = 1-10 ]		Atrophy	Marked
* Testes [ Adenoma TGLS = 2-9 ] [ Atrophy TGLS = 3-9 ]	Interstit Cell Germinal Epith	Adenoma Atrophy	Marked

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:40

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 33

TRT#: 1

SEX: Male

DAY ON TEST: 726

DOSE: CONTROL

DISP: Terminal Sacrifice

HISTO: 44595

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lung	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Nose	* Pancreas	* Parathyroid Gland
Peritoneum	Pleura	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Trachea	* Urinary Bladder

MISSING

\* Lymph Node, Mandibular

OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Marked
* Heart		Cardiomyopathy	Mild
* Kidney		Nephropathy	Mild
* Liver		Basophilic Focus	
	Bile Duct	Cyst	Moderate
		Hepatocellular Adenoma	
[ Cyst TGLS = 6-6 ]			
* Lymph Node, Bronchial		Ectasia	Marked
[ Ectasia TGLS = 2-14 ]			
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 3-10 ]			
* Spleen		Leukemia Mononuclear	
* Testes	Bilateral, Interstit Cell	Adenoma	
[ Adenoma TGLS = 4,5-9 ]			
* Thyroid Gland	Follicular Cel	Carcinoma	
[ Carcinoma TGLS = 1-3 ]			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:40

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 34

TRT#: 1

SEX: Male

DAY ON TEST: 727

DOSE: CONTROL

DISP: Terminal Sacrifice

HISTO: 44596

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex           | * Adrenal Medulla         | Blood Vessel                | * Bone                   |
| * Bone Marrow              | * Brain                   | * Epididymis                | * Esophagus              |
| * Eye                      | * Harderian Gland         | * Heart                     | * Intestine Large, Cecum |
| * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic      | * Larynx                    | * Liver                  |
| * Lung                     | * Lymph Node, Mediastinal | * Lymph Node, Mesenteric    | * Mammary Gland          |
| * Nose                     | * Pancreas                | * Parathyroid Gland         | Peritoneum               |
| Pleura                     | * Preputial Gland         | * Prostate                  | * Salivary Glands        |
| * Seminal Vesicle          | * Skin                    | * Spleen                    | * Stomach, Forestomach   |
| * Stomach, Glandular       | * Thymus                  | * Thyroid Gland             | * Trachea                |
| * Urinary Bladder          |                           |                             |                          |

MISSING

- |                         |                          |
|-------------------------|--------------------------|
| * Lymph Node, Bronchial | * Lymph Node, Mandibular |
|-------------------------|--------------------------|

OBSERVATIONS

- |                            |                           |             |        |
|----------------------------|---------------------------|-------------|--------|
| * Kidney                   |                           | Nephropathy | Marked |
| [ Nephropathy TGLS = 2-7 ] |                           |             |        |
| * Pituitary Gland          |                           | Adenoma     |        |
| [ Adenoma TGLS = 1-10 ]    |                           |             |        |
| * Testes                   | Bilateral, Interstit Cell | Adenoma     |        |
| [ Adenoma TGLS = 3-15+9 ]  |                           |             |        |

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:40

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 35

TRT#: 1

SEX: Male

DAY ON TEST: 588

DOSE: CONTROL

DISP: Moribund Sacrifice

HISTO: 44597

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Blood Vessel	* Bone	* Bone Marrow	* Brain
* Epididymis	* Esophagus	* Eye	* Harderian Gland
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney
* Larynx	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Pancreas	* Parathyroid Gland	Peritoneum	* Preputial Gland
* Salivary Glands	* Seminal Vesicle	* Skin	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Lymph Node, Mandibular	* Lymph Node, Mediastinal
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OBSERVATIONS

* Adrenal Cortex		Vacuolization Cytoplasmic	Mild
* Adrenal Medulla		Hyperplasia	Minimal
* Heart	Atrium	Thrombosis	Marked
[ Thrombosis TGLS = 2-6 ]			
* Liver	Centrilobular	Leukemia Mononuclear	
		Necrosis	Mild
		Vacuolization Cytoplasmic	Moderate
[ Necrosis TGLS = 5-6 ]			
* Lung	Alveolus	Emphysema	Mild
		Hemorrhage	Mild
		Ectasia	Marked
* Lymph Node, Bronchial		Adenoma	
[ Ectasia TGLS = 1-3 ]			
* Pituitary Gland		Fibrosis	Moderate
Pleura		Inflammation	Chronic, Mild
		Inflammation	Suppurative, Moderate
* Prostate		Fibrosis	Mild
* Spleen			
[ Fibrosis TGLS = 4-6 ]			
* Stomach, Forestomach		Ulcer	Marked

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01

**Test Type:** CHRONIC

**Route:** RESPIRATORY EXPOSURE WHOLE BODY

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Methyl isobutyl ketone

**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014

**Time Report Requested:** 22:41:41

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

**Lab:** BNW

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**ANIMAL ID:** 35

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:** 588

**DOSE:** CONTROL

**DISP:** Moribund Sacrifice

**HISTO:** 44597

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Ulcer TGLS = 6-14 ]

\* Testes

Interstitial Cell

Hyperplasia

Moderate

Zymbal's Gland

Carcinoma

[ Carcinoma TGLS = 3-15+16 ]

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PRIMARY CAUSE OF DEATH

- Heart Atrium Thrombosis

CONTRIBUTORY CAUSE OF DEATH

- Stomach;Forestomach Ulcer;Zymbal's Gland Carcinoma

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 36

TRT#: 1

SEX: Male

DAY ON TEST: 727

DOSE: CONTROL

DISP: Terminal Sacrifice

HISTO: 44598

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Mammary Gland	* Pancreas	* Parathyroid Gland
Peritoneum	* Pituitary Gland	Pleura	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	Tissue NOS
* Trachea	* Urinary Bladder		

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Medulla		Hemorrhage	Marked
		Leukemia Mononuclear	
* Eye	Lens	Cataract	Moderate
* Kidney		Leukemia Mononuclear	
		Nephropathy	Minimal
[ Leukemia Mononuclear TGLS = 9-17 ]			
* Liver		Eosinophilic Focus	
		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 8-6 ]			
* Lung		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 11-5 ]			
Lymph Node	Deep Cervical	Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-14 ]			
* Lymph Node, Mediastinal		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 2-3 ]			
* Lymph Node, Mesenteric		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 10-18 ]			
* Nose	Respirat Epith	Hyperplasia	Mild

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 97006-01

**Test Type:** CHRONIC

**Route:** RESPIRATORY EXPOSURE WHOLE BODY

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Methyl isobutyl ketone

**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014

**Time Report Requested:** 22:41:41

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

**Lab:** BNW

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**ANIMAL ID:** 36

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:** 727

**DOSE:** CONTROL

**DISP:** Terminal Sacrifice

**HISTO:** 44598

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* Preputial Gland

[ Cyst TGLS = 3-9 ]

Inflammation

Cyst

Suppurative, Mild

Mild

\* Spleen

[ Leukemia Mononuclear TGLS = 6,7,12-15+16 ]

Leukemia Mononuclear

\* Testes

Interstit Cell

Adenoma

Germinal Epith

Atrophy

Marked

[ Adenoma TGLS = 4-9 ]

[ Atrophy TGLS = 5-9 ]

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PRIMARY CAUSE OF DEATH

-

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 37

TRT#: 1

SEX: Male

DAY ON TEST: 702

DOSE: CONTROL

DISP: Moribund Sacrifice

HISTO: 44599

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Liver	* Lung
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Pancreas	* Parathyroid Gland	Peripheral Nerve	Peritoneum
Pleura	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	Skeletal Muscle	* Skin	Spinal Cord
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Eye		Carcinoma	Metastatic (Oral Mucosa)
[ Carcinoma TGLS = 2-13 ]			
* Kidney		Nephropathy	Mild
Oral Mucosa		Squamous Cell Carcinoma	
* Pituitary Gland		Adenoma	
		Hemorrhage	Moderate
[ Adenoma TGLS = 3-10 ]			
* Testes	Interstit Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH - Oral Mucosa Squamous Cell Carcinoma

CONTRIBUTORY CAUSE OF DEATH - Eye Carcinoma Oral Mucosa; Pituitary Gland Adenoma

Animal Note: History of seizure; pituitary adenoma and oral cavity ca metastatic to eye may have contributed to seizure activity.

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 38

TRT#: 1

SEX: Male

DAY ON TEST: 671

DOSE: CONTROL

DISP: Moribund Sacrifice

HISTO: 44600

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Blood Vessel	* Bone	* Bone Marrow	* Brain
* Epididymis	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lymph Node, Mediastinal	* Mammary Gland	* Nose
* Pancreas	* Parathyroid Gland	Peritoneum	Pleura
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Cortex		Vacuolization Cytoplasmic	Mild
* Adrenal Medulla		Hyperplasia	Moderate
		Pheochromocytoma Benign	
* Kidney		Leukemia Mononuclear	
		Nephropathy	Mild
* Liver		Leukemia Mononuclear	
		Necrosis	Marked
		[ Leukemia Mononuclear TGLS = 5-6 ]	
		[ Necrosis TGLS = 9-15 ]	
* Lung		Leukemia Mononuclear	
Lymph Node	Pancreatic	Ectasia	Marked
		[ Ectasia TGLS = 4-15 ]	
* Lymph Node, Mesenteric		Leukemia Mononuclear	
		[ Leukemia Mononuclear TGLS = 8-8 ]	
Oral Mucosa	Pharyngeal	Hyperplasia	Squamous, Marked
		[ Hyperplasia TGLS = 10-12 ]	
* Pituitary Gland		Adenoma	
		[ Adenoma TGLS = 2-10 ]	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Methyl isobutyl ketone  
**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014  
**Time Report Requested:** 22:41:41  
**First Dose M/F:** NA / NA  
**Lab:** BNW

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<b>ANIMAL ID:</b> 38	<b>TRT#:</b> 1 <b>DOSE:</b> CONTROL	<b>SEX:</b> Male <b>DISP:</b> Moribund Sacrifice	<b>DAY ON TEST:</b> 671 <b>HISTO:</b> 44600
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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Spleen [ Leukemia Mononuclear TGLS = 3-14 ]		Leukemia Mononuclear	
* Testes [ Adenoma TGLS = 6-9 ] [ Atrophy TGLS = 7-9 ]	Interstit Cell Germinal Epith	Adenoma Atrophy	Moderate
Tooth [ Inflammation TGLS = 10-12 ]	Peridont Tiss	Inflammation	Marked

---

PRIMARY CAUSE OF DEATH - Spleen Leukemia Mononuclear

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 39

TRT#: 1

SEX: Male

DAY ON TEST: 505

DOSE: CONTROL

DISP: Moribund Sacrifice

HISTO: 44601

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Liver	* Lung
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland
Peritoneum	Pleura	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

**MISSING**

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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**OBSERVATIONS**

* Brain		Compression	Marked
* Kidney		Nephropathy	Mild
* Mammary Gland		Galactoceles	Minimal
[ Galactoceles TGLS = 4-15 ]			
* Nose		Foreign Body	Moderate
	Respirat Epith	Hyperplasia	Moderate
		Inflammation	Suppurative, Mild
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 2-10 ]			
* Skin		Hyperkeratosis	Marked
	Sebaceous GI	Hyperplasia	Moderate
[ Hyperkeratosis TGLS = 3-14 ]			

PRIMARY CAUSE OF DEATH

- Pituitary Gland Adenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 40

TRT#: 1

SEX: Male

DAY ON TEST: 727

DOSE: CONTROL

DISP: Terminal Sacrifice

HISTO: 44602

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Nose	* Pancreas
* Parathyroid Gland	Peritoneum	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Thyimus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

\* Lymph Node, Mandibular

OBSERVATIONS

* Kidney		Nephropathy	Mild
* Liver		Leukemia Mononuclear	
* Lung	Interstitialium	Fibrosis	Moderate
	Alveolus	Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic, Moderate
		Leukemia Mononuclear	
[ Fibrosis TGLS = 7-18 ]			
* Lymph Node, Bronchial		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 3-16 ]			
Mesentery		Necrosis	Moderate
[ Necrosis TGLS = 5-17 ]			
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 4-10 ]			
Pleura		Inflammation	Chronic, Mild
* Skin		Cyst Epithelial Inclusion	
	Subcut Tiss	Fibroma	
[ Cyst Epithelial Inclusion TGLS = 2-15 ]			

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01

**Test Type:** CHRONIC

**Route:** RESPIRATORY EXPOSURE WHOLE BODY

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Methyl isobutyl ketone

**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014

**Time Report Requested:** 22:41:41

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

**Lab:** BNW

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**ANIMAL ID:** 40

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:** 727

**DOSE:** CONTROL

**DISP:** Terminal Sacrifice

**HISTO:** 44602

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Fibroma TGLS = 1-14 ]

\* Spleen

Leukemia Mononuclear

[ Leukemia Mononuclear TGLS = 6-19 ]

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**PRIMARY CAUSE OF DEATH**

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 41

TRT#: 1

SEX: Male

DAY ON TEST: 679

DOSE: CONTROL

DISP: Moribund Sacrifice

HISTO: 44603

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lung	* Lymph Node, Mesenteric	* Mammary Gland
* Nose	* Pancreas	* Parathyroid Gland	Peritoneum
Pleura	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Brain	Compression	Marked
* Heart	Cardiomyopathy	Minimal
* Kidney	Nephropathy	Minimal
* Liver	Basophilic Focus	
	Leukemia Mononuclear	
* Lymph Node, Mediastinal	Hemorrhage	Marked
[ Hemorrhage TGLS = 2-3 ]		
* Pituitary Gland	Adenoma	
[ Adenoma TGLS = 1-10 ]		
* Spleen	Leukemia Mononuclear	
* Testes	Germinal Epith	Atrophy
		Marked

PRIMARY CAUSE OF DEATH

- Pituitary Gland Adenoma

CONTRIBUTORY CAUSE OF DEATH

- Brain Compression

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 42

TRT#: 1

SEX: Male

DAY ON TEST: 492

DOSE: CONTROL

DISP: Moribund Sacrifice

HISTO: 44604

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Larynx
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Pancreas	* Parathyroid Gland	Peritoneum	Pleura
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Liver		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 5-6 ]			
* Lung		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 6-4+5 ]			
Mesentery		Necrosis	Moderate
[ Necrosis TGLS = 3-16 ]			
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 2-10 ]			
* Spleen		Accessory Spleen	
[ Leukemia Mononuclear TGLS = 4-14 ]		Leukemia Mononuclear	
* Testes	Interstit Cell	Adenoma	
[ Adenoma TGLS = 7-9 ]			

PRIMARY CAUSE OF DEATH - Spleen Leukemia Mononuclear

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 43

TRT#: 1

SEX: Male

DAY ON TEST: 727

DOSE: CONTROL

DISP: Terminal Sacrifice

HISTO: 44605

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lung	* Lymph Node, Mediastinal	* Mammary Gland
* Nose	* Pancreas	* Parathyroid Gland	Peritoneum
Pleura	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Medulla		Pheochromocytoma Benign	
[ Pheochromocytoma Benign TGLS = 3-7 ]			
* Heart		Cardiomyopathy	Mild
* Kidney		Nephropathy	Moderate
* Liver		Clear Cell Focus	
Lymph Node	Pancreatic	Ectasia	Moderate
[ Ectasia TGLS = 2-14 ]			
* Lymph Node, Mesenteric		Hyperplasia	Lymphoid, Marked
* Pituitary Gland		Adenoma	
* Testes	Bilateral, Interstit Cell	Adenoma	
[ Adenoma TGLS = 1-9 ]			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 44

TRT#: 1

SEX: Male

DAY ON TEST: 726

DOSE: CONTROL

DISP: Terminal Sacrifice

HISTO: 44606

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lung	* Lymph Node, Mesenteric
* Mammary Gland	* Nose	* Pancreas	* Parathyroid Gland
Peritoneum	Pleura	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
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OBSERVATIONS

* Heart		Cardiomyopathy	Minimal
* Kidney		Nephropathy	Mild
* Liver		Basophilic Focus	
		Clear Cell Focus	
* Pituitary Gland		Hemorrhage	Moderate
		Hyperplasia	Moderate
[ Hemorrhage TGLS = 1-10 ]			
* Testes	Bilateral, Interstit Cell	Adenoma	
[ Adenoma TGLS = 2-9 ]			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 45

TRT#: 1

SEX: Male

DAY ON TEST: 468

DOSE: CONTROL

DISP: Natural Death

HISTO: 44607

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lymph Node, Mesenteric
* Mammary Gland	* Nose	* Pancreas	Peritoneum
Pleura	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Parathyroid Gland
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OBSERVATIONS

* Kidney		Leukemia Mononuclear	
* Liver		Leukemia Mononuclear	
* Lung		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 4-4+5 ]			
* Lymph Node, Mediastinal		Leukemia Mononuclear	
* Pituitary Gland		Hyperplasia	Moderate
* Spleen		Leukemia Mononuclear	
		Necrosis	Marked
[ Leukemia Mononuclear TGLS = 2-14 ]			
[ Necrosis TGLS = 3-14 ]			
* Testes	Interstit Cell	Adenoma	
	Interstit Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH - Spleen Leukemia Mononuclear

CONTRIBUTORY CAUSE OF DEATH - Spleen Necrosis

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 46

TRT#: 1

SEX: Male

DAY ON TEST: 726

DOSE: CONTROL

DISP: Terminal Sacrifice

HISTO: 44608

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Larynx	* Lung	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Nose	* Pancreas
* Parathyroid Gland	Peritoneum	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

\* Lymph Node, Mandibular

OBSERVATIONS

* Islets, Pancreatic [ Carcinoma TGLS = 4-14 ]		Carcinoma	
* Kidney		Nephropathy	Moderate
* Liver		Basophilic Focus	
* Lymph Node, Bronchial [ Ectasia TGLS = 1-14 ]		Ectasia	Moderate
* Pituitary Gland [ Adenoma TGLS = 2-10 ]		Adenoma	
Pleura [ Inflammation TGLS = 5-5 ]		Inflammation	Chronic, Mild
* Testes [ Adenoma TGLS = 3-9 ]	Bilateral, Interstit Cell	Adenoma	

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 47

TRT#: 1

SEX: Male

DAY ON TEST: 554

DOSE: CONTROL

DISP: Natural Death

HISTO: 44609

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Rectum	* Larynx
* Liver	* Lung	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Nose	* Pancreas	* Parathyroid Gland
Peritoneum	Pleura	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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AUTO PRECLUDES DIAG.

* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum			

OBSERVATIONS

* Brain		Compression	Moderate
		Hemorrhage	Marked
* Islets, Pancreatic		Adenoma	
* Kidney		Nephropathy	Mild
* Pituitary Gland		Adenoma	
		Hemorrhage	Marked
[ Adenoma TGLS = 1-10 ]			
* Testes	Interstit Cell	Adenoma	
[ Adenoma TGLS = 2-9 ]			

PRIMARY CAUSE OF DEATH

- Pituitary Gland Adenoma

CONTRIBUTORY CAUSE OF DEATH

- Brain Hemorrhage;Pituitary Gland Hemorrhage

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 48

TRT#: 1

SEX: Male

DAY ON TEST: 727

DOSE: CONTROL

DISP: Terminal Sacrifice

HISTO: 44610

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lung	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Nose	* Pancreas	* Parathyroid Gland
Peritoneum	Pleura	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Trachea
* Urinary Bladder			

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Moderate
* Heart		Cardiomyopathy	Moderate
* Kidney		Nephropathy	Mild
* Liver		Clear Cell Focus	
* Pituitary Gland		Hyperplasia	Marked
[ Hyperplasia TGLS = 1-10 ]			
* Testes	Bilateral, Interstit Cell	Adenoma	
[ Adenoma TGLS = 2,3-9 ]			
* Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 49

TRT#: 1

SEX: Male

DAY ON TEST: 727

DOSE: CONTROL

DISP: Terminal Sacrifice

HISTO: 44611

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Nose	* Pancreas	* Parathyroid Gland
Peritoneum	Pleura	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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INSUFFICIENT TISSUE

\* Eye

OBSERVATIONS

* Kidney		Nephropathy	Moderate
[ Nephropathy TGLS = 2-7 ]			
* Liver		Clear Cell Focus	
* Lung	Alveolar Epith	Hyperplasia	Minimal
	Alveolar Epith	Metaplasia	Squamous, Minimal
* Pituitary Gland		Hyperplasia	Marked
* Testes	Bilateral, Interstit Cell	Adenoma	
[ Adenoma TGLS = 1-9 ]			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 50

TRT#: 1

SEX: Male

DAY ON TEST: 726

DOSE: CONTROL

DISP: Terminal Sacrifice

HISTO: 44612

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lung	* Lymph Node, Mesenteric
* Mammary Gland	* Nose	* Pancreas	* Parathyroid Gland
Peripheral Nerve	Peritoneum	Pleura	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	Skeletal Muscle
* Skin	Spinal Cord	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
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OBSERVATIONS

* Heart	Cardiomyopathy	Moderate
* Kidney	Nephropathy	Mild
* Liver	Clear Cell Focus	
	Hepatodiaphragmatic Nodule	Marked
[ Hepatodiaphragmatic Nodule TGLS = 3-14 ]		
Mesentery	Necrosis	Moderate
[ Necrosis TGLS = 1-14 ]		
* Pituitary Gland	Adenoma	
[ Adenoma TGLS = 4-10 ]		
* Spleen	Leukemia Mononuclear	
* Testes	Bilateral, Interstit Cell	Adenoma
[ Adenoma TGLS = 2-9 ]		

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 201

TRT#: 3

SEX: Male

DAY ON TEST: 621

DOSE: 450 PPM

DISP: Moribund Sacrifice

HISTO: 44863

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lung	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Pancreas	* Parathyroid Gland
Peritoneum	Pleura	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

\* Lymph Node, Mandibular

OBSERVATIONS

* Brain		Compression	Mild
* Kidney	Papilla	Mineralization	Minimal
		Nephropathy	Mild
* Liver		Vacuolization Cytoplasmic	Mild
[ Vacuolization Cytoplasmic TGLS = 4-6 ]			
* Lymph Node, Bronchial		Ectasia	Marked
[ Ectasia TGLS = 2-3 ]			
Mesentery		Necrosis	Moderate
[ Necrosis TGLS = 5-14 ]			
* Nose		Inflammation	Suppurative, Minimal
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 3-10 ]			
* Preputial Gland		Hyperplasia	Moderate
[ Hyperplasia TGLS = 1-9 ]			
* Testes	Interstit Cell	Adenoma	
[ Adenoma TGLS = 6-9 ]			

PRIMARY CAUSE OF DEATH

- Pituitary Gland Adenoma

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Methyl isobutyl ketone  
**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014  
**Time Report Requested:** 22:41:41  
**First Dose M/F:** NA / NA  
**Lab:** BNW

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**ANIMAL ID:** 201

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 621

**DOSE:** 450 PPM

**DISP:** Moribund Sacrifice

**HISTO:** 44863

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 202

TRT#: 3

SEX: Male

DAY ON TEST: 726

DOSE: 450 PPM

DISP: Terminal Sacrifice

HISTO: 44864

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Liver	* Lung	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Nose	* Pancreas
* Parathyroid Gland	Peritoneum	Pleura	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Eye [ Cataract TGLS = 1-13 ]	Lens	Cataract	Moderate
* Heart		Cardiomyopathy	Mild
* Kidney [ Nephropathy TGLS = 4-7 ]		Nephropathy	Marked
Mesentery [ Necrosis TGLS = 5-14 ]		Necrosis	Moderate
* Pituitary Gland [ Adenoma TGLS = 2-10 ]		Adenoma	
* Spleen		Leukemia Mononuclear	
* Testes [ Adenoma TGLS = 3-9 ]	Bilateral, Interstit Cell	Adenoma	

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 203

TRT#: 3

SEX: Male

DAY ON TEST: 595

DOSE: 450 PPM

DISP: Moribund Sacrifice

HISTO: 44865

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lymph Node, Mesenteric	* Mammary Gland
* Nose	* Pancreas	* Parathyroid Gland	Peripheral Nerve
Pleura	* Salivary Glands	* Seminal Vesicle	Skeletal Muscle
* Skin	Spinal Cord	* Stomach, Forestomach	* Stomach, Glandular
* Thyroid Gland	* Trachea		

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Thymus
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OBSERVATIONS

* Brain		Glioma Malignant	
Note: glioma involves cerebrum, midbrain, medulla, largest and most dense area is in midbrain. Mass contains features of astrocytoma and oligodendrogloma.			
* Kidney	Renal Tubule	Cyst	
[ Cyst TGLS = 6-7 ]			
* Liver		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 5-6 ]			
* Lung	Alveolus	Hemorrhage	Mild
[ Hemorrhage TGLS = 1-4+5 ]			
[ Infiltration Cellular TGLS = 2-15 ]			
Mesentery		Necrosis	Moderate
[ Necrosis TGLS = 3-15 ]			
* Pituitary Gland		Adenoma	
Note: small adenoma, would not explain seizures as it does not appear to be compressing.			
* Preputial Gland		Cyst	Marked
* Prostate		Inflammation	Suppurative, Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01

**Test Type:** CHRONIC

**Route:** RESPIRATORY EXPOSURE WHOLE BODY

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Methyl isobutyl ketone

**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014

**Time Report Requested:** 22:41:41

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

**Lab:** BNW

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**ANIMAL ID:** 203

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 595

**DOSE:** 450 PPM

**DISP:** Moribund Sacrifice

**HISTO:** 44865

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* Spleen

Leukemia Mononuclear

\* Testes

Bilateral, Interstit Cell

Adenoma

[ Adenoma TGLS = 4-9 ]

\* Urinary Bladder

Transit Epithe

Hyperplasia

Moderate

---

PRIMARY CAUSE OF DEATH

- Brain Glioma Malignant

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 204

TRT#: 3

SEX: Male

DAY ON TEST: 726

DOSE: 450 PPM

DISP: Terminal Sacrifice

HISTO: 44866

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Epididymis	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lung	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Nose	* Pancreas	* Parathyroid Gland
Peritoneum	Pleura	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Medulla	Hyperplasia	Moderate
* Brain	Compression	Moderate
* Kidney	Nephropathy	Moderate
[ Nephropathy TGLS = 3-7 ]		
* Liver	Basophilic Focus	
	Clear Cell Focus	
* Pituitary Gland	Adenoma	
[ Adenoma TGLS = 1-10 ]		
* Spleen	Fibrosis	Moderate
[ Fibrosis TGLS = 2-6 ]	Leukemia Mononuclear	

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 205

TRT#: 3

SEX: Male

DAY ON TEST: 721

DOSE: 450 PPM

DISP: Moribund Sacrifice

HISTO: 44867

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Pancreas	Peritoneum	* Pituitary Gland	Pleura
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Lymph Node, Mandibular	* Lymph Node, Mediastinal
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OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Moderate
* Heart	Atrium	Thrombosis	Marked
[ Thrombosis TGLS = 2-6 ]			
* Kidney		Nephropathy	Minimal
* Liver	Bile Duct	Hyperplasia	Moderate
[ Leukemia Mononuclear TGLS = 8-6 ]		Leukemia Mononuclear	
* Lung		Hemorrhage	Mild
[ Leukemia Mononuclear TGLS = 3-4+5 ]		Leukemia Mononuclear	
Lymph Node	Pancreatic	Leukemia Mononuclear	
	Renal	Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 9-16 ]			
[ Leukemia Mononuclear TGLS = 6-15 ]			
* Lymph Node, Bronchial		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 10-14 ]			
Mesentery		Necrosis	Moderate
[ Necrosis TGLS = 7-15 ]			

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 97006-01

**Test Type:** CHRONIC

**Route:** RESPIRATORY EXPOSURE WHOLE BODY

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Methyl isobutyl ketone

**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014

**Time Report Requested:** 22:41:41

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

**Lab:** BNW

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**ANIMAL ID:** 205

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 721

**DOSE:** 450 PPM

**DISP:** Moribund Sacrifice

**HISTO:** 44867

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* Parathyroid Gland

Hyperplasia

Moderate

\* Spleen

Leukemia Mononuclear

[ Leukemia Mononuclear TGLS = 5-14 ]

\* Testes

Bilateral, Interstit Cell

Adenoma

[ Adenoma TGLS = 4-9 ]

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PRIMARY CAUSE OF DEATH

- Spleen Leukemia Mononuclear

CONTRIBUTORY CAUSE OF DEATH

- Heart Atrium Thrombosis

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 206

TRT#: 3

SEX: Male

DAY ON TEST: 677

DOSE: 450 PPM

DISP: Moribund Sacrifice

HISTO: 44868

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Nose	* Pancreas	* Parathyroid Gland
Peritoneum	* Pituitary Gland	Pleura	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Trachea	* Urinary Bladder		

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Kidney		Nephropathy	Minimal
* Larynx		Inflammation	Suppurative, Mild
	Epiglottis	Metaplasia	Squamous, Mild
* Liver		Clear Cell Focus	
* Lung		Inflammation	Suppurative, Mild
* Testes	Bilateral, Interstit Cell	Adenoma	
[ Adenoma TGLS = 2-9 ]			
* Thyroid Gland	Follicular Cel	Carcinoma	
[ Carcinoma TGLS = 1-3 ]			

PRIMARY CAUSE OF DEATH

- Thyroid Gland Follicular Cel Carcinoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 207

TRT#: 3

DOSE: 450 PPM

SEX: Male

DISP: Moribund Sacrifice

DAY ON TEST: 705

HISTO: 44869

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Epididymis	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Nose	* Parathyroid Gland	Peritoneum	* Pituitary Gland
Pleura	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

\* Lymph Node, Mandibular

OBSERVATIONS

* Adrenal Medulla		Pheochromocytoma Malignant	
[ Pheochromocytoma Malignant TGLS = 9-7 ]			
* Brain		Hemorrhage	Marked
[ Hemorrhage TGLS = 11-1 ]			
* Kidney		Leukemia Mononuclear	
		Nephropathy	Mild
* Liver	Bile Duct	Hyperplasia	Moderate
[ Leukemia Mononuclear TGLS = 8-6 ]		Leukemia Mononuclear	
* Lung		Leukemia Mononuclear	
Lymph Node	Deep Cervical	Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 5-14 ]	Pancreatic	Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-15 ]			
* Lymph Node, Bronchial		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 2-14 ]			
* Pancreas	Acinus	Atrophy	Moderate
* Spleen		Leukemia Mononuclear	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Methyl isobutyl ketone  
**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014  
**Time Report Requested:** 22:41:41  
**First Dose M/F:** NA / NA  
**Lab:** BNW

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<b>ANIMAL ID:</b> 207	<b>TRT#:</b> 3	<b>SEX:</b> Male	<b>DAY ON TEST:</b> 705
	<b>DOSE:</b> 450 PPM	<b>DISP:</b> Moribund Sacrifice	<b>HISTO:</b> 44869

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Leukemia Mononuclear TGLS = 6-14 ]		Necrosis	Marked
[ Necrosis TGLS = 7-14 ]			
* Testes	Interstit Cell	Adenoma	
	Germinal Epith	Atrophy	Moderate
[ Adenoma TGLS = 3-9 ]			
[ Atrophy TGLS = 4-9 ]			

---

**PRIMARY CAUSE OF DEATH** - Spleen Leukemia Mononuclear

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 208

TRT#: 3

DOSE: 450 PPM

SEX: Male

DISP: Natural Death

DAY ON TEST: 720

HISTO: 44870

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Harderian Gland
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Pancreas	* Parathyroid Gland	Peritoneum	Pleura
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

\* Lymph Node, Mandibular

OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Mild
* Eye	Lens	Cataract	Marked
* Heart		Cardiomyopathy	Moderate
* Kidney	Papilla	Mineralization	Minimal
		Nephropathy	Mild
	[ Nephropathy TGLS = 6-7 ]		
* Liver		Leukemia Mononuclear	
	[ Leukemia Mononuclear TGLS = 3-6 ]		
* Lung	Alveolar Epith	Hyperplasia	Minimal
		Leukemia Mononuclear	
	[ Hyperplasia TGLS = 8-5 ]		
* Lymph Node, Bronchial		Leukemia Mononuclear	
* Pituitary Gland		Adenoma	
	[ Adenoma TGLS = 1-10 ]		
* Spleen		Hemorrhage	Marked
		Leukemia Mononuclear	
		Necrosis	Marked
	[ Hemorrhage TGLS = 7-14 ]		

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Methyl isobutyl ketone  
**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014  
**Time Report Requested:** 22:41:41  
**First Dose M/F:** NA / NA  
**Lab:** BNW

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<b>ANIMAL ID:</b> 208	<b>TRT#:</b> 3	<b>SEX:</b> Male	<b>DAY ON TEST:</b> 720
	<b>DOSE:</b> 450 PPM	<b>DISP:</b> Natural Death	<b>HISTO:</b> 44870

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Leukemia Mononuclear TGLS = 4-15 ]		
[ Necrosis TGLS = 5-15 ]		
* Testes	Bilateral, Interstit Cell	Adenoma
[ Adenoma TGLS = 2-9 ]		

---

PRIMARY CAUSE OF DEATH	- Spleen	Leukemia Mononuclear
CONTRIBUTORY CAUSE OF DEATH	- Spleen	Hemorrhage

---

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 209

TRT#: 3

SEX: Male

DAY ON TEST: 726

DOSE: 450 PPM

DISP: Terminal Sacrifice

HISTO: 44871

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lung	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Nose	* Pancreas	* Parathyroid Gland
* Pituitary Gland	Pleura	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Trachea	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Mild
* Epididymis		Mesothelioma Malignant	
[ Mesothelioma Malignant TGLS = 6-9 ]			
* Kidney	Pelvis, Transit Epithe	Hyperplasia	Minimal
		Leukemia Mononuclear	
	Papilla	Mineralization	Mild
		Nephropathy	Mild
* Liver		Eosinophilic Focus	
		Leukemia Mononuclear	
	Hepatocyte	Regeneration	Marked
[ Regeneration TGLS = 3-6 ]			
Lymph Node	Deep Cervical	Hemorrhage	Moderate
[ Hemorrhage TGLS = 2-14 ]			
Peritoneum		Mesothelioma Malignant	
[ Mesothelioma Malignant TGLS = 4,6,7,8-9+15+16+14 ]			
* Spleen		Leukemia Mononuclear	
* Testes	Bilateral, Interstit Cell	Adenoma	
		Mesothelioma Malignant	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01

**Test Type:** CHRONIC

**Route:** RESPIRATORY EXPOSURE WHOLE BODY

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Methyl isobutyl ketone

**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014

**Time Report Requested:** 22:41:41

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

**Lab:** BNW

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**ANIMAL ID:** 209

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 726

**DOSE:** 450 PPM

**DISP:** Terminal Sacrifice

**HISTO:** 44871

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Mesothelioma Malignant TGLS = 5,6-9+15 ]

\* Thyroid Gland

C Cell

Hyperplasia

Mild

\* Urinary Bladder

Calculus Micro Observation Only

Moderate

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**PRIMARY CAUSE OF DEATH**

-

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\* PROTOCOL REQUIRED TISSUE



Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 210

TRT#: 3

SEX: Male

DAY ON TEST: 664

DOSE: 450 PPM

DISP: Moribund Sacrifice

HISTO: 44872

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Nose	* Pancreas	* Parathyroid Gland	Peritoneum
* Pituitary Gland	Pleura	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

\* Lymph Node, Mandibular

OBSERVATIONS

* Adrenal Medulla		Hyperplasia Pheochromocytoma Malignant	Mild
* Kidney		Nephropathy	Moderate
[ Nephropathy TGLS = 8-7 ]			
* Larynx		Foreign Body	Marked
* Liver		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 7-6 ]			
* Lung	Alveolar Epith	Hyperplasia Leukemia Mononuclear	Mild
[ Hyperplasia TGLS = 9-5 ]			
[ Leukemia Mononuclear TGLS = 3,9,10-4+5+14 ]			
* Lymph Node, Bronchial		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 2-3 ]			
Mesentery		Necrosis	Moderate
[ Necrosis TGLS = 5-15 ]			
* Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 6-14 ]			

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Methyl isobutyl ketone  
**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014  
**Time Report Requested:** 22:41:41  
**First Dose M/F:** NA / NA  
**Lab:** BNW

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**ANIMAL ID:** 210

**TRT#:** 3  
**DOSE:** 450 PPM

**SEX:** Male  
**DISP:** Moribund Sacrifice

**DAY ON TEST:** 664  
**HISTO:** 44872

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Testes	Bilateral, Interstit Cell	Adenoma
[ Adenoma TGLS = 4-9 ]		

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**PRIMARY CAUSE OF DEATH** - Spleen Leukemia Mononuclear

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 211

TRT#: 3

DOSE: 450 PPM

SEX: Male

DISP: Terminal Sacrifice

DAY ON TEST: 726

HISTO: 44873

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Epididymis	* Esophagus	* Harderian Gland	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Nose	* Pancreas	* Parathyroid Gland	Peritoneum
Pleura	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Medulla	Bilateral	Pheochromocytoma Benign	
* Brain		Compression	Moderate
* Eye	Lens	Cataract	Mild
* Heart		Cardiomyopathy	Mild
* Kidney	Renal Tubule	Hyperplasia	Minimal
	Papilla	Mineralization	Minimal
		Nephropathy	Marked
	[ Nephropathy TGLS = 7-7 ]		
* Larynx		Foreign Body	Marked
* Liver		Leukemia Mononuclear	
* Lung		Carcinoma	Metastatic (Mammary Gland)
		Leukemia Mononuclear	
	[ Carcinoma TGLS = 10-14 ]		
	[ Leukemia Mononuclear TGLS = 9-15 ]		
* Mammary Gland		Carcinoma	
	[ Carcinoma TGLS = 2-14 ]		
Mesentery		Necrosis	Moderate
	[ Necrosis TGLS = 5-15 ]		
* Pituitary Gland		Adenoma	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Methyl isobutyl ketone  
**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014  
**Time Report Requested:** 22:41:41  
**First Dose M/F:** NA / NA  
**Lab:** BNW

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<b>ANIMAL ID:</b> 211	<b>TRT#:</b> 3 <b>DOSE:</b> 450 PPM	<b>SEX:</b> Male <b>DISP:</b> Terminal Sacrifice	<b>DAY ON TEST:</b> 726 <b>HISTO:</b> 44873
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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Adenoma TGLS = 1-10 ]			
* Skin		Cyst Epithelial Inclusion	Marked
[ Cyst Epithelial Inclusion TGLS = 8-16 ]			
* Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 6-6 ]			
* Testes	Bilateral, Interstit Cell Germinal Epith	Adenoma Atrophy	Marked
[ Adenoma TGLS = 3-9 ]			
[ Atrophy TGLS = 4-9 ]			

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PRIMARY CAUSE OF DEATH

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 212

TRT#: 3

SEX: Male

DAY ON TEST: 726

DOSE: 450 PPM

DISP: Terminal Sacrifice

HISTO: 44874

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lung
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Pancreas	* Parathyroid Gland	Peritoneum	Pleura
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Kidney		Nephropathy	Mild
* Liver		Basophilic Focus	
		Clear Cell Focus	
* Pituitary Gland		Adenoma	
* Skin		Hyperkeratosis	Marked
[ Hyperkeratosis TGLS = 1-15 ]			
* Spleen		Leukemia Mononuclear	
* Testes	Bilateral, Interstit Cell	Adenoma	
[ Adenoma TGLS = 2,3-9 ]			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 213

TRT#: 3

SEX: Male

DAY ON TEST: 338

DOSE: 450 PPM

DISP: Moribund Sacrifice

HISTO: 44875

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Liver
* Lymph Node, Mesenteric	* Mammary Gland	* Nose	* Pancreas
* Parathyroid Gland	Peritoneum	Pleura	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Thymus	* Thyroid Gland	* Urinary Bladder	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
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OBSERVATIONS

* Larynx		Inflammation	Suppurative, Moderate
* Lung	Mediastinum	Sarcoma	

Note: MEDIASTINAL MASS INVOLVING SECTIONS OF VARIABLY-SIZED ARTERIES AND VEINS, NERVES, SKELETAL MUSCLE AND SAIVARY GLAND; TISSUE WAS IDENTIFIED AS "LUNG, MEDIASTINUM

Note: " ALTHOUGH NO LUNG IS PRESENT, BECAUSE "MEDIASTINUM" IS NOT AVAILABLE IN THE TDMS SOFTWARE.

[ Sarcoma TGLS = 3,4,5-14 ]

* Pituitary Gland		Hyperplasia	Moderate
* Trachea	Epithelium	Hyperplasia	Marked
		Inflammation	Suppurative, Moderate

Note: 5 step sections of trachea/mainstem bronchi/lung, no additional lesion observed.

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 214

TRT#: 3

DOSE: 450 PPM

SEX: Male

DISP: Terminal Sacrifice

DAY ON TEST: 727

HISTO: 44876

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lung	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Nose	* Parathyroid Gland
Peripheral Nerve	Peritoneum	Pleura	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	Skeletal Muscle
* Skin	Spinal Cord	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Moderate
* Kidney		Nephropathy	Mild
* Liver		Clear Cell Focus	
	Bile Duct	Hyperplasia	Moderate
* Pancreas	Acinus	Atrophy	Mild
* Pituitary Gland		Hyperplasia	Moderate
* Testes	Bilateral, Interstit Cell	Adenoma	
[ Adenoma TGLS = 1-9 ]			
Tongue	Epithelium	Hyperplasia	Moderate
[ Hyperplasia TGLS = 2-14 ]			
* Urinary Bladder		Calculus Micro Observation Only	Moderate

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 215

TRT#: 3

SEX: Male

DAY ON TEST: 654

DOSE: 450 PPM

DISP: Natural Death

HISTO: 44877

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Nose	* Pancreas	* Parathyroid Gland	Peritoneum
Pleura	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Medulla	Bilateral	Pheochromocytoma Benign	
* Heart	Atrium	Thrombosis	Marked
[ Thrombosis TGLS = 2-6 ]			
* Kidney		Nephropathy	Mild
* Liver		Necrosis	Marked
[ Necrosis TGLS = 4-6 ]			
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Moderate
	Alveolus	Pigmentation	Moderate
Mesentery		Necrosis	Moderate
[ Necrosis TGLS = 5-14 ]			
* Pituitary Gland		Adenoma	
* Testes	Interstit Cell	Adenoma	
[ Adenoma TGLS = 3-9 ]			

PRIMARY CAUSE OF DEATH

- Heart Atrium Thrombosis

CONTRIBUTORY CAUSE OF DEATH

- Liver Necrosis

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 216

TRT#: 3

SEX: Male

DAY ON TEST: 727

DOSE: 450 PPM

DISP: Terminal Sacrifice

HISTO: 44878

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Lung	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Nose	* Pancreas	* Parathyroid Gland	Peritoneum
Pleura	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Minimal
* Islets, Pancreatic		Hyperplasia	Marked
* Kidney		Nephropathy	Moderate
* Larynx		Foreign Body	Marked
* Liver		Basophilic Focus	
		Clear Cell Focus	
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 2-10 ]			
* Testes	Bilateral, Interstit Cell	Adenoma	
[ Adenoma TGLS = 1-9 ]			

PRIMARY CAUSE OF DEATH

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 217

TRT#: 3

SEX: Male

DAY ON TEST: 726

DOSE: 450 PPM

DISP: Terminal Sacrifice

HISTO: 44879

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Blood Vessel	* Bone	* Bone Marrow	* Epididymis
* Esophagus	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Larynx	* Lymph Node, Mesenteric	* Mammary Gland
* Pancreas	* Parathyroid Gland	Peritoneum	Pleura
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Trachea	* Urinary Bladder	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
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OBSERVATIONS

* Adrenal Cortex		Vacuolization Cytoplasmic	Mild
* Adrenal Medulla		Hyperplasia	Moderate
* Brain		Compression	Moderate
* Eye	Lens	Cataract	Mild
* Islets, Pancreatic		Adenoma	
* Kidney	Renal Tubule	Hyperplasia	Moderate
		Nephropathy	Marked
			[ Nephropathy TGLS = 4-7 ]
* Liver		Clear Cell Focus	
* Lung	Alveolar Epith	Hyperplasia	Marked
			[ Hyperplasia TGLS = 5-14 ]
* Nose		Foreign Body	Moderate
		Inflammation	Suppurative, Moderate
* Pituitary Gland		Adenoma	
			[ Adenoma TGLS = 2-10 ]
* Testes	Bilateral, Interstit Cell	Adenoma	
			[ Adenoma TGLS = 3-9 ]
* Thyroid Gland	C Cell	Adenoma	
			[ Adenoma TGLS = 1-3 ]

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01

**Test Type:** CHRONIC

**Route:** RESPIRATORY EXPOSURE WHOLE BODY

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Methyl isobutyl ketone

**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014

**Time Report Requested:** 22:41:41

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

**Lab:** BNW

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**ANIMAL ID:** 217

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 726

**DOSE:** 450 PPM

**DISP:** Terminal Sacrifice

**HISTO:** 44879

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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: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 218

TRT#: 3

SEX: Male

DAY ON TEST: 727

DOSE: 450 PPM

DISP: Terminal Sacrifice

HISTO: 44880

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Epididymis	* Esophagus	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Larynx
* Lung	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Nose	* Pancreas	* Parathyroid Gland	Peritoneum
Pleura	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Bone Marrow		Hyperplasia	Reticulum Cell, Marked
* Eye	Lens	Cataract	Minimal
* Islets, Pancreatic		Adenoma	
* Kidney		Nephropathy	Mild
* Liver		Clear Cell Focus	
		Leukemia Mononuclear	
Mesentery		Necrosis	Moderate
[ Necrosis TGLS = 2-14 ]			
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 4-10 ]			
* Spleen		Leukemia Mononuclear	
Note: atypical spleen for MCL; severe EMH			
[ Leukemia Mononuclear TGLS = 1-14 ]			
* Testes	Bilateral, Interstit Cell	Adenoma	
[ Adenoma TGLS = 3-9 ]			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 219

TRT#: 3

SEX: Male

DAY ON TEST: 405

DOSE: 450 PPM

DISP: Natural Death

HISTO: 44881

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Nose	* Parathyroid Gland
Peritoneum	* Pituitary Gland	Pleura	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Kidney		Nephropathy	Minimal
* Liver	Bile Duct	Inflammation	Suppurative, Marked
		Necrosis	Marked
* Lung		Hemorrhage	Marked
		Thrombosis	Moderate
[ Hemorrhage TGLS = 2-5 ]			
* Pancreas		Necrosis	Marked
	Artery	Thrombosis	Marked
[ Necrosis TGLS = 1-14 ]			
* Testes	Interstit Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

- Pancreas Necrosis

CONTRIBUTORY CAUSE OF DEATH

- Liver Necrosis

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 220

TRT#: 3

SEX: Male

DAY ON TEST: 726

DOSE: 450 PPM

DISP: Terminal Sacrifice

HISTO: 44882

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lung
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Pancreas	* Parathyroid Gland	Peritoneum	Pleura
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Kidney	Nephropathy	Mild
* Liver	Clear Cell Focus	
	Eosinophilic Focus	
	Hepatodiaphragmatic Nodule	Marked
	Necrosis	Mild
[ Hepatodiaphragmatic Nodule TGLS = 1-6 ]		
* Pituitary Gland	Hyperplasia	Mild
* Testes	Bilateral, Interstit Cell	Adenoma
[ Adenoma TGLS = 2,3-9 ]		

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 221

TRT#: 3

SEX: Male

DAY ON TEST: 609

DOSE: 450 PPM

DISP: Moribund Sacrifice

HISTO: 44883

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Brain
* Epididymis	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Nose	* Pancreas	* Parathyroid Gland	Peritoneum
Pleura	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Cortex		Histiocytic Sarcoma	
* Bone Marrow		Histiocytic Sarcoma	
* Kidney		Nephropathy	Minimal
* Liver		Histiocytic Sarcoma	
[ Histiocytic Sarcoma TGLS = 3-6 ]			
* Lung	Alveolar Epith	Hyperplasia	Mild
[ Hyperplasia TGLS = 5-14 ]			
* Pituitary Gland		Hyperplasia	Marked
* Spleen		Histiocytic Sarcoma	
[ Histiocytic Sarcoma TGLS = 2-14 ]			
* Testes	Bilateral, Interstit Cell	Adenoma	
[ Adenoma TGLS = 1-9 ]			

PRIMARY CAUSE OF DEATH - Spleen Histiocytic Sarcoma

Animal Note: diff dx MCL

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 222

TRT#: 3

SEX: Male

DAY ON TEST: 637

DOSE: 450 PPM

DISP: Moribund Sacrifice

HISTO: 44884

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lung	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Nose	* Pancreas
* Parathyroid Gland	Peritoneum	Pleura	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

**MISSING**

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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**OBSERVATIONS**

* Brain		Compression	Moderate
* Kidney		Nephropathy	Mild
* Liver	Periportal	Inflammation	Chronic, Moderate
		Inflammation	Granulomatous, Moderate
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 1-10 ]			
* Testes	Germinal Epith	Atrophy	Marked

PRIMARY CAUSE OF DEATH

- Pituitary Gland Adenoma

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 223

TRT#: 3

SEX: Male

DAY ON TEST: 726

DOSE: 450 PPM

DISP: Terminal Sacrifice

HISTO: 44885

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lung	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Nose	* Pancreas	* Parathyroid Gland
Peritoneum	Pleura	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Trachea	* Urinary Bladder

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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INSUFFICIENT TISSUE

\* Eye

OBSERVATIONS

* Heart		Cardiomyopathy	Mild
* Kidney	Pelvis, Transit Epithe Papilla	Hyperplasia Mineralization Nephropathy	Minimal Minimal Marked
	[ Nephropathy TGLS = 3-7 ]		
* Liver		Hepatodiaphragmatic Nodule	Marked
	[ Hepatodiaphragmatic Nodule TGLS = 2-6 ]		
* Pituitary Gland		Adenoma	
	[ Adenoma TGLS = 1-10 ]		
* Spleen		Leukemia Mononuclear	
* Testes	Bilateral, Interstit Cell Germinal Epith	Adenoma Atrophy	Marked
	[ Adenoma TGLS = 4-9 ]		
* Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 224

TRT#: 3

SEX: Male

DAY ON TEST: 726

DOSE: 450 PPM

DISP: Terminal Sacrifice

HISTO: 44886

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lung	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Nose	* Pancreas	* Parathyroid Gland
Peritoneum	Pleura	* Prostate	* Seminal Vesicle
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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INSUFFICIENT TISSUE

\* Eye

OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Marked
* Kidney	Renal Tubule	Carcinoma	
	Pelvis	Dilatation	Minimal
	Pelvis, Transit Epithe	Hyperplasia	Mild
	Renal Tubule	Hyperplasia	Moderate
		Nephropathy	Marked
	[ Carcinoma TGLS = 4-14 ]		
	[ Dilatation TGLS = 5-7 ]		
	[ Nephropathy TGLS = 6-7 ]		
* Liver		Basophilic Focus	
		Eosinophilic Focus	
		Adenoma	
* Pituitary Gland			
	[ Adenoma TGLS = 2-10 ]		
* Preputial Gland		Cyst	Marked
	[ Cyst TGLS = 1-14 ]		
* Salivary Glands		Hyperplasia	Marked

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Methyl isobutyl ketone  
**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014  
**Time Report Requested:** 22:41:41  
**First Dose M/F:** NA / NA  
**Lab:** BNW

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<b>ANIMAL ID:</b> 224	<b>TRT#:</b> 3	<b>SEX:</b> Male	<b>DAY ON TEST:</b> 726
	<b>DOSE:</b> 450 PPM	<b>DISP:</b> Terminal Sacrifice	<b>HISTO:</b> 44886

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Testes [ Adenoma TGLS = 3-9 ]	Bilateral, Interstit Cell	Adenoma
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PRIMARY CAUSE OF DEATH

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 225

TRT#: 3

SEX: Male

DAY ON TEST: 420

DOSE: 450 PPM

DISP: Moribund Sacrifice

HISTO: 44887

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Harderian Gland
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Pancreas	* Parathyroid Gland	Peritoneum	Pleura
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Stomach, Forestomach	* Testes	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

**MISSING**

\* Lymph Node, Mandibular

**INSUFFICIENT TISSUE**

\* Eye

**OBSERVATIONS**

* Adrenal Medulla		Hyperplasia	Mild
* Heart	Valve	Inflammation	Suppurative, Marked
	Atrium	Thrombosis	Marked
	[ Thrombosis TGLS = 3-6 ]		
* Kidney		Nephropathy	Mild
* Liver		Necrosis	Marked
	[ Necrosis TGLS = 5-6 ]		
* Lung		Hemorrhage	Marked
		Inflammation	Suppurative, Moderate
	[ Hemorrhage TGLS = 2-4+5 ]		
* Lymph Node, Bronchial		Hemorrhage	Moderate
	[ Hemorrhage TGLS = 4-3 ]		
* Pituitary Gland		Hyperplasia	Mild
* Spleen		Fibrosis	Mild
	[ Fibrosis TGLS = 7-14 ]		
* Stomach, Glandular		Erosion	Moderate

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Methyl isobutyl ketone  
**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014  
**Time Report Requested:** 22:41:41  
**First Dose M/F:** NA / NA  
**Lab:** BNW

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**ANIMAL ID:** 225

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 420

**DOSE:** 450 PPM

**DISP:** Moribund Sacrifice

**HISTO:** 44887

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Erosion TGLS = 6-14 ]

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PRIMARY CAUSE OF DEATH

- Heart Atrium Thrombosis

CONTRIBUTORY CAUSE OF DEATH

- Liver Necrosis;Lung Hemorrhage

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 226

TRT#: 3

SEX: Male

DAY ON TEST: 621

DOSE: 450 PPM

DISP: Accidentally Killed

HISTO: 44888

ORGAN AND ACCOUNTABLE SITE STATUS

AUTO PRECLUDES DIAG.

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone Marrow
* Epididymis	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lung	* Lymph Node, Bronchial	* Lymph Node, Mandibular
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Pancreas	* Parathyroid Gland	Peritoneum	* Pituitary Gland
Pleura	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

OBSERVATIONS

* Bone [ Fracture TGLS = 2-12+15 ]	Cranium, Maxilla	Fracture	Marked
* Brain [ Hemorrhage TGLS = 3-1+15 ]		Hemorrhage	Marked
* Kidney		Leukemia Mononuclear	
* Liver		Leukemia Mononuclear	
* Spleen [ Leukemia Mononuclear TGLS = 1-14 ]		Leukemia Mononuclear	
* Testes	Bilateral, Interstit Cell	Adenoma	

PRIMARY CAUSE OF DEATH

- Bone Cranium Maxilla Fracture

CONTRIBUTORY CAUSE OF DEATH

- Brain Hemorrhage

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 227

TRT#: 3

SEX: Male

DAY ON TEST: 726

DOSE: 450 PPM

DISP: Terminal Sacrifice

HISTO: 44889

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lung	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Nose	* Pancreas	* Parathyroid Gland
Peritoneum	Pleura	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Trachea	* Urinary Bladder

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Brain		Hemorrhage	Moderate
* Heart		Cardiomyopathy	Moderate
* Kidney	Renal Tubule	Hyperplasia	Marked
		Nephropathy	Moderate
* Liver		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 3-6 ]			
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 4-10 ]			
* Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 2-6 ]			
* Testes	Bilateral, Interstit Cell	Adenoma	
[ Adenoma TGLS = 1-9 ]			
* Thyroid Gland	C Cell	Hyperplasia	Minimal

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 228

TRT#: 3

SEX: Male

DAY ON TEST: 727

DOSE: 450 PPM

DISP: Terminal Sacrifice

HISTO: 44890

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Mammary Gland	* Pancreas	* Parathyroid Gland
Peritoneum	Pleura	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Stomach, Glandular	* Trachea
* Urinary Bladder			

MISSING

\* Lymph Node, Mandibular

OBSERVATIONS

* Adrenal Medulla		Hyperplasia Pheochromocytoma Benign	Marked
* Kidney		Nephropathy	Mild
* Larynx		Carcinoma	Metastatic (Thyroid Gland)
* Liver		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 6-6 ]			
* Lung	Alveolus, Bronchiole	Foreign Body Leukemia Mononuclear	Moderate
Lymph Node	Deep Cervical	Carcinoma	Metastatic (Thyroid Gland)
[ Carcinoma TGLS = 4-15 ]			
* Lymph Node, Bronchial		Leukemia Mononuclear	
* Lymph Node, Mediastinal		Carcinoma	Metastatic (Thyroid Gland)
[ Carcinoma TGLS = 2-18 ]			
* Lymph Node, Mesenteric		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 12-17 ]			
Mesentery		Necrosis	Moderate
[ Necrosis TGLS = 9-16 ]			
* Nose	Respirat Epith	Hyperplasia Inflammation	Minimal Suppurative, Mild

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 97006-01

**Test Type:** CHRONIC

**Route:** RESPIRATORY EXPOSURE WHOLE BODY

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Methyl isobutyl ketone

**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014

**Time Report Requested:** 22:41:41

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

**Lab:** BNW

**ANIMAL ID:** 228

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 727

**DOSE:** 450 PPM

**DISP:** Terminal Sacrifice

**HISTO:** 44890

**ORGAN AND ACCOUNTABLE SITE STATUS**

* Pituitary Gland [ Adenoma TGLS = 5-10 ]		Adenoma	
* Skin [ Inflammation TGLS = 1-14 ]		Inflammation	Acute, Mild
* Spleen [ Leukemia Mononuclear TGLS = 7,8-17+19 ]		Leukemia Mononuclear	
* Stomach, Forestomach		Ulcer	Moderate
* Testes [ Adenoma TGLS = 10-9 ] [ Atrophy TGLS = 11-9 ]	Interstit Cell Germinal Epith	Adenoma Atrophy	Marked
* Thymus [ Carcinoma TGLS = 2-18 ]		Carcinoma	Metastatic (Thyroid Gland)
* Thyroid Gland [ Carcinoma TGLS = 3-3 ]	C Cell	Carcinoma	

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 229

TRT#: 3

SEX: Male

DAY ON TEST: 659

DOSE: 450 PPM

DISP: Moribund Sacrifice

HISTO: 44891

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Blood Vessel	* Bone	* Bone Marrow	* Brain
* Epididymis	* Esophagus	* Eye	* Harderian Gland
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Pancreas	* Parathyroid Gland	Peritoneum	Pleura
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Stomach, Forestomach	* Stomach, Glandular	* Testes	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Cortex		Vacuolization Cytoplasmic	Moderate
[ Vacuolization Cytoplasmic TGLS = 9-7 ]			
* Adrenal Medulla		Hyperplasia	Marked
* Heart	Atrium	Thrombosis	Marked
[ Thrombosis TGLS = 10-6 ]			
* Kidney	Renal Tubule	Hyperplasia	Mild
		Nephropathy	Minimal
* Liver		Hepatodiaphragmatic Nodule	Marked
		Leukemia Mononuclear	
		Necrosis	Marked
[ Hepatodiaphragmatic Nodule TGLS = 8-14 ]			
[ Leukemia Mononuclear TGLS = 7-6+14 ]			
* Lung		Leukemia Mononuclear	
Lymph Node	Pancreatic	Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 6-14 ]			
Mesentery		Necrosis	Moderate
[ Necrosis TGLS = 11-15 ]			
* Pituitary Gland		Adenoma	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Methyl isobutyl ketone  
**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014  
**Time Report Requested:** 22:41:41  
**First Dose M/F:** NA / NA  
**Lab:** BNW

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<b>ANIMAL ID:</b> 229	<b>TRT#:</b> 3	<b>SEX:</b> Male	<b>DAY ON TEST:</b> 659
	<b>DOSE:</b> 450 PPM	<b>DISP:</b> Moribund Sacrifice	<b>HISTO:</b> 44891

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Adenoma TGLS = 3-10 ]			
* Skin		Basal Cell Carcinoma	
[ Basal Cell Carcinoma TGLS = 2-15 ]			
* Spleen		Leukemia Mononuclear Necrosis	Marked
[ Leukemia Mononuclear TGLS = 4-14 ]			
[ Necrosis TGLS = 5-14 ]			

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**PRIMARY CAUSE OF DEATH** - Spleen Leukemia Mononuclear

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 230

TRT#: 3

SEX: Male

DAY ON TEST: 726

DOSE: 450 PPM

DISP: Terminal Sacrifice

HISTO: 44892

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Nose	* Parathyroid Gland	Peritoneum	* Pituitary Gland
Pleura	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Trachea	* Urinary Bladder	

MISSING

\* Lymph Node, Mandibular

OBSERVATIONS

* Adrenal Medulla	Bilateral	Pheochromocytoma Benign	
* Heart		Cardiomyopathy	Moderate
* Kidney	Pelvis, Transit Epithe	Hyperplasia	Moderate
	Renal Tubule	Hyperplasia	Marked
		Leukemia Mononuclear	
		Nephropathy	Marked
[ Nephropathy TGLS = 7-7 ]			
* Liver		Leukemia Mononuclear	
	Hepatocyte	Regeneration	Marked
[ Regeneration TGLS = 8-18 ]			
* Lung		Leukemia Mononuclear	
Lymph Node	Deep Cervical	Leukemia Mononuclear	
	Renal	Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 2-15 ]			
[ Leukemia Mononuclear TGLS = 6-17 ]			
* Lymph Node, Bronchial		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-14 ]			
* Pancreas		Leukemia Mononuclear	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Methyl isobutyl ketone  
**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014  
**Time Report Requested:** 22:41:41  
**First Dose M/F:** NA / NA  
**Lab:** BNW

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<b>ANIMAL ID:</b> 230	<b>TRT#:</b> 3	<b>SEX:</b> Male	<b>DAY ON TEST:</b> 726
	<b>DOSE:</b> 450 PPM	<b>DISP:</b> Terminal Sacrifice	<b>HISTO:</b> 44892

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Leukemia Mononuclear TGLS = 5-16 ]		
* Spleen		Leukemia Mononuclear
[ Leukemia Mononuclear TGLS = 4-6 ]		
* Testes	Bilateral, Interstit Cell	Adenoma
[ Adenoma TGLS = 3-9 ]		
* Thyroid Gland	C Cell	Adenoma

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PRIMARY CAUSE OF DEATH -

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 231

TRT#: 3

SEX: Male

DAY ON TEST: 727

DOSE: 450 PPM

DISP: Terminal Sacrifice

HISTO: 44893

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Larynx
* Lung	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Pancreas	* Parathyroid Gland	Peritoneum	* Pituitary Gland
Pleura	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Medulla [ Pheochromocytoma Benign TGLS = 4-7 ]	Pheochromocytoma Benign	
* Heart	Cardiomyopathy	Mild
* Islets, Pancreatic [ Carcinoma TGLS = 6-14 ]	Carcinoma	
* Kidney	Nephropathy	Moderate
* Liver  [ Leukemia Mononuclear TGLS = 1-6 ]	Basophilic Focus Clear Cell Focus Histiocytic Sarcoma Leukemia Mononuclear	
* Lymph Node, Mediastinal  [ Angiectasis TGLS = 3-3 ] [ Pigmentation TGLS = 3-3 ]	Angiectasis Pigmentation	Moderate Minimal
* Spleen  [ Fibrosis TGLS = 2-6 ]	Fibrosis Leukemia Mononuclear	Moderate

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Methyl isobutyl ketone  
**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014  
**Time Report Requested:** 22:41:41  
**First Dose M/F:** NA / NA  
**Lab:** BNW

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**ANIMAL ID:** 231

**TRT#:** 3  
**DOSE:** 450 PPM

**SEX:** Male  
**DISP:** Terminal Sacrifice

**DAY ON TEST:** 727  
**HISTO:** 44893

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Testes [ Adenoma TGLS = 5-9 ]	Bilateral, Interstit Cell	Adenoma
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PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 232

TRT#: 3

SEX: Male

DAY ON TEST: 727

DOSE: 450 PPM

DISP: Terminal Sacrifice

HISTO: 44894

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Larynx	* Liver	* Lung
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Pancreas	* Parathyroid Gland	Peritoneum	Pleura
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Islets, Pancreatic [ Carcinoma TGLS = 3-16 ]		Carcinoma	
* Kidney	Renal Tubule	Hyperplasia	Moderate
		Nephropathy	Moderate
		Necrosis	Moderate
Mesentery [ Necrosis TGLS = 2-15 ]			
* Pituitary Gland [ Adenoma TGLS = 1-10 ]		Adenoma	
* Preputial Gland		Hyperplasia	Marked
* Testes	Interstit Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 233

TRT#: 3

SEX: Male

DAY ON TEST: 727

DOSE: 450 PPM

DISP: Terminal Sacrifice

HISTO: 44895

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Liver
* Lung	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Pancreas	* Parathyroid Gland	Peritoneum	Pleura
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Trachea	* Urinary Bladder	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Kidney		Nephropathy	Moderate
* Nose		Inflammation	Suppurative, Mild
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 1-10 ]			
* Testes	Interstitial Cell	Adenoma	
	Germinal Epith	Atrophy	Moderate
[ Adenoma TGLS = 2-9 ]			
* Thyroid Gland	C Cell	Adenoma	

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 234

TRT#: 3

SEX: Male

DAY ON TEST: 727

DOSE: 450 PPM

DISP: Terminal Sacrifice

HISTO: 44896

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lymph Node, Bronchial
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Pancreas	* Parathyroid Gland	Peritoneum	* Pituitary Gland
Pleura	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

**MISSING**

\* Lymph Node, Mandibular

**OBSERVATIONS**

* Kidney		Nephropathy	Mild
* Liver		Clear Cell Focus	
* Lung	Alveolar Epith	Hyperplasia	Minimal
* Testes	Bilateral, Interstit Cell	Adenoma	

[ Adenoma TGLS = 1,2-9 ]

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 235

TRT#: 3

SEX: Male

DAY ON TEST: 727

DOSE: 450 PPM

DISP: Terminal Sacrifice

HISTO: 44897

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lung	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Pancreas	* Parathyroid Gland
Peritoneum	Pleura	* Preputial Gland	* Prostate
* Salivary Glands	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Minimal
* Kidney	Renal Tubule	Hyperplasia	Marked
		Nephropathy	Marked
	[ Nephropathy TGLS = 3-7 ]		
* Liver		Clear Cell Focus	
		Eosinophilic Focus	
* Nose		Foreign Body	Moderate
		Inflammation	Suppurative, Mild
* Pituitary Gland		Adenoma	
	[ Adenoma TGLS = 1-10 ]		
* Seminal Vesicle		Hyperplasia	Moderate
* Skin		Cyst Epithelial Inclusion	Marked
	[ Cyst Epithelial Inclusion TGLS = 2,4-14+15 ]		
* Testes	Interstit Cell	Adenoma	

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 236

TRT#: 3

SEX: Male

DAY ON TEST: 726

DOSE: 450 PPM

DISP: Terminal Sacrifice

HISTO: 44898

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Brain
* Epididymis	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Nose	* Parathyroid Gland	Peritoneum	Pleura
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Trachea	* Urinary Bladder		

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Marked
* Bone Marrow		Myelofibrosis	Moderate
* Kidney		Nephropathy	Mild
* Liver		Clear Cell Focus	
		Eosinophilic Focus	
* Lung	Alveolar Epith	Hyperplasia	Minimal
Mesentery		Necrosis	Moderate
[ Necrosis TGLS = 2,5-14+15 ]			
* Pancreas	Acinus	Atrophy	Mild
* Pituitary Gland		Cyst	Marked
		Hyperplasia	Moderate
[ Cyst TGLS = 1-10 ]			
* Spleen		Leukemia Mononuclear	
* Testes	Bilateral, Interstit Cell	Adenoma	
[ Adenoma TGLS = 3,4-9+14 ]			
* Thyroid Gland	Follicular Cel	Carcinoma	
[ Carcinoma TGLS = 6-3 ]			

PRIMARY CAUSE OF DEATH

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\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Methyl isobutyl ketone  
**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014  
**Time Report Requested:** 22:41:41  
**First Dose M/F:** NA / NA  
**Lab:** BNW

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**ANIMAL ID:** 236

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 726

**DOSE:** 450 PPM

**DISP:** Terminal Sacrifice

**HISTO:** 44898

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 237

TRT#: 3

SEX: Male

DAY ON TEST: 685

DOSE: 450 PPM

DISP: Natural Death

HISTO: 44899

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Blood Vessel	* Bone	* Bone Marrow	* Epididymis
* Esophagus	* Harderian Gland	* Heart	* Kidney
* Mammary Gland	* Nose	Peritoneum	Pleura
* Preputial Gland	* Prostate	* Seminal Vesicle	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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AUTO PRECLUDES DIAG.

* Adrenal Cortex	* Adrenal Medulla	* Brain	* Eye
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland
* Salivary Glands	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

OBSERVATIONS

* Liver		Hepatodiaphragmatic Nodule Leukemia Mononuclear	Marked
	[ Hepatodiaphragmatic Nodule TGLS = 5-14 ] [ Leukemia Mononuclear TGLS = 4-6 ]		
* Lung		Hemorrhage	Marked
	[ Hemorrhage TGLS = 7-4+5 ]		
* Pituitary Gland		Hemorrhage	Marked
	[ Hemorrhage TGLS = 1-10 ]		
* Skin	Subcut Tiss	Fibrosarcoma	
	[ Fibrosarcoma TGLS = 6-16+17 ]		
* Spleen		Leukemia Mononuclear	
* Testes	Bilateral, Interstit Cell Germinal Epith	Adenoma Atrophy	Marked
	[ Adenoma TGLS = 3-9 ] [ Atrophy TGLS = 2-9 ]		

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Methyl isobutyl ketone  
**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014  
**Time Report Requested:** 22:41:41  
**First Dose M/F:** NA / NA  
**Lab:** BNW

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**ANIMAL ID:** 237

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 685

**DOSE:** 450 PPM

**DISP:** Natural Death

**HISTO:** 44899

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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PRIMARY CAUSE OF DEATH

- Pituitary Gland Hemorrhage

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 238

TRT#: 3

SEX: Male

DAY ON TEST: 726

DOSE: 450 PPM

DISP: Terminal Sacrifice

HISTO: 44900

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Liver	* Lung
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Pancreas	* Parathyroid Gland	Peritoneum	* Pituitary Gland
Pleura	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Trachea	* Urinary Bladder

MISSING

\* Lymph Node, Mandibular

OBSERVATIONS

* Eye	Lens	Cataract	Marked
	Antr Chamber	Hemorrhage	Moderate
	[ Hemorrhage TGLS = 3-13 ]		
* Kidney	Renal Tubule	Hyperplasia	Moderate
		Nephropathy	Moderate
	[ Nephropathy TGLS = 5-7 ]		
* Lymph Node, Bronchial		Infiltration Cellular	Histiocyte, Mild
		Pigmentation	Minimal
	[ Infiltration Cellular TGLS = 1-15 ]		
* Testes	Bilateral, Interstit Cell	Adenoma	
	[ Adenoma TGLS = 4-14 ]		
* Thyroid Gland	C Cell	Carcinoma	
	[ Carcinoma TGLS = 2-3 ]		

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 239

TRT#: 3

SEX: Male

DAY ON TEST: 674

DOSE: 450 PPM

DISP: Moribund Sacrifice

HISTO: 44901

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Epididymis	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Mammary Gland	* Nose	* Pancreas
* Parathyroid Gland	Peritoneum	Pleura	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

\* Lymph Node, Bronchial

OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Marked
* Brain		Compression	Moderate
* Kidney		Nephropathy	Moderate
* Liver		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 6-6 ]			
* Lung		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 9-5 ]			
Lymph Node	Renal	Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 8-17 ]			
* Lymph Node, Mandibular		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 2-15 ]			
* Lymph Node, Mediastinal		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-3 ]			
* Lymph Node, Mesenteric		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 7-16 ]			
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 3-10 ]			
* Spleen		Fibrosis	Moderate

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Methyl isobutyl ketone  
**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014  
**Time Report Requested:** 22:41:41  
**First Dose M/F:** NA / NA  
**Lab:** BNW

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<b>ANIMAL ID:</b> 239	<b>TRT#:</b> 3	<b>SEX:</b> Male	<b>DAY ON TEST:</b> 674
	<b>DOSE:</b> 450 PPM	<b>DISP:</b> Moribund Sacrifice	<b>HISTO:</b> 44901

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Leukemia Mononuclear	
Necrosis	Marked

Note: NO CORRESPONDING LESION TO TGLS = 10.

[ Leukemia Mononuclear TGLS = 4-14 ]

[ Necrosis TGLS = 5-14 ]

* Testes	Interstit Cell	Adenoma
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PRIMARY CAUSE OF DEATH	- Spleen Leukemia Mononuclear
CONTRIBUTORY CAUSE OF DEATH	- Pituitary Gland Adenoma

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 240

TRT#: 3

SEX: Male

DAY ON TEST: 727

DOSE: 450 PPM

DISP: Terminal Sacrifice

HISTO: 44902

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Larynx	* Lung	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Pancreas	* Parathyroid Gland	Peritoneum
Pleura	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

\* Lymph Node, Mandibular

OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Marked
* Islets, Pancreatic		Adenoma	
[ Adenoma TGLS = 4-6 ]			
* Kidney	Pelvis, Transit Epithe	Hyperplasia	Mild
		Nephropathy	Marked
* Liver		Hepatodiaphragmatic Nodule	Marked
[ Hepatodiaphragmatic Nodule TGLS = 5-6 ]			
* Lymph Node, Bronchial		Ectasia	Marked
[ Ectasia TGLS = 1-15 ]			
* Nose	Nasolacrim Dct	Inflammation	Suppurative, Mild
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 2-10 ]			
* Testes	Bilateral, Interstit Cell	Adenoma	
[ Adenoma TGLS = 3-9 ]			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 241

TRT#: 3

DOSE: 450 PPM

SEX: Male

DISP: Terminal Sacrifice

DAY ON TEST: 727

HISTO: 44903

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Parathyroid Gland
Pleura	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

\* Lymph Node, Mandibular

OBSERVATIONS

* Adrenal Medulla		Pheochromocytoma Benign	
* Heart		Cardiomyopathy	Mild
* Kidney	Renal Tubule	Hyperplasia	Marked
		Nephropathy	Marked
[ Nephropathy TGLS = 8-7 ]			
* Liver		Leukemia Mononuclear	
		Necrosis	Mild
[ Leukemia Mononuclear TGLS = 7-6 ]			
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Mild
* Lymph Node, Bronchial		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 3-16 ]			
* Mammary Gland		Fibroadenoma	
[ Fibroadenoma TGLS = 2-15 ]			
* Nose		Foreign Body	Moderate
* Pancreas	Acinus	Atrophy	Mild
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 4-10 ]			
* Skin	Subcut Tiss	Fibroma	
[ Fibroma TGLS = 1-14 ]			

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01

**Test Type:** CHRONIC

**Route:** RESPIRATORY EXPOSURE WHOLE BODY

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Methyl isobutyl ketone

**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014

**Time Report Requested:** 22:41:41

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

**Lab:** BNW

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**ANIMAL ID:** 241

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 727

**DOSE:** 450 PPM

**DISP:** Terminal Sacrifice

**HISTO:** 44903

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* Spleen

Leukemia Mononuclear

\* Testes

Bilateral, Interstit Cell

Adenoma

[ Adenoma TGLS = 5,6-9+17 ]

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PRIMARY CAUSE OF DEATH

-

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 242

TRT#: 3

SEX: Male

DAY ON TEST: 471

DOSE: 450 PPM

DISP: Moribund Sacrifice

HISTO: 44904

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Liver
* Lung	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Nose	* Pancreas	* Parathyroid Gland	* Pituitary Gland
Pleura	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Kidney		Nephropathy	Mild
* Skin		Sarcoma	
[ Sarcoma TGLS = 1-14+15+16+17 ]			
* Testes	Bilateral, Interstit Cell	Adenoma	
[ Adenoma TGLS = 2-9 ]			

PRIMARY CAUSE OF DEATH

- Skin Sarcoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 243

TRT#: 3

SEX: Male

DAY ON TEST: 726

DOSE: 450 PPM

DISP: Terminal Sacrifice

HISTO: 44905

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Larynx	* Liver	* Lung	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Nose	* Parathyroid Gland
Peritoneum	Pleura	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Trachea	* Urinary Bladder	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Moderate
* Islets, Pancreatic		Adenoma	
* Kidney		Nephropathy	Marked
[ Nephropathy TGLS = 5-7 ]			
* Pancreas	Acinus	Atrophy	Mild
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 2-10 ]			
* Skin	Subcut Tiss	Fibrosarcoma	
[ Fibrosarcoma TGLS = 1-14 ]			
* Spleen		Accessory Spleen	
		Leukemia Mononuclear	
[ Accessory Spleen TGLS = 4-15 ]			
* Testes	Bilateral, Interstit Cell	Adenoma	
[ Adenoma TGLS = 3-9 ]			
* Thyroid Gland	Follicle	Cyst	Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 244

TRT#: 3

SEX: Male

DAY ON TEST: 727

DOSE: 450 PPM

DISP: Terminal Sacrifice

HISTO: 44906

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Parathyroid Gland	Peritoneum	Pleura	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Medulla		Pheochromocytoma Benign	
* Kidney		Nephropathy	Moderate
* Liver		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 3-6 ]			
* Lung	Alveolar Epith	Hyperplasia	Moderate
[ Hyperplasia TGLS = 7-14 ]		Leukemia Mononuclear	
* Mammary Gland		Fibroadenoma	
[ Fibroadenoma TGLS = 1-16 ]			
* Nose	Goblet Cell	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Pancreas	Acinus	Atrophy	Moderate
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 2-10 ]			
* Skin	Subcut Tiss	Fibrosis	Moderate
* Spleen		Fibrosis	Moderate
		Leukemia Mononuclear	
[ Fibrosis TGLS = 5-6 ]			

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 97006-01  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Methyl isobutyl ketone  
**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014  
**Time Report Requested:** 22:41:41  
**First Dose M/F:** NA / NA  
**Lab:** BNW

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**ANIMAL ID:** 244

**TRT#:** 3  
**DOSE:** 450 PPM

**SEX:** Male  
**DISP:** Terminal Sacrifice

**DAY ON TEST:** 727  
**HISTO:** 44906

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Leukemia Mononuclear TGLS = 4-6 ]

\* Testes

Bilateral, Interstit Cell

Adenoma

[ Adenoma TGLS = 6-9 ]

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PRIMARY CAUSE OF DEATH

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 245

TRT#: 3

SEX: Male

DAY ON TEST: 726

DOSE: 450 PPM

DISP: Terminal Sacrifice

HISTO: 44907

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Pancreas	* Parathyroid Gland
Peritoneum	Pleura	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Trachea	* Urinary Bladder

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Kidney		Nephropathy	Minimal
* Liver		Eosinophilic Focus	
		Leukemia Mononuclear	
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Mild
		Leukemia Mononuclear	
	[ Leukemia Mononuclear TGLS = 2-4+5 ]		
* Nose		Inflammation	Suppurative, Mild
* Pituitary Gland		Adenoma	
* Spleen		Leukemia Mononuclear	
	[ Leukemia Mononuclear TGLS = 3-14 ]		
* Testes	Bilateral, Interstit Cell	Adenoma	
	[ Adenoma TGLS = 1-9 ]		
* Thyroid Gland	C Cell	Adenoma	

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 246

TRT#: 3

SEX: Male

DAY ON TEST: 602

DOSE: 450 PPM

DISP: Moribund Sacrifice

HISTO: 44908

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lymph Node, Mediastinal
* Mammary Gland	* Nose	* Pancreas	* Parathyroid Gland
Peritoneum	Pleura	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Kidney		Leukemia Mononuclear	
		Nephropathy	Mild
* Liver		Leukemia Mononuclear	
* Lung		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 6-4+5 ]			
* Lymph Node, Mesenteric		Leukemia Mononuclear	
* Pituitary Gland		Hyperplasia	Marked
* Spleen		Hemorrhage	Marked
		Leukemia Mononuclear	
[ Hemorrhage TGLS = 5-15 ]			
[ Leukemia Mononuclear TGLS = 2,3-14 ]			
* Testes	Bilateral, Interstit Cell	Adenoma	
[ Adenoma TGLS = 4-9 ]			

PRIMARY CAUSE OF DEATH

- Spleen Hemorrhage

CONTRIBUTORY CAUSE OF DEATH

- Spleen Leukemia Mononuclear

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 247

TRT#: 3

SEX: Male

DAY ON TEST: 658

DOSE: 450 PPM

DISP: Natural Death

HISTO: 44909

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Liver	* Lung	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Pancreas	* Parathyroid Gland
Peritoneum	Pleura	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Urinary Bladder	

**MISSING**

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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**AUTO PRECLUDES DIAG.**

\* Intestine Small, Ileum

**OBSERVATIONS**

* Brain		Compression	Moderate
* Kidney	Renal Tubule	Hyperplasia	Marked
	Papilla	Mineralization	Minimal
		Nephropathy	Marked
* Nose		Inflammation	Suppurative, Mild
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 2-10 ]			
* Skin		Cyst Epithelial Inclusion	Marked
[ Cyst Epithelial Inclusion TGLS = 5-14 ]			
* Testes	Interstit Cell	Adenoma	
	Germinal Epith	Atrophy	Marked
[ Adenoma TGLS = 3-9 ]			
[ Atrophy TGLS = 4-9 ]			
* Thyroid Gland	C Cell	Carcinoma	
[ Carcinoma TGLS = 1-3 ]			
* Trachea		Inflammation	Suppurative, Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01

**Test Type:** CHRONIC

**Route:** RESPIRATORY EXPOSURE WHOLE BODY

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Methyl isobutyl ketone

**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014

**Time Report Requested:** 22:41:41

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

**Lab:** BNW

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**ANIMAL ID:** 247

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 658

**DOSE:** 450 PPM

**DISP:** Natural Death

**HISTO:** 44909

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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PRIMARY CAUSE OF DEATH

- Pituitary Gland Adenoma

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 248

TRT#: 3

SEX: Male

DAY ON TEST: 726

DOSE: 450 PPM

DISP: Terminal Sacrifice

HISTO: 44910

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Nose	* Pancreas	* Parathyroid Gland
Peritoneum	Pleura	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

**MISSING**

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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**OBSERVATIONS**

* Heart		Cardiomyopathy	Mild
* Kidney		Nephropathy	Minimal
* Liver		Clear Cell Focus	
		Hepatodiaphragmatic Nodule	Marked
[ Hepatodiaphragmatic Nodule TGLS = 4-6 ]			
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Minimal
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 1-10 ]			
* Testes	Bilateral, Interstit Cell	Adenoma	
[ Adenoma TGLS = 2,3-9 ]			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 249

TRT#: 3

SEX: Male

DAY ON TEST: 618

DOSE: 450 PPM

DISP: Moribund Sacrifice

HISTO: 44911

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Blood Vessel	* Bone	* Bone Marrow	* Epididymis
* Esophagus	* Eye	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx
* Liver	* Lung	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Nose	* Parathyroid Gland	Peritoneum
Pleura	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

**MISSING**

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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**OBSERVATIONS**

* Adrenal Cortex		Vacuolization Cytoplasmic	Moderate
* Adrenal Medulla		Hyperplasia	Mild
* Brain		Compression	Marked
* Kidney		Nephropathy	Mild
* Pancreas	Acinus	Atrophy	Moderate
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 2-10 ]			
* Testes	Interstit Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

- Pituitary Gland Adenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 250

TRT#: 3

SEX: Male

DAY ON TEST: 551

DOSE: 450 PPM

DISP: Moribund Sacrifice

HISTO: 44912

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Harderian Gland	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney
* Larynx	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Pancreas	* Parathyroid Gland	Peripheral Nerve	Peritoneum
Pleura	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	Spinal Cord	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

\* Lymph Node, Mandibular

OBSERVATIONS

* Eye	Antr Chamber	Inflammation	Suppurative, Mild
* Heart		Sarcoma	Metastatic (Lung)
[ Sarcoma TGLS = 8-14 ]			
* Intestine Large, Cecum		Ulcer	Marked
[ Ulcer TGLS = 6-14 ]			
* Liver	Centrilobular	Necrosis	Moderate
[ Necrosis TGLS = 4-6 ]			
* Lung	Mediastinum	Sarcoma	
Note: The mass in the thoracic cavity contains squamous epithelium,giant cells, and spindle cells. Best Dx is teratoma, not available. rar			
[ Sarcoma TGLS = 7-3+15 ]			
* Lymph Node, Bronchial		Sarcoma	Metastatic (Lung)
* Lymph Node, Mediastinal		Sarcoma	Metastatic (Lung)
* Pituitary Gland		Hyperplasia	Marked
[ Hyperplasia TGLS = 2-10 ]			
Skeletal Muscle		Sarcoma	Metastatic (Lung)
[ Sarcoma TGLS = 5-16 ]			
* Testes	Bilateral, Interstit Cell	Adenoma	

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 97006-01  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Methyl isobutyl ketone  
**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014  
**Time Report Requested:** 22:41:41  
**First Dose M/F:** NA / NA  
**Lab:** BNW

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<b>ANIMAL ID:</b> 250	<b>TRT#:</b> 3	<b>SEX:</b> Male	<b>DAY ON TEST:</b> 551
	<b>DOSE:</b> 450 PPM	<b>DISP:</b> Moribund Sacrifice	<b>HISTO:</b> 44912

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Adenoma TGLS = 3-9 ]

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**PRIMARY CAUSE OF DEATH** - Lung Mediastinum Sarcoma

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 401

TRT#: 5

SEX: Male

DAY ON TEST: 727

DOSE: 900 PPM

DISP: Terminal Sacrifice

HISTO: 44763

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Nose	* Pancreas	* Parathyroid Gland	Peritoneum
Pleura	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

\* Lymph Node, Mandibular

OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Moderate
* Kidney	Renal Tubule	Adenoma	
	Papilla	Mineralization	Minimal
		Nephropathy	Mild
			[ Adenoma TGLS = 8-7 ]
* Larynx		Foreign Body	Marked
* Liver		Eosinophilic Focus	
		Leukemia Mononuclear	
			[ Leukemia Mononuclear TGLS = 6-6 ]
* Lung	Alveolar Epith	Hyperplasia	Moderate
		Leukemia Mononuclear	
			[ Hyperplasia TGLS = 7-14 ]
* Lymph Node, Bronchial		Leukemia Mononuclear	
			[ Leukemia Mononuclear TGLS = 1-15 ]
* Pituitary Gland		Adenoma	
			[ Adenoma TGLS = 2-10 ]
* Spleen		Leukemia Mononuclear	
			[ Leukemia Mononuclear TGLS = 4,5-14 ]

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Methyl isobutyl ketone  
**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014  
**Time Report Requested:** 22:41:41  
**First Dose M/F:** NA / NA  
**Lab:** BNW

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<b>ANIMAL ID:</b> 401	<b>TRT#:</b> 5 <b>DOSE:</b> 900 PPM	<b>SEX:</b> Male <b>DISP:</b> Terminal Sacrifice	<b>DAY ON TEST:</b> 727 <b>HISTO:</b> 44763
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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Testes [ Adenoma TGLS = 3-9 ]	Interstit Cell Germinal Epith	Adenoma Atrophy	Moderate
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PRIMARY CAUSE OF DEATH

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 402

TRT#: 5

SEX: Male

DAY ON TEST: 727

DOSE: 900 PPM

DISP: Terminal Sacrifice

HISTO: 44764

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lung	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Nose	* Pancreas
* Parathyroid Gland	Peritoneum	Pleura	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Medulla	Bilateral	Pheochromocytoma Benign	
* Kidney	Papilla	Mineralization	Mild
		Nephropathy	Moderate
* Liver		Clear Cell Focus	
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 2-10 ]			
* Skin		Keratoacanthoma	
[ Keratoacanthoma TGLS = 3-15 ]			
* Spleen		Leukemia Mononuclear	
* Testes	Bilateral, Interstit Cell	Adenoma	
[ Adenoma TGLS = 1-9 ]			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 403

TRT#: 5

SEX: Male

DAY ON TEST: 726

DOSE: 900 PPM

DISP: Terminal Sacrifice

HISTO: 44765

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lung
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Pancreas	* Parathyroid Gland	Peritoneum	Pleura
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Spleen	* Stomach, Forestomach	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Kidney	Papilla	Mineralization	Mild
		Nephropathy	Mild
* Liver		Clear Cell Focus	
* Pituitary Gland		Hyperplasia	Moderate
* Stomach, Glandular	Serosa	Fibrosis	Mild
* Testes	Bilateral, Interstit Cell	Adenoma	

[ Adenoma TGLS = 1-9 ]

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 404

TRT#: 5

SEX: Male

DAY ON TEST: 580

DOSE: 900 PPM

DISP: Natural Death

HISTO: 44766

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Larynx	* Liver	* Lung
* Lymph Node, Mesenteric	* Mammary Gland	* Nose	* Parathyroid Gland
Peripheral Nerve	Peritoneum	Pleura	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	Skeletal Muscle
* Skin	Spinal Cord	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
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OBSERVATIONS

* Islets, Pancreatic [ Carcinoma TGLS = 3-14 ]		Carcinoma	
* Kidney		Nephropathy	Mild
* Pancreas Note: tgl 3 is pancreatic mass with hemorrhage, not spleen. [ Hemorrhage TGLS = 3-14 ]		Hemorrhage	Marked
* Pituitary Gland Note: Pituitary tumor is large enough to compress but no evidence of compression in brain sections. [ Adenoma TGLS = 2-10 ]		Adenoma	
* Testes	Interstit Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH - Islets, Pancreatic Carcinoma

CONTRIBUTORY CAUSE OF DEATH - Pancreas Hemorrhage

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 405

TRT#: 5

SEX: Male

DAY ON TEST: 727

DOSE: 900 PPM

DISP: Terminal Sacrifice

HISTO: 44767

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lung	* Lymph Node, Bronchial	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Nose	* Pancreas	* Parathyroid Gland
Peripheral Nerve	Peritoneum	Pleura	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	Skeletal Muscle
* Skin	Spinal Cord	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

\* Lymph Node, Mandibular

OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Minimal
* Heart		Cardiomyopathy	Mild
* Kidney	Papilla	Mineralization	Mild
		Nephropathy	Marked
[ Nephropathy TGLS = 6-7 ]			
* Liver		Basophilic Focus	
		Eosinophilic Focus	
* Mammary Gland		Fibroadenoma	
		Galactocele	Moderate
[ Fibroadenoma TGLS = 1-15 ]			
Mesentery		Necrosis	Moderate
[ Necrosis TGLS = 3-16 ]			
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 2-10 ]			
* Testes	Bilateral, Interstit Cell	Adenoma	
[ Adenoma TGLS = 4,5-9 ]			

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Methyl isobutyl ketone  
**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014  
**Time Report Requested:** 22:41:41  
**First Dose M/F:** NA / NA  
**Lab:** BNW

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**ANIMAL ID:** 405

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 727

**DOSE:** 900 PPM

**DISP:** Terminal Sacrifice

**HISTO:** 44767

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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: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 406

TRT#: 5

DOSE: 900 PPM

SEX: Male

DISP: Terminal Sacrifice

DAY ON TEST: 727

HISTO: 44768

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Nose	* Pancreas	* Parathyroid Gland	Peritoneum
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Mild
* Heart		Cardiomyopathy	Mild
* Kidney	Pelvis, Transit Epithe	Hyperplasia	Minimal
	Renal Tubule	Hyperplasia	Mild
	Papilla	Mineralization	Minimal
		Nephropathy	Marked
Note: 4+hyperplasia with piling up of cells near arrow on right kidney [ Nephropathy TGLS = 3-7 ]			
* Liver		Clear Cell Focus	
* Lung	Interstitialium	Fibrosis	Minimal
	Alveolus	Infiltration Cellular	Histiocyte, Mild
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 1-10 ]			
Pleura		Inflammation	Chronic, Minimal
* Skin		Hyperkeratosis	Marked
		Hyperplasia	Squamous, Focal, Mild
[ Hyperkeratosis TGLS = 4-14 ]			
* Spleen		Leukemia Mononuclear	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Methyl isobutyl ketone  
**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014  
**Time Report Requested:** 22:41:41  
**First Dose M/F:** NA / NA  
**Lab:** BNW

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<b>ANIMAL ID:</b> 406	<b>TRT#:</b> 5	<b>SEX:</b> Male	<b>DAY ON TEST:</b> 727
	<b>DOSE:</b> 900 PPM	<b>DISP:</b> Terminal Sacrifice	<b>HISTO:</b> 44768

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Testes [ Adenoma TGLS = 2-9 ]	Bilateral, Interstit Cell	Adenoma
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PRIMARY CAUSE OF DEATH

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 407

TRT#: 5

SEX: Male

DAY ON TEST: 727

DOSE: 900 PPM

DISP: Terminal Sacrifice

HISTO: 44769

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lung	* Lymph Node, Bronchial
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Nose	* Pancreas	* Parathyroid Gland	Peritoneum
Pleura	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

OBSERVATIONS

* Adrenal Cortex		Vacuolization Cytoplasmic	Mild
* Kidney	Papilla	Mineralization	Minimal
		Nephropathy	Moderate
* Liver		Basophilic Focus	
		Clear Cell Focus	
		Eosinophilic Focus	
* Pituitary Gland		Leukemia Mononuclear	
* Spleen		Hyperplasia	Moderate
		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 2-6 ]			
* Testes	Bilateral, Interstit Cell	Adenoma	
[ Adenoma TGLS = 1-9 ]			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 408

TRT#: 5

SEX: Male

DAY ON TEST: 726

DOSE: 900 PPM

DISP: Terminal Sacrifice

HISTO: 44770

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lung
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Parathyroid Gland	Peritoneum	Pleura	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Kidney		Nephropathy	Minimal
* Liver		Clear Cell Focus	
		Hepatodiaphragmatic Nodule	Marked
		Leukemia Mononuclear	
[ Hepatodiaphragmatic Nodule TGLS = 1-15 ]			
Mesentery		Necrosis	Moderate
[ Necrosis TGLS = 4-14 ]			
* Pancreas	Acinus	Atrophy	Mild
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 2-10 ]			
* Spleen		Leukemia Mononuclear	
* Testes	Bilateral, Interstit Cell	Adenoma	
[ Adenoma TGLS = 3-9 ]			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 409

TRT#: 5

DOSE: 900 PPM

SEX: Male

DISP: Moribund Sacrifice

DAY ON TEST: 695

HISTO: 44771

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Nose	* Pancreas	* Parathyroid Gland
Peritoneum	Pleura	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Spleen
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Mild
* Kidney	Renal Tubule	Adenoma	
		Nephropathy	Marked
	[ Nephropathy TGLS = 4-7 ]		
* Liver		Basophilic Focus	
		Clear Cell Focus	
		Hepatodiaphragmatic Nodule	Marked
	[ Basophilic Focus TGLS = 9-6 ]		
	[ Hepatodiaphragmatic Nodule TGLS = 8-14 ]		
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Minimal
Mesentery		Necrosis	Moderate
	[ Necrosis TGLS = 2-14 ]		
* Pituitary Gland		Adenoma	
	[ Adenoma TGLS = 3-10 ]		
* Stomach, Forestomach		Ulcer	Mild
* Testes	Interstit Cell	Adenoma	
	Germinal Epith	Atrophy	Marked

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01

**Test Type:** CHRONIC

**Route:** RESPIRATORY EXPOSURE WHOLE BODY

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Methyl isobutyl ketone

**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014

**Time Report Requested:** 22:41:41

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

**Lab:** BNW

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**ANIMAL ID:** 409

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 695

**DOSE:** 900 PPM

**DISP:** Moribund Sacrifice

**HISTO:** 44771

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Adenoma TGLS = 6,7-9 ]

[ Atrophy TGLS = 5-9 ]

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PRIMARY CAUSE OF DEATH

- Pituitary Gland Adenoma

CONTRIBUTORY CAUSE OF DEATH

- Stomach;Forestomach Ulcer

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 410

TRT#: 5

DOSE: 900 PPM

SEX: Male

DISP: Moribund Sacrifice

DAY ON TEST: 637

HISTO: 44772

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Epididymis	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Mammary Gland	* Nose	* Pancreas
* Parathyroid Gland	Peritoneum	Pleura	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea

MISSING

\* Lymph Node, Mandibular

OBSERVATIONS

* Adrenal Medulla		Hyperplasia Leukemia Mononuclear Pheochromocytoma Benign	Mild
* Brain		Hemorrhage	Marked
[ Hemorrhage TGLS = 11-1 ]			
* Kidney		Leukemia Mononuclear Mineralization	Minimal
* Liver	Papilla	Leukemia Mononuclear Vacuolization Cytoplasmic	Marked
[ Leukemia Mononuclear TGLS = 4-6 ]			
[ Vacuolization Cytoplasmic TGLS = 3-6 ]			
* Lung		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 13-15 ]			
Lymph Node	Deep Cervical Pancreatic	Leukemia Mononuclear Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 7-21 ]			
[ Leukemia Mononuclear TGLS = 6-17 ]			
* Lymph Node, Bronchial		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 2-14 ]			

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01

**Test Type:** CHRONIC

**Route:** RESPIRATORY EXPOSURE WHOLE BODY

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Methyl isobutyl ketone

**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014

**Time Report Requested:** 22:41:41

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

**Lab:** BNW

**ANIMAL ID:** 410

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 637

**DOSE:** 900 PPM

**DISP:** Moribund Sacrifice

**HISTO:** 44772

**ORGAN AND ACCOUNTABLE SITE STATUS**

* Lymph Node, Mediastinal [ Leukemia Mononuclear TGLS = 12-3+4 ]		Leukemia Mononuclear	
* Lymph Node, Mesenteric [ Leukemia Mononuclear TGLS = 10-18 ]		Leukemia Mononuclear	
* Pituitary Gland [ Adenoma TGLS = 18-10 ]		Adenoma	
* Spleen [ Leukemia Mononuclear TGLS = 5-16 ] [ Necrosis TGLS = 14,15-16 ]		Leukemia Mononuclear Necrosis	Marked
* Stomach, Forestomach [ Ulcer TGLS = 17-20 ]		Ulcer	Moderate
* Testes [ Adenoma TGLS = 9-9 ] [ Atrophy TGLS = 8-9 ]	Bilateral, Interstit Cell Germinal Epith	Adenoma Atrophy	Mild
* Urinary Bladder [ Leukemia Mononuclear TGLS = 16-19 ]		Leukemia Mononuclear	

PRIMARY CAUSE OF DEATH - Spleen Leukemia Mononuclear

CONTRIBUTORY CAUSE OF DEATH - Brain Hemorrhage;Stomach;Forestomach Ulcer

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 411

TRT#: 5

SEX: Male

DAY ON TEST: 702

DOSE: 900 PPM

DISP: Moribund Sacrifice

HISTO: 44773

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lung	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Nose	* Pancreas
* Parathyroid Gland	Peritoneum	Pleura	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Spleen	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Minimal
	Bilateral	Pheochromocytoma Benign	
* Kidney	Pelvis, Transit Epithe	Hyperplasia	Minimal
		Nephropathy	Marked
	[ Nephropathy TGLS = 5-7+14 ]		
* Liver		Basophilic Focus	
		Eosinophilic Focus	
		Hepatodiaphragmatic Nodule	Marked
	[ Hepatodiaphragmatic Nodule TGLS = 4-6 ]		
* Pituitary Gland		Adenoma	
	[ Adenoma TGLS = 1-10 ]		
* Stomach, Forestomach		Hyperplasia	Squamous, Mild
		Ulcer	Marked
	[ Hyperplasia TGLS = 6-15 ]		
	[ Ulcer TGLS = 6-15 ]		
* Testes	Bilateral, Interstit Cell	Adenoma	
	[ Adenoma TGLS = 2,3-9 ]		

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Methyl isobutyl ketone  
**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014  
**Time Report Requested:** 22:41:41  
**First Dose M/F:** NA / NA  
**Lab:** BNW

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**ANIMAL ID:** 411

**TRT#:** 5  
**DOSE:** 900 PPM

**SEX:** Male  
**DISP:** Moribund Sacrifice

**DAY ON TEST:** 702  
**HISTO:** 44773

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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PRIMARY CAUSE OF DEATH	- Stomach, Forestomach	Ulcer
CONTRIBUTORY CAUSE OF DEATH	- Pituitary Gland	Adenoma

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 412

TRT#: 5

SEX: Male

DAY ON TEST: 726

DOSE: 900 PPM

DISP: Terminal Sacrifice

HISTO: 44774

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lung	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Nose	* Pancreas
* Parathyroid Gland	Peritoneum	Pleura	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

**MISSING**

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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**INSUFFICIENT TISSUE**

\* Eye

**OBSERVATIONS**

* Kidney	Nephropathy	Mild
* Liver	Clear Cell Focus	
	Eosinophilic Focus	
	Hepatodiaphragmatic Nodule	Marked
[ Hepatodiaphragmatic Nodule TGLS = 2-14 ]		
* Pituitary Gland	Adenoma	
[ Adenoma TGLS = 1-10 ]		
* Testes	Bilateral, Interstit Cell	
[ Adenoma TGLS = 3,4-9 ]		

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 413

TRT#: 5

SEX: Male

DAY ON TEST: 619

DOSE: 900 PPM

DISP: Natural Death

HISTO: 44775

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Islets, Pancreatic	* Larynx	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Nose	* Pancreas
* Parathyroid Gland	Peritoneum	* Pituitary Gland	Pleura
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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AUTO PRECLUDES DIAG.

* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
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OBSERVATIONS

* Heart		Cardiomyopathy	Moderate
[ Cardiomyopathy TGLS = 6-6 ]			
* Kidney		Leukemia Mononuclear	
		Nephropathy	Minimal
* Liver		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 5-6 ]			
* Lung		Leukemia Mononuclear	
* Spleen		Hemorrhage	Marked
		Leukemia Mononuclear	
[ Hemorrhage TGLS = 2-14 ]			
[ Leukemia Mononuclear TGLS = 1-14 ]			
* Testes	Bilateral, Interstit Cell	Adenoma	
[ Adenoma TGLS = 3,4-9 ]			

PRIMARY CAUSE OF DEATH - Spleen Leukemia Mononuclear

CONTRIBUTORY CAUSE OF DEATH - Spleen Hemorrhage

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 414

TRT#: 5

SEX: Male

DAY ON TEST: 702

DOSE: 900 PPM

DISP: Moribund Sacrifice

HISTO: 44776

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Nose	* Pancreas	* Parathyroid Gland	Peripheral Nerve
Peritoneum	Pleura	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	Skeletal Muscle	* Skin
Spinal Cord	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Trachea	* Urinary Bladder		

MISSING

\* Lymph Node, Mandibular

OBSERVATIONS

* Adrenal Medulla	Bilateral	Pheochromocytoma Benign	
* Kidney	Renal Tubule	Cyst	
	Renal Tubule	Hyperplasia	Moderate
		Nephropathy	Marked
[ Cyst TGLS = 9-7 ]			
[ Nephropathy TGLS = 8-7 ]			
* Larynx		Foreign Body	Marked
	Epiglottis	Hyperplasia	Mild
* Liver		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 7-6 ]			
* Lung		Carcinoma	Metastatic (Thyroid Gland)
		Inflammation	Suppurative, Mild
Lymph Node	Renal	Ectasia	Moderate
[ Ectasia TGLS = 6-15 ]			
* Lymph Node, Bronchial		Carcinoma	Metastatic (Thyroid Gland)
		Ectasia	Moderate
[ Carcinoma TGLS = 2-14 ]			

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01

**Test Type:** CHRONIC

**Route:** RESPIRATORY EXPOSURE WHOLE BODY

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Methyl isobutyl ketone

**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014

**Time Report Requested:** 22:41:41

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

**Lab:** BNW

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**ANIMAL ID:** 414

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 702

**DOSE:** 900 PPM

**DISP:** Moribund Sacrifice

**HISTO:** 44776

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Ectasia TGLS = 2-14 ]		
* Pituitary Gland		Adenoma
[ Adenoma TGLS = 3-10 ]		
* Spleen		Leukemia Mononuclear
* Testes	Bilateral, Interstit Cell	Adenoma
[ Adenoma TGLS = 4,5-9 ]		
* Thyroid Gland	Follicular Cel	Carcinoma
[ Carcinoma TGLS = 1-3 ]		

---

PRIMARY CAUSE OF DEATH - Thyroid Gland Follicular Cel Carcinoma

CONTRIBUTORY CAUSE OF DEATH - Pituitary Gland Adenoma

---

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 415

TRT#: 5

SEX: Male

DAY ON TEST: 205

DOSE: 900 PPM

DISP: Natural Death

HISTO: 44777

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                          |
|---------------------------|-----------------------------|--------------------------|--------------------------|
| * Adrenal Cortex          | * Adrenal Medulla           | Blood Vessel             | * Bone                   |
| * Bone Marrow             | * Epididymis                | * Esophagus              | * Eye                    |
| * Harderian Gland         | * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Islets, Pancreatic     | * Larynx                 |
| * Liver                   | * Lymph Node, Mediastinal   | * Lymph Node, Mesenteric | * Mammary Gland          |
| * Nose                    | * Pancreas                  | * Parathyroid Gland      | Peritoneum               |
| * Pituitary Gland         | Pleura                      | * Preputial Gland        | * Prostate               |
| * Salivary Glands         | * Seminal Vesicle           | * Skin                   | * Stomach, Forestomach   |
| * Stomach, Glandular      | * Testes                    | * Thymus                 | * Thyroid Gland          |
| * Trachea                 | * Urinary Bladder           |                          |                          |

MISSING

- |                         |                          |
|-------------------------|--------------------------|
| * Lymph Node, Bronchial | * Lymph Node, Mandibular |
|-------------------------|--------------------------|

AUTO PRECLUDES DIAG.

- |                          |                            |
|--------------------------|----------------------------|
| * Intestine Small, Ileum | * Intestine Small, Jejunum |
|--------------------------|----------------------------|

OBSERVATIONS

- |                           |                      |         |
|---------------------------|----------------------|---------|
| * Brain                   | Hemorrhage           | Marked  |
| [ Hemorrhage TGLS = 2-1 ] |                      |         |
| * Kidney                  | Nephropathy          | Minimal |
| * Lung                    | Hemorrhage           | Marked  |
| * Spleen                  | Leukemia Mononuclear |         |

PRIMARY CAUSE OF DEATH

- Brain Hemorrhage

CONTRIBUTORY CAUSE OF DEATH

- Lung Hemorrhage

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 416

TRT#: 5

SEX: Male

DAY ON TEST: 707

DOSE: 900 PPM

DISP: Moribund Sacrifice

HISTO: 44778

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * Adrenal Cortex            | Blood Vessel             | * Bone                     | * Bone Marrow             |
| * Brain                     | * Epididymis             | * Esophagus                | * Eye                     |
| * Harderian Gland           | * Intestine Large, Cecum | * Intestine Large, Colon   | * Intestine Large, Rectum |
| * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic      |
| * Larynx                    | * Mammary Gland          | * Nose                     | * Pancreas                |
| * Parathyroid Gland         | Peritoneum               | Pleura                     | * Preputial Gland         |
| * Prostate                  | * Salivary Glands        | * Seminal Vesicle          | * Skin                    |
| * Stomach, Glandular        | * Thymus                 | * Thyroid Gland            | * Trachea                 |
| * Urinary Bladder           |                          |                            |                           |

**MISSING**

- |                         |                          |
|-------------------------|--------------------------|
| * Lymph Node, Bronchial | * Lymph Node, Mandibular |
|-------------------------|--------------------------|

**OBSERVATIONS**

- |                                       |               |                         |          |
|---------------------------------------|---------------|-------------------------|----------|
| * Adrenal Medulla                     |               | Hyperplasia             | Mild     |
|                                       |               | Pheochromocytoma Benign |          |
| * Heart                               | Atrium        | Thrombosis              | Moderate |
| * Kidney                              |               | Infarct                 |          |
|                                       |               | Leukemia Mononuclear    |          |
|                                       |               | Nephropathy             | Mild     |
|                                       |               |                         |          |
|                                       |               |                         |          |
| [ Infarct TGLS = 10-7 ]               |               |                         |          |
| [ Nephropathy TGLS = 9-7 ]            |               |                         |          |
| * Liver                               |               | Leukemia Mononuclear    |          |
|                                       |               |                         |          |
| [ Leukemia Mononuclear TGLS = 8-6 ]   |               |                         |          |
| * Lung                                |               | Hemorrhage              | Moderate |
|                                       |               | Leukemia Mononuclear    |          |
|                                       |               |                         |          |
| [ Leukemia Mononuclear TGLS = 3-4+5 ] |               |                         |          |
| Lymph Node                            | Deep Cervical | Leukemia Mononuclear    |          |
|                                       |               |                         |          |
| [ Leukemia Mononuclear TGLS = 2-16 ]  |               |                         |          |
| * Lymph Node, Mediastinal             |               | Leukemia Mononuclear    |          |
| * Lymph Node, Mesenteric              |               | Leukemia Mononuclear    |          |
|                                       |               |                         |          |
| [ Leukemia Mononuclear TGLS = 11-15 ] |               |                         |          |

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 97006-01  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Methyl isobutyl ketone  
**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014  
**Time Report Requested:** 22:41:41  
**First Dose M/F:** NA / NA  
**Lab:** BNW

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<b>ANIMAL ID:</b> 416	<b>TRT#:</b> 5	<b>SEX:</b> Male	<b>DAY ON TEST:</b> 707
	<b>DOSE:</b> 900 PPM	<b>DISP:</b> Moribund Sacrifice	<b>HISTO:</b> 44778

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Pituitary Gland [ Adenoma TGLS = 7-10 ]		Adenoma	
* Spleen [ Leukemia Mononuclear TGLS = 5-14 ] [ Necrosis TGLS = 6-14 ]		Leukemia Mononuclear Necrosis	Marked
* Stomach, Forestomach		Ulcer	Moderate
* Testes [ Adenoma TGLS = 4-9 ]	Bilateral, Interstit Cell	Adenoma	

---

PRIMARY CAUSE OF DEATH	- Spleen	Leukemia Mononuclear
CONTRIBUTORY CAUSE OF DEATH	- Spleen	Necrosis

---

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 417

TRT#: 5

DOSE: 900 PPM

SEX: Male

DISP: Moribund Sacrifice

DAY ON TEST: 670

HISTO: 44779

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Nose	* Pancreas	* Parathyroid Gland	Penis
Peritoneum	Pleura	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Minimal
* Heart	Atrium	Thrombosis	Mild
* Kidney	Papilla	Mineralization	Minimal
		Nephropathy	Moderate
[ Nephropathy TGLS = 8-7 ]			
* Liver		Degeneration	Cystic, Marked
	Bile Duct	Hyperplasia	Mild
		Leukemia Mononuclear	
[ Degeneration TGLS = 10-15 ]			
[ Leukemia Mononuclear TGLS = 7-6 ]			
* Lung		Leukemia Mononuclear	
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 1-10 ]			
* Spleen		Leukemia Mononuclear	
		Necrosis	Marked
[ Leukemia Mononuclear TGLS = 4-14 ]			
[ Necrosis TGLS = 5-14 ]			

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01

**Test Type:** CHRONIC

**Route:** RESPIRATORY EXPOSURE WHOLE BODY

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Methyl isobutyl ketone

**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014

**Time Report Requested:** 22:41:41

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

**Lab:** BNW

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**ANIMAL ID:** 417

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 670

**DOSE:** 900 PPM

**DISP:** Moribund Sacrifice

**HISTO:** 44779

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

\* Testes

Bilateral, Interstit Cell

Adenoma

[ Adenoma TGLS = 2,3-9 ]

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PRIMARY CAUSE OF DEATH

- Spleen Leukemia Mononuclear

CONTRIBUTORY CAUSE OF DEATH

- Spleen Necrosis

---

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 418

TRT#: 5

DOSE: 900 PPM

SEX: Male

DISP: Moribund Sacrifice

DAY ON TEST: 695

HISTO: 44780

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Harderian Gland
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Pancreas	* Parathyroid Gland	Peritoneum	Pleura
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Medulla		Pheochromocytoma Benign	
* Eye	Lens	Cataract	Moderate
[ Cataract TGLS = 1-13 ]			
* Heart	Atrium	Thrombosis	Moderate
* Kidney	Papilla	Infarct	
		Mineralization	Minimal
		Nephropathy	Mild
[ Infarct TGLS = 7-15 ]			
[ Nephropathy TGLS = 8-7 ]			
* Liver		Eosinophilic Focus	
		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 6-6 ]			
* Lung		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 9-4+5+14 ]			
Lymph Node	Pancreatic	Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 4-16 ]			
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 2-10 ]			

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01

**Test Type:** CHRONIC

**Route:** RESPIRATORY EXPOSURE WHOLE BODY

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Methyl isobutyl ketone

**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014

**Time Report Requested:** 22:41:41

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

**Lab:** BNW

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**ANIMAL ID:** 418

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 695

**DOSE:** 900 PPM

**DISP:** Moribund Sacrifice

**HISTO:** 44780

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* Spleen

[ Leukemia Mononuclear TGLS = 5-15 ]

Leukemia Mononuclear

\* Testes

Bilateral, Interstit Cell

Adenoma

Germinal Epith

Atrophy

Marked

[ Adenoma TGLS = 3-9 ]

[ Atrophy TGLS = 3-9 ]

---

**PRIMARY CAUSE OF DEATH**

- Spleen Leukemia Mononuclear

---

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 419

TRT#: 5

SEX: Male

DAY ON TEST: 726

DOSE: 900 PPM

DISP: Terminal Sacrifice

HISTO: 44781

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lung	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Nose	* Pancreas
* Parathyroid Gland	Peritoneum	Pleura	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

**MISSING**

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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**OBSERVATIONS**

* Eye	Lens	Cataract	Moderate
* Kidney	Papilla	Mineralization	Mild
		Nephropathy	Moderate
* Liver		Clear Cell Focus	
Mesentery		Necrosis	Moderate
[ Necrosis TGLS = 2-14 ]			
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 1-10 ]			
* Testes	Bilateral, Interstit Cell	Adenoma	
[ Adenoma TGLS = 3-9 ]			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 420

TRT#: 5

SEX: Male

DAY ON TEST: 637

DOSE: 900 PPM

DISP: Moribund Sacrifice

HISTO: 44782

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Mediastinal	* Mammary Gland	* Nose
* Pancreas	* Parathyroid Gland	Peritoneum	Pleura
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Thymus	* Trachea	* Urinary Bladder

MISSING

\* Lymph Node, Mandibular

OBSERVATIONS

* Adrenal Cortex		Vacuolization Cytoplasmic	Mild
* Kidney		Leukemia Mononuclear	
		Nephropathy	Mild
* Larynx		Foreign Body	Mild
		Inflammation	Suppurative, Mild
* Liver		Leukemia Mononuclear	
	[ Leukemia Mononuclear TGLS = 4,5-6 ]		
* Lung		Leukemia Mononuclear	
* Lymph Node, Bronchial		Leukemia Mononuclear	
	[ Leukemia Mononuclear TGLS = 1-14 ]		
* Lymph Node, Mesenteric		Leukemia Mononuclear	
	[ Leukemia Mononuclear TGLS = 6-16 ]		
* Pituitary Gland		Hyperplasia	Moderate
* Spleen		Leukemia Mononuclear	
	[ Leukemia Mononuclear TGLS = 3-15 ]		
* Stomach, Forestomach		Ulcer	Moderate
* Stomach, Glandular		Erosion	Moderate
* Testes	Bilateral, Interstit Cell	Adenoma	
	[ Adenoma TGLS = 2-9 ]		

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01

**Test Type:** CHRONIC

**Route:** RESPIRATORY EXPOSURE WHOLE BODY

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Methyl isobutyl ketone

**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014

**Time Report Requested:** 22:41:41

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

**Lab:** BNW

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**ANIMAL ID:** 420

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 637

**DOSE:** 900 PPM

**DISP:** Moribund Sacrifice

**HISTO:** 44782

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* Thyroid Gland

C Cell

Hyperplasia

Minimal

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PRIMARY CAUSE OF DEATH

- Spleen Leukemia Mononuclear

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\* PROTOCOL REQUIRED TISSUE



Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 421

TRT#: 5

SEX: Male

DAY ON TEST: 726

DOSE: 900 PPM

DISP: Terminal Sacrifice

HISTO: 44783

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Epididymis	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Nose	* Pancreas	* Parathyroid Gland
Peritoneum	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

\* Lymph Node, Bronchial

OBSERVATIONS

* Adrenal Medulla		Pheochromocytoma Benign	
* Brain		Compression	Minimal
* Kidney		Nephropathy	Mild
* Liver		Basophilic Focus	
		Clear Cell Focus	
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic, Minimal
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 2-10 ]			
Pleura		Inflammation	Chronic, Mild
* Testes	Bilateral, Interstit Cell	Adenoma	
[ Adenoma TGLS = 3-9 ]			

PRIMARY CAUSE OF DEATH

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 422

TRT#: 5

SEX: Male

DAY ON TEST: 57

DOSE: 900 PPM

DISP: Moribund Sacrifice

HISTO: 44784

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Liver	* Lung
* Mammary Gland	* Nose	* Pancreas	* Parathyroid Gland
Peritoneum	* Pituitary Gland	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Testes	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

**MISSING**

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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**OBSERVATIONS**

* Heart		Cardiomyopathy	Mild
	Pericardium	Fibrosis	Moderate
	Pericardium	Inflammation	Chronic, Marked
[ Fibrosis TGLS = 5-6 ]			
* Kidney	Renal Tubule	Accumulation, Hyaline Droplet	Minimal
* Lymph Node, Mediastinal		Hyperplasia	Lymphoid, Moderate
[ Hyperplasia TGLS = 2-15 ]			
* Lymph Node, Mesenteric		Hyperplasia	Lymphoid, Moderate
[ Hyperplasia TGLS = 4-8 ]			
Pleura		Inflammation	Chronic, Mild

**PRIMARY CAUSE OF DEATH**

- Heart Pericardium Inflammation

Animal Note: cause of moribund condition not clearly apparent, but likely related to fluid in thoracic cavity and pericardial/pleural lesions. rar

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 423

TRT#: 5

SEX: Male

DAY ON TEST: 727

DOSE: 900 PPM

DISP: Terminal Sacrifice

HISTO: 44785

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Pancreas	* Parathyroid Gland	Peritoneum
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Mild
* Kidney	Papilla	Mineralization	Minimal
		Nephropathy	Moderate
* Liver		Basophilic Focus	
		Clear Cell Focus	
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Mild
* Nose		Foreign Body	Moderate
	Respirat Epith	Hyperplasia	Mild
		Inflammation	Suppurative, Mild
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 1-10 ]			
Pleura		Inflammation	Chronic, Minimal
* Testes	Bilateral, Interstit Cell	Adenoma	
[ Adenoma TGLS = 2-9 ]			

PRIMARY CAUSE OF DEATH

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 424

TRT#: 5

SEX: Male

DAY ON TEST: 726

DOSE: 900 PPM

DISP: Terminal Sacrifice

HISTO: 44786

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
* Mammary Gland	* Pancreas	* Parathyroid Gland	Peritoneum
Pleura	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

OBSERVATIONS

* Adrenal Medulla		Pheochromocytoma Malignant	
		Thrombosis	Marked
[ Thrombosis TGLS = 7-7 ]			
* Intestine Large, Rectum		Adenoma	
[ Adenoma TGLS = 14-16 ]			
* Kidney		Leukemia Mononuclear	
		Nephropathy	Moderate
[ Nephropathy TGLS = 6-7 ]			
* Liver		Hemorrhage	Marked
		Leukemia Mononuclear	
		Necrosis	Moderate
[ Leukemia Mononuclear TGLS = 9-6 ]			
* Lung		Hemorrhage	Moderate
		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-4+5+17 ]			
Lymph Node	Pancreatic	Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 8-14 ]			
* Lymph Node, Mesenteric		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 13-20 ]			
Mesentery		Necrosis	Moderate

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 424

TRT#: 5

SEX: Male

DAY ON TEST: 726

DOSE: 900 PPM

DISP: Terminal Sacrifice

HISTO: 44786

**ORGAN AND ACCOUNTABLE SITE STATUS**

[ Necrosis TGLS = 12-15 ]			
* Nose	Respirat Epith	Foreign Body Hyperplasia Inflammation	Moderate Minimal Suppurative, Mild
* Pituitary Gland		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 2-10 ]			
* Spleen		Hemorrhage Leukemia Mononuclear	Marked
[ Hemorrhage TGLS = 4-19 ]			
[ Leukemia Mononuclear TGLS = 3,5-19+18 ]			
* Testes	Bilateral, Interstit Cell Germinal Epith	Adenoma Atrophy	Moderate
[ Adenoma TGLS = 10-9 ]			
[ Atrophy TGLS = 11-9 ]			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 425

TRT#: 5

SEX: Male

DAY ON TEST: 633

DOSE: 900 PPM

DISP: Moribund Sacrifice

HISTO: 44787

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Liver	* Lung	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Pancreas	* Parathyroid Gland
Peritoneum	Pleura	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

**MISSING**

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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**OBSERVATIONS**

* Adrenal Cortex [ Atrophy TGLS = 2-7 ]		Atrophy	Moderate
* Kidney	Papilla	Mineralization Nephropathy	Minimal Mild
* Larynx		Foreign Body Inflammation	Marked Suppurative, Minimal
* Nose	Nasolacrim Dct	Inflammation	Suppurative, Mild
* Pituitary Gland [ Adenoma TGLS = 1-10 ]		Adenoma	
* Testes	Germinal Epith	Atrophy	Marked

**PRIMARY CAUSE OF DEATH**

- Pituitary Gland Adenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 426

TRT#: 5

DOSE: 900 PPM

SEX: Male

DISP: Moribund Sacrifice

DAY ON TEST: 667

HISTO: 44788

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Nose	* Pancreas
* Parathyroid Gland	Peritoneum	Pleura	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Mild
* Kidney		Infarct	
	Papilla	Mineralization	Minimal
		Nephropathy	Mild
[ Infarct TGLS = 8-7 ]			
[ Nephropathy TGLS = 7-7 ]			
* Liver		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 6-6 ]			
* Lung		Leukemia Mononuclear	
Lymph Node	Pancreatic	Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 5-14 ]			
* Lymph Node, Mediastinal		Leukemia Mononuclear	
* Lymph Node, Mesenteric		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 9-15 ]			
* Mammary Gland		Fibroadenoma	
[ Fibroadenoma TGLS = 1-17+18 ]			
Mesentery		Necrosis	Moderate
[ Necrosis TGLS = 3-16 ]			

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01

**Test Type:** CHRONIC

**Route:** RESPIRATORY EXPOSURE WHOLE BODY

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Methyl isobutyl ketone

**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014

**Time Report Requested:** 22:41:41

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

**Lab:** BNW

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**ANIMAL ID:** 426

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 667

**DOSE:** 900 PPM

**DISP:** Moribund Sacrifice

**HISTO:** 44788

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* Pituitary Gland

Adenoma

\* Spleen

Leukemia Mononuclear

Note: NO CORRESPONDING LESION FOR TGLS = 10.

[ Leukemia Mononuclear TGLS = 4-14 ]

\* Testes

Bilateral, Interstit Cell

Adenoma

[ Adenoma TGLS = 2-9 ]

---

PRIMARY CAUSE OF DEATH

- Spleen Leukemia Mononuclear

---

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 427

TRT#: 5

SEX: Male

DAY ON TEST: 727

DOSE: 900 PPM

DISP: Terminal Sacrifice

HISTO: 44789

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Blood Vessel	* Bone	* Bone Marrow	* Epididymis
* Esophagus	* Eye	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Pancreas	* Parathyroid Gland	Peritoneum	* Pituitary Gland
Pleura	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Cortex		Vacuolization Cytoplasmic	Mild
* Adrenal Medulla	Bilateral	Pheochromocytoma Benign	
* Brain		Granular Cell Tumor Malignant	
* Kidney		Nephropathy	Minimal
* Liver		Basophilic Focus	
	Centrilobular	Necrosis	Mild
[ Necrosis TGLS = 5-6 ]			
* Lung	Alveolar Epith	Hyperplasia	Minimal
	Alveolus	Infiltration Cellular	Histiocyte, Mild
Lymph Node		Infiltration Cellular	Histiocyte, Moderate
	Pancreatic	Pigmentation	Moderate
[ Infiltration Cellular TGLS = 4-15 ]			
[ Pigmentation TGLS = 4-15 ]			
* Preputial Gland		Carcinoma	
[ Carcinoma TGLS = 2-14 ]			
* Spleen		Leukemia Mononuclear	
* Testes	Bilateral, Interstit Cell	Adenoma	
[ Adenoma TGLS = 3-9 ]			

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Methyl isobutyl ketone  
**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014  
**Time Report Requested:** 22:41:41  
**First Dose M/F:** NA / NA  
**Lab:** BNW

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**ANIMAL ID:** 427

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 727

**DOSE:** 900 PPM

**DISP:** Terminal Sacrifice

**HISTO:** 44789

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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: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 428

TRT#: 5

SEX: Male

DAY ON TEST: 688

DOSE: 900 PPM

DISP: Moribund Sacrifice

HISTO: 44790

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lymph Node, Mediastinal
* Mammary Gland	* Nose	* Pancreas	* Parathyroid Gland
Peritoneum	Pleura	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Kidney		Leukemia Mononuclear	
	Papilla	Mineralization	Minimal
		Nephropathy	Minimal
* Liver		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 4-6 ]			
* Lung		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 2-14 ]			
* Lymph Node, Mesenteric		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 8-8 ]			
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 3-10 ]			
* Skin		Inflammation	Granulomatous, Moderate
[ Inflammation TGLS = 1-16 ]			
* Spleen		Leukemia Mononuclear	
		Necrosis	Marked
[ Leukemia Mononuclear TGLS = 5-15 ]			
[ Necrosis TGLS = 6-16 ]			
* Testes	Bilateral, Interstit Cell	Adenoma	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Methyl isobutyl ketone  
**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014  
**Time Report Requested:** 22:41:41  
**First Dose M/F:** NA / NA  
**Lab:** BNW

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<b>ANIMAL ID:</b> 428	<b>TRT#:</b> 5	<b>SEX:</b> Male	<b>DAY ON TEST:</b> 688
	<b>DOSE:</b> 900 PPM	<b>DISP:</b> Moribund Sacrifice	<b>HISTO:</b> 44790

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Adenoma TGLS = 7-9 ]

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PRIMARY CAUSE OF DEATH	- Spleen	Leukemia Mononuclear
CONTRIBUTORY CAUSE OF DEATH	- Spleen	Necrosis

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 429

TRT#: 5

SEX: Male

DAY ON TEST: 660

DOSE: 900 PPM

DISP: Moribund Sacrifice

HISTO: 44791

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Epididymis	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Pancreas	* Parathyroid Gland	Peripheral Nerve	Peritoneum
Pleura	* Prostate	* Salivary Glands	* Seminal Vesicle
Skeletal Muscle	* Skin	Spinal Cord	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Trachea	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	
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OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Moderate
* Brain		Compression	Moderate
Note: pituitary tumor compressed brain, remnants of adenoma attached to dura in brain section.			
* Kidney	Papilla	Mineralization	Minimal
		Nephropathy	Moderate
* Liver		Eosinophilic Focus	
		Leukemia Mononuclear	
	[ Leukemia Mononuclear TGLS = 3-6 ]		
* Lung		Leukemia Mononuclear	
* Pituitary Gland		Adenoma	
	[ Adenoma TGLS = 1-10 ]		
* Preputial Gland		Inflammation	Suppurative, Moderate
* Spleen		Leukemia Mononuclear	
	[ Leukemia Mononuclear TGLS = 2-14 ]		
* Testes	Interstit Cell	Adenoma	
* Thyroid Gland	C Cell	Hyperplasia	Mild
* Urinary Bladder		Calculus Micro Observation Only	Mild

PRIMARY CAUSE OF DEATH - Spleen Leukemia Mononuclear

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Methyl isobutyl ketone  
**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014  
**Time Report Requested:** 22:41:41  
**First Dose M/F:** NA / NA  
**Lab:** BNW

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**ANIMAL ID:** 429

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 660

**DOSE:** 900 PPM

**DISP:** Moribund Sacrifice

**HISTO:** 44791

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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CONTRIBUTORY CAUSE OF DEATH

- Pituitary Gland Adenoma

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\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01

**Test Type:** CHRONIC

**Route:** RESPIRATORY EXPOSURE WHOLE BODY

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Methyl isobutyl ketone

**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014

**Time Report Requested:** 22:41:41

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

**Lab:** BNW

**ANIMAL ID:** 430

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 726

**DOSE:** 900 PPM

**DISP:** Terminal Sacrifice

**HISTO:** 44792

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Epididymis	* Esophagus	* Harderian Gland
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx
* Lung	* Lymph Node, Bronchial	* Lymph Node, Mesenteric	* Mammary Gland
* Pancreas	* Parathyroid Gland	Peritoneum	Pleura
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

**MISSING**

\* Lymph Node, Mandibular

**INSUFFICIENT TISSUE**

\* Eye

**OBSERVATIONS**

* Brain		Compression	Moderate
* Heart		Cardiomyopathy	Mild
* Kidney		Nephropathy	Marked
[ Nephropathy TGLS = 6-7 ]			
* Liver	Bile Duct	Hyperplasia	Mild
[ Hyperplasia TGLS = 5-6 ]		Mixed Cell Focus	
* Lymph Node, Mediastinal		Infiltration Cellular	Histiocyte, Marked
[ Infiltration Cellular TGLS = 3-3 ]			
Mesentery		Necrosis	Moderate
[ Necrosis TGLS = 1,2-14+15 ]			
* Nose		Foreign Body	Moderate
		Inflammation	Suppurative, Minimal
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 7-10 ]			
* Testes	Interstit Cell	Adenoma	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Methyl isobutyl ketone  
**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014  
**Time Report Requested:** 22:41:41  
**First Dose M/F:** NA / NA  
**Lab:** BNW

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**ANIMAL ID:** 430

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 726

**DOSE:** 900 PPM

**DISP:** Terminal Sacrifice

**HISTO:** 44792

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Adenoma TGLS = 4-9 ]

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PRIMARY CAUSE OF DEATH

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\* PROTOCOL REQUIRED TISSUE



Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 431

TRT#: 5

SEX: Male

DAY ON TEST: 727

DOSE: 900 PPM

DISP: Terminal Sacrifice

HISTO: 44793

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lung	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Nose	* Pancreas	* Parathyroid Gland
Peritoneum	* Pituitary Gland	Pleura	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Eye	Lens	Cataract	Mild
* Heart		Cardiomyopathy	Mild
* Kidney	Renal Tubule	Hyperplasia	Minimal
		Nephropathy	Mild
* Liver		Clear Cell Focus	
* Testes	Bilateral, Interstit Cell	Adenoma	

[ Adenoma TGLS = 1-9 ]

PRIMARY CAUSE OF DEATH

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 432

TRT#: 5

SEX: Male

DAY ON TEST: 544

DOSE: 900 PPM

DISP: Moribund Sacrifice

HISTO: 44794

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Nose	* Pancreas	* Parathyroid Gland
Peritoneum	* Pituitary Gland	Pleura	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Stomach, Forestomach	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Brain		Hemorrhage	Marked
* Kidney		Infarct	
		Leukemia Mononuclear	
	Papilla	Mineralization	Moderate
		Nephropathy	Minimal
* Liver		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-6 ]			
* Lung		Hemorrhage	Minimal
		Leukemia Mononuclear	
[ Hemorrhage TGLS = 4-14 ]			
* Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 2-15 ]			
* Stomach, Glandular		Erosion	Minimal
[ Erosion TGLS = 5-16 ]			
* Testes		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 3-9 ]			

PRIMARY CAUSE OF DEATH - Spleen Leukemia Mononuclear

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Methyl isobutyl ketone  
**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014  
**Time Report Requested:** 22:41:41  
**First Dose M/F:** NA / NA  
**Lab:** BNW

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**ANIMAL ID:** 432

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 544

**DOSE:** 900 PPM

**DISP:** Moribund Sacrifice

**HISTO:** 44794

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 433

TRT#: 5

SEX: Male

DAY ON TEST: 721

DOSE: 900 PPM

DISP: Moribund Sacrifice

HISTO: 44795

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Pancreas	* Parathyroid Gland	Peritoneum	Pleura
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Thymus	* Trachea	* Urinary Bladder	

MISSING

* Lymph Node, Mandibular	* Lymph Node, Mediastinal
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OBSERVATIONS

* Adrenal Cortex		Vacuolization Cytoplasmic	Mild
* Heart		Cardiomyopathy	Mild
* Kidney	Pelvis, Transit Epithe Papilla	Hyperplasia Mineralization Nephropathy	Minimal Moderate Mild
* Liver		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 3-6 ]			
* Lung	Alveolar Epith	Hyperplasia	Minimal
* Lymph Node, Bronchial		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-7 ]			
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 2-10 ]			
* Spleen		Leukemia Mononuclear	
* Thyroid Gland	C Cell	Hyperplasia	Minimal

PRIMARY CAUSE OF DEATH - Pituitary Gland Adenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 434

TRT#: 5

SEX: Male

DAY ON TEST: 727

DOSE: 900 PPM

DISP: Terminal Sacrifice

HISTO: 44796

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Harderian Gland
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Nose	* Pancreas
* Parathyroid Gland	Peritoneum	Pleura	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

**MISSING**

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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**INSUFFICIENT TISSUE**

\* Eye

**OBSERVATIONS**

* Adrenal Medulla		Pheochromocytoma Benign	
[ Pheochromocytoma Benign TGLS = 7-7 ]			
* Heart		Cardiomyopathy	Mild
* Kidney		Nephropathy	Mild
* Larynx		Foreign Body	Marked
* Liver		Basophilic Focus	
		Hepatodiaphragmatic Nodule	Marked
		Leukemia Mononuclear	
[ Hepatodiaphragmatic Nodule TGLS = 6-6 ]			
* Lung		Hemorrhage	Mild
[ Hemorrhage TGLS = 2-14 ]			
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 3-10 ]			
* Skin	Subcut Tiss	Fibroma	
[ Fibroma TGLS = 1-14 ]			
* Spleen		Leukemia Mononuclear	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Methyl isobutyl ketone  
**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014  
**Time Report Requested:** 22:41:41  
**First Dose M/F:** NA / NA  
**Lab:** BNW

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<b>ANIMAL ID:</b> 434	<b>TRT#:</b> 5	<b>SEX:</b> Male	<b>DAY ON TEST:</b> 727
	<b>DOSE:</b> 900 PPM	<b>DISP:</b> Terminal Sacrifice	<b>HISTO:</b> 44796

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Leukemia Mononuclear TGLS = 5-6 ]		
* Testes	Bilateral, Interstit Cell	Adenoma
[ Adenoma TGLS = 4-9 ]		

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**PRIMARY CAUSE OF DEATH** -

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 435

TRT#: 5

SEX: Male

DAY ON TEST: 727

DOSE: 900 PPM

DISP: Terminal Sacrifice

HISTO: 44797

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Epididymis	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lung	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Nose	* Pancreas	* Parathyroid Gland
Peritoneum	Pleura	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Mild
* Brain		Hemorrhage	Minimal
* Kidney		Nephropathy	Mild
* Liver		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 4-6 ]			
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 2-10 ]			
* Skin	Subcut Tiss	Fibroma	
[ Fibroma TGLS = 1-14 ]			
* Spleen		Leukemia Mononuclear	
* Testes	Interstit Cell	Adenoma	
[ Adenoma TGLS = 3-9 ]			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 436

TRT#: 5

SEX: Male

DAY ON TEST: 726

DOSE: 900 PPM

DISP: Terminal Sacrifice

HISTO: 44798

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lung
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Parathyroid Gland	Peritoneum	Pleura	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Kidney		Nephropathy	Mild
* Liver		Clear Cell Focus	
		Eosinophilic Focus	
		Hepatodiaphragmatic Nodule	Marked
		Leukemia Mononuclear	
	[ Hepatodiaphragmatic Nodule TGLS = 4-14 ]		
	[ Leukemia Mononuclear TGLS = 5-6 ]		
* Pancreas	Acinus	Atrophy	Mild
* Pituitary Gland		Adenoma	
	[ Adenoma TGLS = 1-10 ]		
* Spleen		Leukemia Mononuclear	
	[ Leukemia Mononuclear TGLS = 3-15 ]		
* Testes	Bilateral, Interstit Cell	Adenoma	
	[ Adenoma TGLS = 2-9 ]		

PRIMARY CAUSE OF DEATH

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\* PROTOCOL REQUIRED TISSUE



Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 437

TRT#: 5

SEX: Male

DAY ON TEST: 727

DOSE: 900 PPM

DISP: Terminal Sacrifice

HISTO: 44799

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lung	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Nose	* Pancreas
* Parathyroid Gland	Peritoneum	Pleura	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Heart	Cardiomyopathy	Mild
* Kidney	Nephropathy	Mild
* Liver	Basophilic Focus	
* Pituitary Gland	Adenoma	
* Testes	Interstit Cell	Adenoma

[ Adenoma TGLS = 1-9 ]

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 438

TRT#: 5

SEX: Male

DAY ON TEST: 727

DOSE: 900 PPM

DISP: Terminal Sacrifice

HISTO: 44800

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lung	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Nose	* Pancreas
* Parathyroid Gland	Peritoneum	Pleura	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Trachea
* Urinary Bladder			

**MISSING**

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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**OBSERVATIONS**

* Heart		Cardiomyopathy	Mild
* Kidney	Pelvis, Transit Epithe Papilla	Hyperplasia Mineralization Nephropathy	Minimal Mild Moderate
* Liver		Basophilic Focus Clear Cell Focus Hepatodiaphragmatic Nodule	
	[ Hepatodiaphragmatic Nodule TGLS = 4-6 ]		Marked
Mesentery		Necrosis	Moderate
	[ Necrosis TGLS = 2-15 ]		
* Pituitary Gland		Hyperplasia	Marked
* Spleen		Fibrosis Leukemia Mononuclear	Mild
	[ Fibrosis TGLS = 1-6 ]		
* Testes	Bilateral, Interstit Cell	Adenoma	
	[ Adenoma TGLS = 3-9 ]		
* Thyroid Gland	C Cell	Hyperplasia	Moderate

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Methyl isobutyl ketone  
**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014  
**Time Report Requested:** 22:41:41  
**First Dose M/F:** NA / NA  
**Lab:** BNW

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**ANIMAL ID:** 438

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 727

**DOSE:** 900 PPM

**DISP:** Terminal Sacrifice

**HISTO:** 44800

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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: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 439

TRT#: 5

SEX: Male

DAY ON TEST: 677

DOSE: 900 PPM

DISP: Moribund Sacrifice

HISTO: 44801

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lung
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Pancreas	* Parathyroid Gland	Peritoneum	Pleura
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Spleen	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Kidney	Papilla	Mineralization	Minimal
		Nephropathy	Marked
[ Nephropathy TGLS = 4-7 ]			
* Liver		Vacuolization Cytoplasmic	Moderate
[ Vacuolization Cytoplasmic TGLS = 3-6 ]			
* Pituitary Gland		Angiectasis	Marked
[ Angiectasis TGLS = 2-10 ]			
* Stomach, Forestomach		Ulcer	Marked
* Testes	Interstit Cell	Adenoma	
	Germinal Epith	Atrophy	Marked
[ Adenoma TGLS = 5-9 ]			

PRIMARY CAUSE OF DEATH - Stomach, Forestomach Ulcer

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 440

TRT#: 5

SEX: Male

DAY ON TEST: 726

DOSE: 900 PPM

DISP: Terminal Sacrifice

HISTO: 44802

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Parathyroid Gland	Pleura	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Trachea	* Urinary Bladder

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Moderate
* Heart		Cardiomyopathy	Moderate
* Intestine Small, Ileum		Diverticulum	Marked
[ Diverticulum TGLS = 6-16 ]			
* Kidney		Nephropathy	Mild
* Liver		Clear Cell Focus	
[ Clear Cell Focus TGLS = 7-17 ]		Eosinophilic Focus	
* Lung	Interstitialium	Fibrosis	Minimal
* Pancreas	Acinus	Atrophy	Mild
* Pituitary Gland		Adenoma	
* Skin		Squamous Cell Papilloma	
[ Squamous Cell Papilloma TGLS = 3-15 ]			
* Testes	Bilateral, Interstit Cell	Adenoma	
	Germinal Epith	Atrophy	Marked
[ Adenoma TGLS = 4-9 ]			
[ Atrophy TGLS = 5-9 ]			
* Thyroid Gland	Follicular Cel	Carcinoma	
[ Carcinoma TGLS = 1-3 ]			

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Methyl isobutyl ketone  
**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014  
**Time Report Requested:** 22:41:41  
**First Dose M/F:** NA / NA  
**Lab:** BNW

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**ANIMAL ID:** 440

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 726

**DOSE:** 900 PPM

**DISP:** Terminal Sacrifice

**HISTO:** 44802

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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: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 441

TRT#: 5

SEX: Male

DAY ON TEST: 540

DOSE: 900 PPM

DISP: Moribund Sacrifice

HISTO: 44803

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Liver	* Lung
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Pancreas
* Parathyroid Gland	Peritoneum	* Pituitary Gland	Pleura
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Brain		Hemorrhage	Mild
* Kidney		Nephropathy	Mild
* Nose		Foreign Body	Moderate
	Respirat Epith	Hyperplasia	Moderate
Spinal Cord	Neuron	Degeneration	Mild
		Gliosis	Mild
		Inflammation	Moderate
* Spleen		Leukemia Mononuclear	
* Testes	Bilateral, Interstit Cell	Adenoma	

[ Adenoma TGLS = 2-9 ]

PRIMARY CAUSE OF DEATH - Spinal Cord Inflammation

CONTRIBUTORY CAUSE OF DEATH - Brain Hemorrhage

Animal Note: Cause of paralysis not clear; spinal cord lesions are mild/moderate.

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 442

TRT#: 5

SEX: Male

DAY ON TEST: 727

DOSE: 900 PPM

DISP: Terminal Sacrifice

HISTO: 44804

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Liver	* Lung
* Lymph Node, Mesenteric	* Mammary Gland	* Nose	Peritoneum
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Parathyroid Gland
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OBSERVATIONS

* Adrenal Cortex		Vacuolization Cytoplasmic	Minimal
* Kidney	Pelvis, Transit Epithe Papilla	Hyperplasia Mineralization Nephropathy	Minimal Mild Marked
* Pancreas	Acinus	Atrophy	Moderate
* Pituitary Gland		Adenoma	
Pleura		Inflammation	Chronic, Minimal
* Testes	Bilateral, Interstit Cell	Adenoma	

[ Adenoma TGLS = 1-9 ]

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 443

TRT#: 5

SEX: Male

DAY ON TEST: 567

DOSE: 900 PPM

DISP: Natural Death

HISTO: 44805

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                           |                             |                          |
|--------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex         | * Adrenal Medulla         | Blood Vessel                | * Bone                   |
| * Bone Marrow            | * Brain                   | * Epididymis                | * Esophagus              |
| * Eye                    | * Harderian Gland         | * Heart                     | * Intestine Large, Cecum |
| * Intestine Large, Colon | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Islets, Pancreatic     | * Larynx                  | * Lymph Node, Mediastinal   | * Lymph Node, Mesenteric |
| * Mammary Gland          | * Nose                    | * Pancreas                  | * Parathyroid Gland      |
| Peritoneum               | Pleura                    | * Preputial Gland           | * Prostate               |
| * Salivary Glands        | * Seminal Vesicle         | * Skin                      | * Stomach, Forestomach   |
| * Stomach, Glandular     | * Thymus                  | * Thyroid Gland             | * Trachea                |
| * Urinary Bladder        |                           |                             |                          |

MISSING

- |                         |                          |
|-------------------------|--------------------------|
| * Lymph Node, Bronchial | * Lymph Node, Mandibular |
|-------------------------|--------------------------|

AUTO PRECLUDES DIAG.

- \* Intestine Small, Jejunum

OBSERVATIONS

- |                                      |                           |                                     |        |
|--------------------------------------|---------------------------|-------------------------------------|--------|
| * Kidney                             |                           | Leukemia Mononuclear<br>Nephropathy | Mild   |
| * Liver                              |                           | Leukemia Mononuclear                |        |
| [ Leukemia Mononuclear TGLS = 5-6 ]  |                           |                                     |        |
| * Lung                               |                           | Leukemia Mononuclear                |        |
| Lymph Node                           | Pancreatic                | Leukemia Mononuclear                |        |
| [ Leukemia Mononuclear TGLS = 4-14 ] |                           |                                     |        |
| * Pituitary Gland                    |                           | Hyperplasia                         | Marked |
| * Spleen                             |                           | Leukemia Mononuclear                |        |
| [ Leukemia Mononuclear TGLS = 3-14 ] |                           |                                     |        |
| * Testes                             | Bilateral, Interstit Cell | Adenoma                             |        |
| [ Adenoma TGLS = 2-9 ]               |                           |                                     |        |

PRIMARY CAUSE OF DEATH

- Spleen Leukemia Mononuclear

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 444

TRT#: 5

SEX: Male

DAY ON TEST: 713

DOSE: 900 PPM

DISP: Moribund Sacrifice

HISTO: 44806

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Blood Vessel	* Bone	* Bone Marrow	* Brain
* Epididymis	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Larynx
* Lymph Node, Mediastinal	* Mammary Gland	* Nose	* Pancreas
* Parathyroid Gland	Peritoneum	Pleura	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

\* Lymph Node, Mandibular

OBSERVATIONS

* Adrenal Cortex		Hyperplasia	Moderate
* Adrenal Medulla		Hyperplasia	Moderate
* Islets, Pancreatic		Adenoma	
* Kidney	Papilla	Leukemia Mononuclear	
		Mineralization	Moderate
		Nephropathy	Mild
* Liver		Leukemia Mononuclear	
* Lung		Leukemia Mononuclear	
Lymph Node	Pancreatic	Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 6-15 ]			
* Lymph Node, Bronchial		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-16 ]			
* Lymph Node, Mesenteric		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 7-8 ]			
* Pituitary Gland		Hyperplasia	Marked
* Spleen		Fibrosis	Marked
		Leukemia Mononuclear	
[ Fibrosis TGLS = 4,5-14 ]			

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Methyl isobutyl ketone  
**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014  
**Time Report Requested:** 22:41:41  
**First Dose M/F:** NA / NA  
**Lab:** BNW

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<b>ANIMAL ID:</b> 444	<b>TRT#:</b> 5	<b>SEX:</b> Male	<b>DAY ON TEST:</b> 713
	<b>DOSE:</b> 900 PPM	<b>DISP:</b> Moribund Sacrifice	<b>HISTO:</b> 44806

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Leukemia Mononuclear TGLS = 3-14 ]

\* Testes

Bilateral, Interstit Cell

Adenoma

[ Adenoma TGLS = 2-9 ]

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**PRIMARY CAUSE OF DEATH** - Spleen Leukemia Mononuclear

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 445

TRT#: 5

SEX: Male

DAY ON TEST: 727

DOSE: 900 PPM

DISP: Terminal Sacrifice

HISTO: 44807

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Nose	* Parathyroid Gland
Peritoneum	Pleura	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

**MISSING**

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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**OBSERVATIONS**

* Kidney	Papilla	Mineralization	Mild
		Nephropathy	Moderate
* Liver		Basophilic Focus	
		Clear Cell Focus	
* Lung	Alveolar Epith	Hyperplasia	Mild
* Pancreas	Acinus	Atrophy	Mild
* Pituitary Gland		Hyperplasia	Moderate
[ Hyperplasia TGLS = 1-10 ]			
* Testes	Bilateral, Interstit Cell	Adenoma	
[ Adenoma TGLS = 2,3-9 ]			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 446

TRT#: 5

SEX: Male

DAY ON TEST: 539

DOSE: 900 PPM

DISP: Moribund Sacrifice

HISTO: 44808

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Nose	* Pancreas	* Parathyroid Gland	Peritoneum
Pleura	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Heart		Cardiomyopathy	Mild
* Kidney	Renal Tubule	Accumulation, Hyaline Droplet Leukemia Mononuclear	Mild
Note: MCL pigment in cortex also.			
* Larynx		Foreign Body	Marked
* Liver		Leukemia Mononuclear	
* Lung	Interstitium	Fibrosis Leukemia Mononuclear	Moderate
[ Leukemia Mononuclear TGLS = 2-4+5 ]			
Lymph Node	Deep Cervical	Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-15 ]			
* Pituitary Gland		Hyperplasia	Moderate
* Spleen		Leukemia Mononuclear Necrosis	Marked
[ Leukemia Mononuclear TGLS = 3-14 ]			
[ Necrosis TGLS = 4-14 ]			
* Testes	Bilateral, Interstit Cell	Adenoma	
[ Adenoma TGLS = 5-9 ]			

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Methyl isobutyl ketone  
**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014  
**Time Report Requested:** 22:41:41  
**First Dose M/F:** NA / NA  
**Lab:** BNW

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<b>ANIMAL ID:</b> 446	<b>TRT#:</b> 5	<b>SEX:</b> Male	<b>DAY ON TEST:</b> 539
	<b>DOSE:</b> 900 PPM	<b>DISP:</b> Moribund Sacrifice	<b>HISTO:</b> 44808

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Urinary Bladder	Calculus Micro Observation Only	Mild
<b>PRIMARY CAUSE OF DEATH</b>	- Spleen Leukemia Mononuclear	

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 447

TRT#: 5

SEX: Male

DAY ON TEST: 707

DOSE: 900 PPM

DISP: Moribund Sacrifice

HISTO: 44809

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Pancreas	* Parathyroid Gland	Peritoneum	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Trachea
* Urinary Bladder			

MISSING

\* Lymph Node, Mandibular

INSUFFICIENT TISSUE

\* Eye

OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Moderate
* Kidney		Nephropathy	Mild
* Liver	Bile Duct	Eosinophilic Focus	
		Hyperplasia	Marked
		Leukemia Mononuclear	
	[ Leukemia Mononuclear TGLS = 5-6 ]		
* Lung		Leukemia Mononuclear	
Lymph Node	Deep Cervical	Leukemia Mononuclear	
	[ Leukemia Mononuclear TGLS = 2-16 ]		
* Lymph Node, Bronchial		Leukemia Mononuclear	
	[ Leukemia Mononuclear TGLS = 1-14 ]		
* Nose		Inflammation	Suppurative, Mild
* Pituitary Gland		Leukemia Mononuclear	
Pleura	Mesothelium	Hyperplasia	Mild
* Spleen		Leukemia Mononuclear	
	[ Leukemia Mononuclear TGLS = 4-15 ]		

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01

**Test Type:** CHRONIC

**Route:** RESPIRATORY EXPOSURE WHOLE BODY

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Methyl isobutyl ketone

**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014

**Time Report Requested:** 22:41:41

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

**Lab:** BNW

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**ANIMAL ID:** 447

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 707

**DOSE:** 900 PPM

**DISP:** Moribund Sacrifice

**HISTO:** 44809

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Testes [ Adenoma TGLS = 3-9 ]	Bilateral, Interstit Cell	Adenoma	
* Thyroid Gland	C Cell	Hyperplasia	Mild
PRIMARY CAUSE OF DEATH	- Spleen Leukemia Mononuclear		

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\* PROTOCOL REQUIRED TISSUE



Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 448

TRT#: 5

SEX: Male

DAY ON TEST: 726

DOSE: 900 PPM

DISP: Terminal Sacrifice

HISTO: 44810

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Larynx	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Nose	* Pancreas	* Parathyroid Gland	Peritoneum
* Pituitary Gland	Pleura	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Medulla	Hyperplasia	Marked
* Islets, Pancreatic	Carcinoma	
* Kidney	Nephropathy	Mild
* Liver	Basophilic Focus	
	Clear Cell Focus	
	Leukemia Mononuclear	
* Lung	Leukemia Mononuclear	
* Spleen	Leukemia Mononuclear	
* Testes	Bilateral, Interstit Cell	Adenoma

[ Adenoma TGLS = 1-9 ]

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 449

TRT#: 5

DOSE: 900 PPM

SEX: Male

DISP: Terminal Sacrifice

DAY ON TEST: 727

HISTO: 44811

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Blood Vessel	* Bone	* Bone Marrow	* Brain
* Epididymis	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Nose	* Pancreas	* Parathyroid Gland	Peritoneum
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Cortex		Vacuolization Cytoplasmic	Minimal
* Adrenal Medulla		Hyperplasia	Mild
		Pheochromocytoma Benign	
* Kidney	Pelvis, Transit Epithe	Hyperplasia	Mild
		Nephropathy	Marked
* Liver		Basophilic Focus	
		Clear Cell Focus	
		Leukemia Mononuclear	
		Mixed Cell Focus	
	Hepatocyte	Regeneration	Moderate
[ Regeneration TGLS = 3-14 ]			
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic, Mild
* Pituitary Gland		Hyperplasia	Moderate
Pleura		Inflammation	Chronic, Mild
* Spleen		Fibrosis	Moderate
		Leukemia Mononuclear	
[ Fibrosis TGLS = 1-6 ]			

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Methyl isobutyl ketone  
**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014  
**Time Report Requested:** 22:41:41  
**First Dose M/F:** NA / NA  
**Lab:** BNW

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**ANIMAL ID:** 449

**TRT#:** 5  
**DOSE:** 900 PPM

**SEX:** Male  
**DISP:** Terminal Sacrifice

**DAY ON TEST:** 727  
**HISTO:** 44811

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* Testes  
[ Adenoma TGLS = 2-9 ]

Bilateral, Interstit Cell

Adenoma

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PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 450

TRT#: 5

SEX: Male

DAY ON TEST: 695

DOSE: 900 PPM

DISP: Moribund Sacrifice

HISTO: 44812

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Epididymis	* Esophagus	* Eye	* Harderian Gland
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx
* Lymph Node, Mediastinal	* Mammary Gland	* Nose	* Pancreas
* Parathyroid Gland	Peritoneum	Pleura	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

\* Lymph Node, Mandibular

OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Moderate
* Brain		Hemorrhage	Marked
[ Hemorrhage TGLS = 3-1 ]			
* Heart		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 4-14 ]			
* Kidney		Leukemia Mononuclear	
[ Nephropathy TGLS = 11-7 ]		Nephropathy	Mild
* Liver	Bile Duct	Hyperplasia	Marked
[ Leukemia Mononuclear TGLS = 10-6 ]		Leukemia Mononuclear	
* Lung		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 5-4+5 ]			
Lymph Node	Pancreatic	Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 7-15 ]	Renal	Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 12-17 ]			
* Lymph Node, Bronchial		Leukemia Mononuclear	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01

**Test Type:** CHRONIC

**Route:** RESPIRATORY EXPOSURE WHOLE BODY

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Methyl isobutyl ketone

**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014

**Time Report Requested:** 22:41:41

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

**Lab:** BNW

**ANIMAL ID:** 450

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 695

**DOSE:** 900 PPM

**DISP:** Moribund Sacrifice

**HISTO:** 44812

**ORGAN AND ACCOUNTABLE SITE STATUS**

[ Leukemia Mononuclear TGLS = 1-14 ]			
* Lymph Node, Mesenteric		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 14-8 ]			
Mesentery		Necrosis	Moderate
[ Necrosis TGLS = 13-18 ]			
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 2-10 ]			
* Spleen		Leukemia Mononuclear	
		Necrosis	Marked
[ Leukemia Mononuclear TGLS = 8-15 ]			
[ Necrosis TGLS = 9-16 ]			
* Testes	Bilateral, Interstit Cell	Adenoma	
[ Adenoma TGLS = 6-9 ]			

PRIMARY CAUSE OF DEATH - Spleen Leukemia Mononuclear

CONTRIBUTORY CAUSE OF DEATH - Brain Hemorrhage

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 601

TRT#: 7

SEX: Male

DAY ON TEST: 645

DOSE: 1800 PPM

DISP: Moribund Sacrifice

HISTO: 44663

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone Marrow	* Brain
* Epididymis	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lung	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Nose	* Pancreas	* Parathyroid Gland
Peritoneum	Pleura	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Marked
* Bone	Tibia	Fracture	
[ Fracture TGLS = 4-14 ]			
* Kidney	Pelvis, Transit Epithe Papilla	Hyperplasia Mineralization Nephropathy	Minimal Minimal Marked
[ Nephropathy TGLS = 3-7 ]			
* Liver	Centrilobular	Necrosis	Minimal
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 1-10 ]			
* Spleen		Leukemia Mononuclear	
* Testes	Bilateral, Interstit Cell Germinal Epith	Adenoma Atrophy	Moderate
[ Adenoma TGLS = 2-9 ]			

PRIMARY CAUSE OF DEATH

- Pituitary Gland Adenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 602

TRT#: 7

SEX: Male

DAY ON TEST: 727

DOSE: 1800 PPM

DISP: Terminal Sacrifice

HISTO: 44664

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Nose	* Pancreas	* Parathyroid Gland
Peritoneum	Pleura	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Moderate
		Pheochromocytoma Benign	
* Kidney	Renal Tubule	Adenoma	
	Renal Tubule	Carcinoma	
	Pelvis, Transit Epithe	Hyperplasia	Minimal
	Renal Tubule	Hyperplasia	Marked
	Papilla	Mineralization	Minimal
		Nephropathy	Moderate
[ Adenoma TGLS = 3-14 ]			
* Liver		Eosinophilic Focus	
		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 5-6 ]			
* Lung		Leukemia Mononuclear	
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 1-10 ]			
* Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 2-14 ]			

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Methyl isobutyl ketone  
**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014  
**Time Report Requested:** 22:41:41  
**First Dose M/F:** NA / NA  
**Lab:** BNW

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**ANIMAL ID:** 602

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 727

**DOSE:** 1800 PPM

**DISP:** Terminal Sacrifice

**HISTO:** 44664

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* Testes

Bilateral, Interstit Cell

Adenoma

[ Adenoma TGLS = 4-9 ]

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PRIMARY CAUSE OF DEATH

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\* PROTOCOL REQUIRED TISSUE



Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 603

TRT#: 7

SEX: Male

DAY ON TEST: 498

DOSE: 1800 PPM

DISP: Moribund Sacrifice

HISTO: 44665

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Epididymis	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lung	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Pancreas	* Parathyroid Gland	Peritoneum
Pleura	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Moderate
* Brain		Compression	Marked
* Kidney		Nephropathy	Marked
[ Nephropathy TGLS = 5-7 ]			
* Liver	Centrilobular	Necrosis	Moderate
[ Necrosis TGLS = 4-6 ]			
Mesentery		Necrosis	Moderate
[ Necrosis TGLS = 3-14 ]			
* Nose	Nasolacrim Dct	Inflammation	Suppurative, Mild
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 2-10 ]			
* Stomach, Forestomach		Hyperplasia	Squamous, Marked
		Ulcer	Marked
[ Hyperplasia TGLS = 6-10 ]			
[ Ulcer TGLS = 6-10 ]			
* Testes	Interstit Cell	Adenoma	
[ Adenoma TGLS = 7-9 ]			

PRIMARY CAUSE OF DEATH

- Pituitary Gland Adenoma

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Methyl isobutyl ketone  
**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014  
**Time Report Requested:** 22:41:41  
**First Dose M/F:** NA / NA  
**Lab:** BNW

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**ANIMAL ID:** 603

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 498

**DOSE:** 1800 PPM

**DISP:** Moribund Sacrifice

**HISTO:** 44665

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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CONTRIBUTORY CAUSE OF DEATH

- Stomach;Forestomach Ulcer

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 604

TRT#: 7

SEX: Male

DAY ON TEST: 727

DOSE: 1800 PPM

DISP: Terminal Sacrifice

HISTO: 44666

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lung	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Nose	* Pancreas	* Parathyroid Gland
Peritoneum	Pleura	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Mild
* Eye	Lens	Cataract	Moderate
* Kidney	Pelvis, Transit Epithe	Hyperplasia	Minimal
	Papilla	Mineralization	Minimal
		Nephropathy	Moderate
* Liver		Clear Cell Focus	
		Hepatodiaphragmatic Nodule	Marked
[ Hepatodiaphragmatic Nodule TGLS = 5-6 ]			
Lymph Node	Deep Cervical	Pigmentation	Mild
[ Pigmentation TGLS = 1-14 ]			
* Pituitary Gland		Adenoma	
* Testes	Bilateral, Interstit Cell	Adenoma	
[ Adenoma TGLS = 4-9 ]			

PRIMARY CAUSE OF DEATH

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 605

TRT#: 7

SEX: Male

DAY ON TEST: 674

DOSE: 1800 PPM

DISP: Moribund Sacrifice

HISTO: 44667

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Blood Vessel	* Bone	* Bone Marrow	* Epididymis
* Esophagus	* Eye	* Harderian Gland	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Mammary Gland	* Pancreas
* Parathyroid Gland	Peritoneum	* Pituitary Gland	Pleura
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Trachea

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Cortex		Vacuolization Cytoplasmic	Mild
* Adrenal Medulla		Hyperplasia	Moderate
* Brain		Hemorrhage	Marked
[ Hemorrhage TGLS = 3-1+14 ]			
* Heart		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 2-15 ]			
* Intestine Large, Cecum		Ulcer	Marked
[ Ulcer TGLS = 14-20 ]			
* Kidney		Infarct	
		Leukemia Mononuclear	
		Nephropathy	Mild
[ Infarct TGLS = 11-15 ]			
[ Leukemia Mononuclear TGLS = 10-7 ]			
* Liver		Hepatocellular Adenoma	
		Leukemia Mononuclear	
	Hepatocyte	Regeneration	Marked
[ Leukemia Mononuclear TGLS = 9-6 ]			
[ Regeneration TGLS = 15-16 ]			
* Lung		Leukemia Mononuclear	
Lymph Node	Pancreatic	Leukemia Mononuclear	

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 605

TRT#: 7

SEX: Male

DAY ON TEST: 674

DOSE: 1800 PPM

DISP: Moribund Sacrifice

HISTO: 44667

ORGAN AND ACCOUNTABLE SITE STATUS

[ Leukemia Mononuclear TGLS = 8-19 ]			
* Lymph Node, Mediastinal		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 13-3 ]			
* Lymph Node, Mesenteric		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 12-21 ]			
* Nose	Goblet Cell	Hyperplasia Inflammation	Mild Suppurative, Minimal
* Skin	Subcut Tiss	Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-22 ]			
* Spleen		Leukemia Mononuclear Necrosis	Marked
[ Leukemia Mononuclear TGLS = 6-17 ]			
[ Necrosis TGLS = 7,16-17+18 ]			
* Testes	Bilateral, Interstit Cell	Adenoma	
[ Adenoma TGLS = 5-9 ]			
* Thyroid Gland	C Cell	Adenoma	
* Urinary Bladder		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 4-10 ]			

PRIMARY CAUSE OF DEATH - Spleen Leukemia Mononuclear

CONTRIBUTORY CAUSE OF DEATH - Brain Hemorrhage;Intestine Large;Cecum Ulcer;Spleen Necrosis

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 606

TRT#: 7

SEX: Male

DAY ON TEST: 726

DOSE: 1800 PPM

DISP: Terminal Sacrifice

HISTO: 44668

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Nose	* Pancreas	* Parathyroid Gland
Peritoneum	* Pituitary Gland	Pleura	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

\* Lymph Node, Mandibular

OBSERVATIONS

* Adrenal Medulla		Pheochromocytoma Benign	
* Kidney	Pelvis, Transit Epithe Papilla	Hyperplasia Mineralization Nephropathy	Minimal Mild Mild
* Liver		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 5-6 ]			
* Lung		Leukemia Mononuclear	
Lymph Node	Renal	Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 4-7 ]			
* Lymph Node, Bronchial		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-14 ]			
* Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 3-14 ]			
* Testes	Bilateral, Interstit Cell	Adenoma	
[ Adenoma TGLS = 2-9 ]			

PRIMARY CAUSE OF DEATH

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 607

TRT#: 7

SEX: Male

DAY ON TEST: 659

DOSE: 1800 PPM

DISP: Moribund Sacrifice

HISTO: 44669

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Epididymis	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Nose	* Pancreas	* Parathyroid Gland	Peritoneum
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Mild
* Brain		Compression	Marked
* Kidney		Nephropathy	Marked
[ Nephropathy TGLS = 7-7 ]			
* Liver		Basophilic Focus	
[ Hepatodiaphragmatic Nodule TGLS = 6-6 ]		Hepatodiaphragmatic Nodule	Marked
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Minimal
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 2-10 ]			
Pleura		Inflammation	Chronic, Mild
[ Inflammation TGLS = 1-5 ]			
* Preputial Gland		Hyperplasia	Marked
[ Hyperplasia TGLS = 3-9 ]			
* Testes	Bilateral, Interstit Cell	Adenoma	
	Germinal Epith	Atrophy	Marked
[ Adenoma TGLS = 5-9 ]			
[ Atrophy TGLS = 4-9 ]			

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01

**Test Type:** CHRONIC

**Route:** RESPIRATORY EXPOSURE WHOLE BODY

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Methyl isobutyl ketone

**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014

**Time Report Requested:** 22:41:41

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

**Lab:** BNW

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**ANIMAL ID:** 607

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 659

**DOSE:** 1800 PPM

**DISP:** Moribund Sacrifice

**HISTO:** 44669

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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PRIMARY CAUSE OF DEATH

- Pituitary Gland Adenoma

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\* PROTOCOL REQUIRED TISSUE



Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 608

TRT#: 7

SEX: Male

DAY ON TEST: 638

DOSE: 1800 PPM

DISP: Moribund Sacrifice

HISTO: 44670

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Larynx	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Nose	* Pancreas
* Parathyroid Gland	Peritoneum	Pleura	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Stomach, Forestomach	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Moderate
		Pheochromocytoma Benign	
* Heart	Atrium	Thrombosis	Marked
[ Thrombosis TGLS = 2-6 ]			
* Intestine Large, Cecum		Ulcer	Marked
[ Ulcer TGLS = 7-15 ]			
* Islets, Pancreatic		Hyperplasia	Marked
* Kidney	Renal Tubule	Hyperplasia	Mild
	Papilla	Mineralization	Mild
		Nephropathy	Marked
* Liver		Leukemia Mononuclear	
	Centrilobular	Necrosis	Mild
[ Leukemia Mononuclear TGLS = 6-6 ]			
* Lung		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 3-4+5 ]			
* Pituitary Gland		Hyperplasia	Moderate
Skeletal Muscle		Hemorrhage	Mild
[ Hemorrhage TGLS = 8-16 ]			

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01

**Test Type:** CHRONIC

**Route:** RESPIRATORY EXPOSURE WHOLE BODY

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Methyl isobutyl ketone

**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014

**Time Report Requested:** 22:41:41

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

**Lab:** BNW

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**ANIMAL ID:** 608

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 638

**DOSE:** 1800 PPM

**DISP:** Moribund Sacrifice

**HISTO:** 44670

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Spleen [ Leukemia Mononuclear TGLS = 5-14 ]		Leukemia Mononuclear	
* Stomach, Glandular [ Erosion TGLS = 9-10 ]		Erosion	Mild
* Testes [ Adenoma TGLS = 4-9 ]	Bilateral, Interstit Cell	Adenoma	

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PRIMARY CAUSE OF DEATH - Spleen Leukemia Mononuclear

CONTRIBUTORY CAUSE OF DEATH - Intestine Large;Cecum Ulcer

---

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 609

TRT#: 7

SEX: Male

DAY ON TEST: 638

DOSE: 1800 PPM

DISP: Moribund Sacrifice

HISTO: 44671

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Epididymis	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lymph Node, Mediastinal	* Mammary Gland	* Nose
* Pancreas	* Parathyroid Gland	Peritoneum	Pleura
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Trachea	* Urinary Bladder		

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Medulla		Leukemia Mononuclear	
		Pheochromocytoma Benign	
* Brain		Hemorrhage	Marked
[ Hemorrhage TGLS = 3-1 ]			
* Kidney		Leukemia Mononuclear	
		Nephropathy	Moderate
[ Nephropathy TGLS = 8-7 ]			
* Liver		Leukemia Mononuclear	
* Lung		Leukemia Mononuclear	
Lymph Node	Deep Cervical	Carcinoma	Metastatic (Thyroid Gland)
	Renal	Leukemia Mononuclear	
[ Carcinoma TGLS = 2-15 ]			
[ Leukemia Mononuclear TGLS = 7-17 ]			
* Lymph Node, Mesenteric		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 9-16 ]			
* Pituitary Gland		Adenoma	
* Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 5,6-14+15 ]			

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01

**Test Type:** CHRONIC

**Route:** RESPIRATORY EXPOSURE WHOLE BODY

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Methyl isobutyl ketone

**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014

**Time Report Requested:** 22:41:41

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

**Lab:** BNW

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**ANIMAL ID:** 609

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 638

**DOSE:** 1800 PPM

**DISP:** Moribund Sacrifice

**HISTO:** 44671

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* Testes

Interstit Cell

Adenoma

[ Adenoma TGLS = 4-9 ]

\* Thyroid Gland

C Cell

Carcinoma

[ Carcinoma TGLS = 1-3 ]

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PRIMARY CAUSE OF DEATH

- Spleen Leukemia Mononuclear

CONTRIBUTORY CAUSE OF DEATH

- Brain Hemorrhage;Thyroid Gland C Cell Carcinoma

---

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 610

TRT#: 7

SEX: Male

DAY ON TEST: 726

DOSE: 1800 PPM

DISP: Terminal Sacrifice

HISTO: 44672

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lung	* Lymph Node, Mesenteric	* Mammary Gland
* Pancreas	* Parathyroid Gland	Peritoneum	Pleura
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
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OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Marked
* Heart		Cardiomyopathy	Mild
* Kidney	Pelvis, Transit Epithe	Hyperplasia	Minimal
		Nephropathy	Marked
	[ Nephropathy TGLS = 3,5-7+14 ]		
* Liver		Clear Cell Focus	
* Nose	Goblet Cell	Foreign Body	Moderate
		Hyperplasia	Mild
		Inflammation	Suppurative, Minimal
* Pituitary Gland		Adenoma	
	[ Adenoma TGLS = 1-10 ]		
* Skin		Sarcoma	
	[ Sarcoma TGLS = 4-15+16 ]		
* Testes	Bilateral, Interstit Cell	Adenoma	
	[ Adenoma TGLS = 2-9 ]		

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 611

TRT#: 7

SEX: Male

DAY ON TEST: 702

DOSE: 1800 PPM

DISP: Moribund Sacrifice

HISTO: 44673

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lung
* Lymph Node, Mediastinal	* Mammary Gland	* Nose	* Pancreas
* Parathyroid Gland	* Pituitary Gland	Pleura	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Kidney		Infarct Leukemia Mononuclear Nephropathy	Moderate
[ Infarct TGLS = 4-7 ]			
[ Nephropathy TGLS = 8-7 ]			
* Liver		Angiectasis Leukemia Mononuclear	Moderate
[ Angiectasis TGLS = 6-6 ]			
* Lymph Node, Mesenteric		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 7-8 ]			
* Spleen		Fibrosis Leukemia Mononuclear	Marked
[ Fibrosis TGLS = 3-14 ]			
[ Leukemia Mononuclear TGLS = 2-14 ]			
* Stomach, Forestomach		Ulcer	Moderate
[ Ulcer TGLS = 9-15 ]			
* Testes	Bilateral, Interstit Cell	Adenoma	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Methyl isobutyl ketone  
**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014  
**Time Report Requested:** 22:41:41  
**First Dose M/F:** NA / NA  
**Lab:** BNW

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**ANIMAL ID:** 611

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 702

**DOSE:** 1800 PPM

**DISP:** Moribund Sacrifice

**HISTO:** 44673

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Adenoma TGLS = 5-9 ]

---

PRIMARY CAUSE OF DEATH

- Spleen Leukemia Mononuclear

CONTRIBUTORY CAUSE OF DEATH

- Spleen Fibrosis

---

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:41

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 612

TRT#: 7

SEX: Male

DAY ON TEST: 609

DOSE: 1800 PPM

DISP: Moribund Sacrifice

HISTO: 44674

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Epididymis	* Esophagus	* Eye	* Harderian Gland
* 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	Peritoneum
Pleura	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Stomach, Forestomach	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Medulla		Leukemia Mononuclear Pheochromocytoma Benign	
[ Leukemia Mononuclear TGLS = 8-7 ]			
[ Pheochromocytoma Benign TGLS = 8-7 ]			
* Brain		Compression	Mild
* Kidney	Pelvis, Transit Epithe Renal Tubule	Hyperplasia Hyperplasia Leukemia Mononuclear	Minimal Minimal
	Papilla	Mineralization Nephropathy	Minimal Marked
[ Nephropathy TGLS = 7-7+15 ]			
* Larynx		Inflammation	Suppurative, Mild
* Liver	Bile Duct	Hyperplasia Leukemia Mononuclear	Mild
[ Leukemia Mononuclear TGLS = 6-6 ]			
* Lung		Leukemia Mononuclear	
* Lymph Node, Mediastinal		Leukemia Mononuclear	
* Lymph Node, Mesenteric		Leukemia Mononuclear	
* Mammary Gland		Galactoceles	Marked

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 97006-01

**Test Type:** CHRONIC

**Route:** RESPIRATORY EXPOSURE WHOLE BODY

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Methyl isobutyl ketone

**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014

**Time Report Requested:** 22:41:42

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

**Lab:** BNW

**ANIMAL ID:** 612

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 609

**DOSE:** 1800 PPM

**DISP:** Moribund Sacrifice

**HISTO:** 44674

**ORGAN AND ACCOUNTABLE SITE STATUS**

[ Galactoceles TGLS = 1-16 ]

\* Pituitary Gland

Adenoma

[ Adenoma TGLS = 2-10 ]

\* Spleen

Fibrosis

Marked

Leukemia Mononuclear

[ Fibrosis TGLS = 5-15 ]

[ Leukemia Mononuclear TGLS = 4-14 ]

\* Stomach, Glandular

Ulcer

Marked

[ Ulcer TGLS = 11-16 ]

\* Testes

Interstitial Cell

Adenoma

[ Adenoma TGLS = 3-9 ]

PRIMARY CAUSE OF DEATH

- Spleen Leukemia Mononuclear

CONTRIBUTORY CAUSE OF DEATH

- Pituitary Gland Adenoma; Spleen Fibrosis

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 613

TRT#: 7

SEX: Male

DAY ON TEST: 665

DOSE: 1800 PPM

DISP: Moribund Sacrifice

HISTO: 44675

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Epididymis	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Mammary Gland	* Nose	* Pancreas
* Parathyroid Gland	Peritoneum	Pleura	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Marked
* Brain		Hemorrhage	Mild
* Kidney		Leukemia Mononuclear	
		Nephropathy	Mild
* Liver	Bile Duct	Hyperplasia	Moderate
		Leukemia Mononuclear	
		[ Leukemia Mononuclear TGLS = 4-6 ]	
* Lung		Leukemia Mononuclear	
		[ Leukemia Mononuclear TGLS = 2-4+5+14 ]	
* Lymph Node, Mediastinal		Leukemia Mononuclear	
		[ Leukemia Mononuclear TGLS = 1-3 ]	
* Lymph Node, Mesenteric		Leukemia Mononuclear	
		[ Leukemia Mononuclear TGLS = 10-17 ]	
Mesentery		Necrosis	Moderate
		[ Necrosis TGLS = 8-19 ]	
* Pituitary Gland		Adenoma	
		[ Adenoma TGLS = 3-10 ]	
* Spleen		Leukemia Mononuclear	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01

**Test Type:** CHRONIC

**Route:** RESPIRATORY EXPOSURE WHOLE BODY

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Methyl isobutyl ketone

**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014

**Time Report Requested:** 22:41:42

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

**Lab:** BNW

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**ANIMAL ID:** 613

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 665

**DOSE:** 1800 PPM

**DISP:** Moribund Sacrifice

**HISTO:** 44675

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Leukemia Mononuclear TGLS = 5-15 ]

[ Necrosis TGLS = 6,7-16 ]

\* Testes

Bilateral, Interstit Cell

Necrosis

Marked

Adenoma

[ Adenoma TGLS = 9-9 ]

---

PRIMARY CAUSE OF DEATH

- Spleen Leukemia Mononuclear

---

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 614

TRT#: 7

SEX: Male

DAY ON TEST: 726

DOSE: 1800 PPM

DISP: Terminal Sacrifice

HISTO: 44676

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Nose	* Pancreas	* Parathyroid Gland
Peritoneum	Pleura	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Kidney		Nephropathy	Moderate
[ Nephropathy TGLS = 2-7 ]			
* Larynx		Foreign Body	Marked
* Liver		Basophilic Focus	
		Clear Cell Focus	
		Eosinophilic Focus	
		Hepatodiaphragmatic Nodule	Marked
[ Hepatodiaphragmatic Nodule TGLS = 5-14 ]			
* Lung	Alveolar Epith	Hyperplasia	Mild
	Alveolus	Infiltration Cellular	Histiocyte, Mild
[ Hyperplasia TGLS = 7-5 ]			
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 1-10 ]			
* Testes	Interstit Cell	Adenoma	
	Germinal Epith	Atrophy	Marked
[ Adenoma TGLS = 3-9 ]			
[ Atrophy TGLS = 4-9 ]			

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Methyl isobutyl ketone  
**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014  
**Time Report Requested:** 22:41:42  
**First Dose M/F:** NA / NA  
**Lab:** BNW

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**ANIMAL ID:** 614

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 726

**DOSE:** 1800 PPM

**DISP:** Terminal Sacrifice

**HISTO:** 44676

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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: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 615

TRT#: 7

SEX: Male

DAY ON TEST: 726

DOSE: 1800 PPM

DISP: Terminal Sacrifice

HISTO: 44677

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Nose	* Pancreas	* Parathyroid Gland
Peritoneum	* Pituitary Gland	Pleura	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

\* Lymph Node, Mandibular

OBSERVATIONS

* Adrenal Medulla		Pheochromocytoma Malignant	
[ Pheochromocytoma Malignant TGLS = 6-16 ]			
* Kidney	Pelvis, Transit Epithe	Hyperplasia	Moderate
	Renal Tubule	Hyperplasia	Marked
	Papilla	Mineralization	Mild
		Nephropathy	Moderate
[ Nephropathy TGLS = 7-7 ]			
* Liver		Hepatodiaphragmatic Nodule	Marked
		Leukemia Mononuclear	
		Mixed Cell Focus	
	Hepatocyte	Regeneration	Marked
[ Hepatodiaphragmatic Nodule TGLS = 4-14 ]			
[ Regeneration TGLS = 5-6 ]			
* Lung		Leukemia Mononuclear	
* Lymph Node, Bronchial		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-17 ]			
* Skin	Subcut Tiss	Fibroma	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01

**Test Type:** CHRONIC

**Route:** RESPIRATORY EXPOSURE WHOLE BODY

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Methyl isobutyl ketone

**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014

**Time Report Requested:** 22:41:42

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

**Lab:** BNW

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**ANIMAL ID:** 615

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 726

**DOSE:** 1800 PPM

**DISP:** Terminal Sacrifice

**HISTO:** 44677

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Fibroma TGLS = 8-18 ]

\* Spleen

Leukemia Mononuclear

[ Leukemia Mononuclear TGLS = 3-15 ]

\* Testes

Interstit Cell

Adenoma

[ Adenoma TGLS = 2-9 ]

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PRIMARY CAUSE OF DEATH

-

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 616

TRT#: 7

SEX: Male

DAY ON TEST: 681

DOSE: 1800 PPM

DISP: Moribund Sacrifice

HISTO: 44678

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lymph Node, Mesenteric
* Mammary Gland	* Nose	* Pancreas	* Parathyroid Gland
Peritoneum	Pleura	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Kidney	Renal Tubule	Hyperplasia	Marked
		Leukemia Mononuclear	
	Papilla	Mineralization	Mild
		Nephropathy	Mild
		Leukemia Mononuclear	
* Liver			
[ Leukemia Mononuclear TGLS = 3-6 ]			
* Lung		Leukemia Mononuclear	
* Lymph Node, Mediastinal		Leukemia Mononuclear	
* Pituitary Gland		Hyperplasia	Marked
* Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-14 ]			
* Testes	Bilateral, Interstit Cell	Adenoma	
[ Adenoma TGLS = 2-9 ]			
* Urinary Bladder	Transit Epithe	Papilloma	

PRIMARY CAUSE OF DEATH

- Spleen Leukemia Mononuclear

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 617

TRT#: 7

SEX: Male

DAY ON TEST: 705

DOSE: 1800 PPM

DISP: Moribund Sacrifice

HISTO: 44679

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Nose	* Pancreas
* Parathyroid Gland	Peritoneum	Pleura	* Preputial Gland
* Salivary Glands	* Seminal Vesicle	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Kidney	Pelvis, Transit Epithe Papilla	Hyperplasia Mineralization Nephropathy	Mild Minimal Moderate
[ Nephropathy TGLS = 9-7 ]			
* Liver	Centrilobular	Eosinophilic Focus Hepatodiaphragmatic Nodule Leukemia Mononuclear Necrosis	Marked Minimal
[ Hepatodiaphragmatic Nodule TGLS = 8-14 ]			
[ Leukemia Mononuclear TGLS = 7-6 ]			
* Lung		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 2-4+5 ]			
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 5-10 ]			
* Prostate		Inflammation	Suppurative, Mild
* Skin		Cyst Epithelial Inclusion Fibrous Histiocytoma	Marked
[ Cyst Epithelial Inclusion TGLS = 1-15 ]			

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01

**Test Type:** CHRONIC

**Route:** RESPIRATORY EXPOSURE WHOLE BODY

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Methyl isobutyl ketone

**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014

**Time Report Requested:** 22:41:42

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

**Lab:** BNW

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**ANIMAL ID:** 617

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 705

**DOSE:** 1800 PPM

**DISP:** Moribund Sacrifice

**HISTO:** 44679

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Fibrous Histiocytoma TGLS = 3-16 ]

\* Spleen

Leukemia Mononuclear

[ Leukemia Mononuclear TGLS = 6-14 ]

\* Testes

Bilateral, Interstit Cell

Adenoma

Germinal Epith

Atrophy

Marked

[ Atrophy TGLS = 4-9 ]

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**PRIMARY CAUSE OF DEATH**

- Spleen Leukemia Mononuclear

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 618

TRT#: 7

SEX: Male

DAY ON TEST: 595

DOSE: 1800 PPM

DISP: Moribund Sacrifice

HISTO: 44680

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lymph Node, Mesenteric
* Mammary Gland	* Nose	* Pancreas	* Parathyroid Gland
Peritoneum	* Pituitary Gland	Pleura	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

\* Lymph Node, Mandibular

OBSERVATIONS

* Kidney	Papilla	Mineralization Nephropathy Leukemia Mononuclear	Minimal Mild
* Liver			
[ Leukemia Mononuclear TGLS = 6-6 ]			
* Lung		Carcinoma	Metastatic (Zymbal'S Gland)
* Lymph Node, Bronchial		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 2-3 ]			
* Lymph Node, Mediastinal		Leukemia Mononuclear	
* Spleen		Accessory Spleen Leukemia Mononuclear	
[ Accessory Spleen TGLS = 7-16 ]			
[ Leukemia Mononuclear TGLS = 5-16 ]			
* Testes	Bilateral, Interstit Cell	Adenoma	
[ Adenoma TGLS = 4-9 ]			
Zymbal's Gland		Carcinoma	
[ Carcinoma TGLS = 3-14+15 ]			

PRIMARY CAUSE OF DEATH - Zymbal's Gland Carcinoma

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Methyl isobutyl ketone  
**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014  
**Time Report Requested:** 22:41:42  
**First Dose M/F:** NA / NA  
**Lab:** BNW

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**ANIMAL ID:** 618

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 595

**DOSE:** 1800 PPM

**DISP:** Moribund Sacrifice

**HISTO:** 44680

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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CONTRIBUTORY CAUSE OF DEATH

- Spleen Leukemia Mononuclear

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 619

TRT#: 7

SEX: Male

DAY ON TEST: 726

DOSE: 1800 PPM

DISP: Terminal Sacrifice

HISTO: 44681

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lung	* Lymph Node, Mesenteric	* Mammary Gland
* Nose	* Pancreas	* Parathyroid Gland	Peritoneum
Pleura	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Medulla		Hyperplasia Pheochromocytoma Benign	Mild
* Heart		Cardiomyopathy	Mild
* Kidney	Pelvis, Transit Epithe Renal Tubule Papilla	Hyperplasia Hyperplasia Mineralization Nephropathy	Minimal Mild Mild Marked
[ Nephropathy TGLS = 3-7 ]			
* Liver		Clear Cell Focus Eosinophilic Focus Hyperplasia	Lymphoid, Marked
* Lymph Node, Mediastinal			
[ Hyperplasia TGLS = 1-3 ]			
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 4-10 ]			
* Skin		Hyperkeratosis Inflammation	Moderate Granulomatous, Moderate
[ Inflammation TGLS = 5-14 ]			
* Testes	Bilateral, Interstit Cell	Adenoma	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Methyl isobutyl ketone  
**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014  
**Time Report Requested:** 22:41:42  
**First Dose M/F:** NA / NA  
**Lab:** BNW

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**ANIMAL ID:** 619

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 726

**DOSE:** 1800 PPM

**DISP:** Terminal Sacrifice

**HISTO:** 44681

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Adenoma TGLS = 2-9 ]

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PRIMARY CAUSE OF DEATH

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 620

TRT#: 7

SEX: Male

DAY ON TEST: 712

DOSE: 1800 PPM

DISP: Moribund Sacrifice

HISTO: 44682

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Blood Vessel	* Bone	* Bone Marrow	* Brain
* Epididymis	* Esophagus	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx
* Lung	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Parathyroid Gland	Peritoneum	* Pituitary Gland	Pleura
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
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INSUFFICIENT TISSUE

\* Eye

OBSERVATIONS

* Adrenal Cortex		Vacuolization Cytoplasmic	Mild
* Adrenal Medulla		Hyperplasia	Mild
		Pheochromocytoma Benign	
* Kidney	Pelvis, Transit Epithe	Hyperplasia	Mild
	Renal Tubule	Hyperplasia	Minimal
	Papilla	Mineralization	Minimal
		Nephropathy	Marked
	[ Nephropathy TGLS = 5-7 ]		
* Liver		Degeneration	Cystic, Moderate
	Bile Duct	Hyperplasia	Moderate
		Leukemia Mononuclear	
	[ Degeneration TGLS = 3-6 ]		
	[ Leukemia Mononuclear TGLS = 2-6 ]		
* Pancreas	Acinus	Atrophy	Mild
* Spleen		Leukemia Mononuclear	
	[ Leukemia Mononuclear TGLS = 4-14 ]		

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01

**Test Type:** CHRONIC

**Route:** RESPIRATORY EXPOSURE WHOLE BODY

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Methyl isobutyl ketone

**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014

**Time Report Requested:** 22:41:42

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

**Lab:** BNW

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**ANIMAL ID:** 620

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 712

**DOSE:** 1800 PPM

**DISP:** Moribund Sacrifice

**HISTO:** 44682

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* Testes

Bilateral, Interstit Cell  
Germinal Epith

Adenoma  
Atrophy

Marked

[ Adenoma TGLS = 7-9 ]

[ Atrophy TGLS = 6-9 ]

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PRIMARY CAUSE OF DEATH

- Spleen Leukemia Mononuclear

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\* PROTOCOL REQUIRED TISSUE



Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 621

TRT#: 7

SEX: Male

DAY ON TEST: 639

DOSE: 1800 PPM

DISP: Moribund Sacrifice

HISTO: 44683

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lymph Node, Mediastinal	* Mammary Gland
* Nose	* Pancreas	* Parathyroid Gland	Peritoneum
* Pituitary Gland	Pleura	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

\* Lymph Node, Mandibular

OBSERVATIONS

* Adrenal Medulla	Bilateral	Pheochromocytoma Benign	
* Kidney		Nephropathy	Marked
[ Nephropathy TGLS = 8-7 ]			
* Liver		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 7-6 ]			
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Moderate
[ Infiltration Cellular TGLS = 2-4+5 ]		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 2-4+5 ]			
Lymph Node	Pancreatic	Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 6-14 ]			
* Lymph Node, Bronchial		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-15 ]			
* Lymph Node, Mesenteric		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 9-8 ]			
* Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 5-14 ]			
* Stomach, Forestomach		Ulcer	Marked

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01

**Test Type:** CHRONIC

**Route:** RESPIRATORY EXPOSURE WHOLE BODY

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Methyl isobutyl ketone

**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014

**Time Report Requested:** 22:41:42

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

**Lab:** BNW

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**ANIMAL ID:** 621

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 639

**DOSE:** 1800 PPM

**DISP:** Moribund Sacrifice

**HISTO:** 44683

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Ulcer TGLS = 10-15 ]

\* Testes

Bilateral, Interstit Cell  
Germinal Epith

Adenoma  
Atrophy

Marked

[ Adenoma TGLS = 3-9 ]

[ Atrophy TGLS = 4-9 ]

---

PRIMARY CAUSE OF DEATH

- Spleen Leukemia Mononuclear

CONTRIBUTORY CAUSE OF DEATH

- Stomach;Forestomach Ulcer

---

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 622

TRT#: 7

SEX: Male

DAY ON TEST: 622

DOSE: 1800 PPM

DISP: Moribund Sacrifice

HISTO: 44684

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lymph Node, Mediastinal
* Mammary Gland	* Pancreas	* Parathyroid Gland	Peritoneum
Pleura	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Kidney	Papilla	Leukemia Mononuclear Mineralization Nephropathy	Minimal Moderate
* Liver		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 7-6 ]			
* Lung	Interstitialium Alveolar Epith Alveolus	Fibrosis Hyperplasia Infiltration Cellular Leukemia Mononuclear	Minimal Minimal Histiocyte, Moderate
[ Leukemia Mononuclear TGLS = 4-4+5 ]			
Lymph Node	Pancreatic	Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 3-14 ]			
* Lymph Node, Mesenteric		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 6-15 ]			
* Nose		Foreign Body Inflammation	Moderate Suppurative, Minimal
* Pituitary Gland		Adenoma	
* Spleen		Leukemia Mononuclear	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Methyl isobutyl ketone  
**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014  
**Time Report Requested:** 22:41:42  
**First Dose M/F:** NA / NA  
**Lab:** BNW

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<b>ANIMAL ID:</b> 622	<b>TRT#:</b> 7	<b>SEX:</b> Male	<b>DAY ON TEST:</b> 622
	<b>DOSE:</b> 1800 PPM	<b>DISP:</b> Moribund Sacrifice	<b>HISTO:</b> 44684

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Leukemia Mononuclear TGLS = 2-14 ]

\* Testes

Bilateral, Interstit Cell

Adenoma

[ Adenoma TGLS = 5-9 ]

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**PRIMARY CAUSE OF DEATH** - Spleen Leukemia Mononuclear

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 623

TRT#: 7

SEX: Male

DAY ON TEST: 677

DOSE: 1800 PPM

DISP: Moribund Sacrifice

HISTO: 44685

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Liver	* Lung
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Pancreas	* Parathyroid Gland	Peritoneum	Pleura
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Marked
* Kidney		Nephropathy	Marked
[ Nephropathy TGLS = 5-7 ]			
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 1-10 ]			
* Spleen		Fibrosis	Marked
[ Fibrosis TGLS = 4-6 ]			
* Testes	Bilateral, Interstit Cell	Adenoma	
	Germinal Epith	Atrophy	Marked
[ Adenoma TGLS = 3-9 ]			
[ Atrophy TGLS = 2-9 ]			

PRIMARY CAUSE OF DEATH	- Pituitary Gland Adenoma
CONTRIBUTORY CAUSE OF DEATH	- Kidney Nephropathy

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 624

TRT#: 7

SEX: Male

DAY ON TEST: 636

DOSE: 1800 PPM

DISP: Moribund Sacrifice

HISTO: 44686

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Pancreas	* Parathyroid Gland	Peritoneum	* Pituitary Gland
Pleura	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Medulla		Pheochromocytoma Benign	
* Kidney	Papilla	Mineralization	Minimal
		Nephropathy	Moderate
* Larynx		Foreign Body	Marked
		Inflammation	Suppurative, Minimal
* Liver		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 4-6 ]			
* Lung		Leukemia Mononuclear	
Lymph Node	Pancreatic	Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 3-14 ]			
Mesentery		Necrosis	Marked
[ Necrosis TGLS = 5-15 ]			
* Nose		Inflammation	Suppurative, Mild
* Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 2-14 ]			
* Testes	Bilateral, Interstit Cell	Adenoma	
	Germinal Epith	Atrophy	Moderate
[ Atrophy TGLS = 1-9 ]			

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Methyl isobutyl ketone  
**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014  
**Time Report Requested:** 22:41:42  
**First Dose M/F:** NA / NA  
**Lab:** BNW

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**ANIMAL ID:** 624

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 636

**DOSE:** 1800 PPM

**DISP:** Moribund Sacrifice

**HISTO:** 44686

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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PRIMARY CAUSE OF DEATH

- Spleen Leukemia Mononuclear

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 625

TRT#: 7

SEX: Male

DAY ON TEST: 726

DOSE: 1800 PPM

DISP: Terminal Sacrifice

HISTO: 44687

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Pancreas	* Parathyroid Gland	Peritoneum	Pleura
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Trachea	* Urinary Bladder		

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
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INSUFFICIENT TISSUE

\* Eye

OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Moderate
* Kidney	Renal Tubule	Hyperplasia	Moderate
	Transit Epithe	Hyperplasia	Moderate
	Papilla	Leukemia Mononuclear	
		Mineralization	Mild
		Nephropathy	Moderate
* Liver		Leukemia Mononuclear	
	[ Leukemia Mononuclear TGLS = 1-6 ]		
* Lung		Leukemia Mononuclear	
* Pituitary Gland		Adenoma	
		Hyperplasia	Marked
		Leukemia Mononuclear	
* Spleen		Leukemia Mononuclear	
	[ Leukemia Mononuclear TGLS = 2,4-14+15 ]		
* Testes	Bilateral, Interstit Cell	Adenoma	
	[ Adenoma TGLS = 3-9 ]		

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 97006-01

**Test Type:** CHRONIC

**Route:** RESPIRATORY EXPOSURE WHOLE BODY

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Methyl isobutyl ketone

**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014

**Time Report Requested:** 22:41:42

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

**Lab:** BNW

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**ANIMAL ID:** 625

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 726

**DOSE:** 1800 PPM

**DISP:** Terminal Sacrifice

**HISTO:** 44687

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* 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: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 626

TRT#: 7

SEX: Male

DAY ON TEST: 544

DOSE: 1800 PPM

DISP: Moribund Sacrifice

HISTO: 44688

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lymph Node, Mandibular	* Mammary Gland	* Nose
* Pancreas	* Parathyroid Gland	Peritoneum	* Pituitary Gland
Pleura	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

\* Lymph Node, Bronchial

OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Minimal
* Eye	Cornea	Hyperplasia	Mild
* Kidney	Renal Tubule	Accumulation, Hyaline Droplet	Minimal
	Papilla	Mineralization	Minimal
		Nephropathy	Minimal
Note: MCL-related pigment in cortical tubules makes evaluation of hyaline droplet accumulation difficult.			
* Liver		Leukemia Mononuclear	
	[ Leukemia Mononuclear TGLS = 5,6,7-6 ]		
* Lung		Leukemia Mononuclear	
	[ Leukemia Mononuclear TGLS = 2,3,10-14+16+17 ]		
* Lymph Node, Mediastinal		Leukemia Mononuclear	
	[ Leukemia Mononuclear TGLS = 8-3 ]		
* Lymph Node, Mesenteric		Leukemia Mononuclear	
	[ Leukemia Mononuclear TGLS = 9-8 ]		
* Spleen		Leukemia Mononuclear	
	[ Leukemia Mononuclear TGLS = 1-15 ]		
* Stomach, Forestomach		Ulcer	Marked
	[ Ulcer TGLS = 11-10 ]		

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01

**Test Type:** CHRONIC

**Route:** RESPIRATORY EXPOSURE WHOLE BODY

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Methyl isobutyl ketone

**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014

**Time Report Requested:** 22:41:42

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

**Lab:** BNW

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**ANIMAL ID:** 626

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 544

**DOSE:** 1800 PPM

**DISP:** Moribund Sacrifice

**HISTO:** 44688

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* Testes

Interstit Cell

Adenoma

Moderate

Interstit Cell

Hyperplasia

[ Adenoma TGLS = 4-9 ]

[ Hyperplasia TGLS = 4-9 ]

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PRIMARY CAUSE OF DEATH

- Spleen Leukemia Mononuclear

CONTRIBUTORY CAUSE OF DEATH

- Stomach;Forestomach Ulcer

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 627

TRT#: 7

SEX: Male

DAY ON TEST: 567

DOSE: 1800 PPM

DISP: Moribund Sacrifice

HISTO: 44689

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Mammary Gland
* Nose	* Pancreas	* Parathyroid Gland	Peritoneum
* Pituitary Gland	Pleura	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

\* Lymph Node, Mandibular

OBSERVATIONS

* Kidney	Renal Tubule	Accumulation, Hyaline Droplet	Minimal
	Papilla	Leukemia Mononuclear	
		Mineralization	Minimal
		Nephropathy	Minimal
	Note: MCL-related pigment in cortical tubules makes evaluation of hyaline droplet accumulation difficult.		
* Liver		Leukemia Mononuclear	
		[ Leukemia Mononuclear TGLS = 7-6 ]	
* Lung		Leukemia Mononuclear	
		[ Leukemia Mononuclear TGLS = 3-14 ]	
Lymph Node	Deep Cervical	Leukemia Mononuclear	
	Pancreatic	Leukemia Mononuclear	
		[ Leukemia Mononuclear TGLS = 2-17 ]	
		[ Leukemia Mononuclear TGLS = 5-15 ]	
* Lymph Node, Bronchial		Leukemia Mononuclear	
		[ Leukemia Mononuclear TGLS = 1-16 ]	
* Lymph Node, Mediastinal		Leukemia Mononuclear	
* Lymph Node, Mesenteric		Leukemia Mononuclear	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01

**Test Type:** CHRONIC

**Route:** RESPIRATORY EXPOSURE WHOLE BODY

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Methyl isobutyl ketone

**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014

**Time Report Requested:** 22:41:42

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

**Lab:** BNW

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**ANIMAL ID:** 627

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 567

**DOSE:** 1800 PPM

**DISP:** Moribund Sacrifice

**HISTO:** 44689

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Leukemia Mononuclear TGLS = 8-8 ]

\* Spleen

Leukemia Mononuclear

[ Leukemia Mononuclear TGLS = 6-15 ]

\* Testes

Germinal Epith

Atrophy

Marked

[ Atrophy TGLS = 4-9 ]

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PRIMARY CAUSE OF DEATH

- Spleen Leukemia Mononuclear

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 628

TRT#: 7

SEX: Male

DAY ON TEST: 726

DOSE: 1800 PPM

DISP: Terminal Sacrifice

HISTO: 44690

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Pancreas	* Parathyroid Gland	Peritoneum	Pleura
* Prostate	* Salivary Glands	* Seminal Vesicle	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Mild
* Heart		Cardiomyopathy	Mild
* Kidney	Pelvis, Transit Epithe Renal Tubule	Hyperplasia Hyperplasia Nephropathy	Moderate Mild Marked
	[ Nephropathy TGLS = 7-7 ]		
* Liver		Basophilic Focus Clear Cell Focus	
* Lung	[ Alveolar/Bronchiolar Carcinoma TGLS = 2,8-5+3 ]	Alveolar/Bronchiolar Carcinoma	
* Nose		Inflammation	Suppurative, Minimal
* Pituitary Gland		Adenoma	
	[ Adenoma TGLS = 1-10 ]		
* Preputial Gland		Hyperplasia	Marked
	[ Hyperplasia TGLS = 5-9+14 ]		
* Skin	Sebaceous GI	Adenoma Cyst Epithelial Inclusion	Marked
	[ Adenoma TGLS = 3-15 ]		

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01

**Test Type:** CHRONIC

**Route:** RESPIRATORY EXPOSURE WHOLE BODY

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Methyl isobutyl ketone

**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014

**Time Report Requested:** 22:41:42

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

**Lab:** BNW

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**ANIMAL ID:** 628

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 726

**DOSE:** 1800 PPM

**DISP:** Terminal Sacrifice

**HISTO:** 44690

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Cyst Epithelial Inclusion TGLS = 4-16 ]

\* Testes

Bilateral, Interstit Cell

Adenoma

[ Adenoma TGLS = 6-9 ]

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**PRIMARY CAUSE OF DEATH**

-

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 629

TRT#: 7

SEX: Male

DAY ON TEST: 726

DOSE: 1800 PPM

DISP: Terminal Sacrifice

HISTO: 44691

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Nose	* Pancreas
* Parathyroid Gland	Peripheral Nerve	Peritoneum	Pleura
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
Skeletal Muscle	Spinal Cord	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Mild
* Kidney	Renal Tubule	Hyperplasia	Moderate
	Papilla	Leukemia Mononuclear	
		Mineralization	Minimal
		Nephropathy	Moderate
[ Nephropathy TGLS = 9-7 ]			
* Liver	Bile Duct	Hyperplasia	Marked
		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 8-6 ]			
* Lung		Leukemia Mononuclear	
Lymph Node	Deep Cervical	Leukemia Mononuclear	
	Pancreatic	Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 4-14 ]			
[ Leukemia Mononuclear TGLS = 11-15 ]			
* Lymph Node, Mediastinal		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 3-3 ]			
* Lymph Node, Mesenteric		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 12-8 ]			

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 97006-01

**Test Type:** CHRONIC

**Route:** RESPIRATORY EXPOSURE WHOLE BODY

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Methyl isobutyl ketone

**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014

**Time Report Requested:** 22:41:42

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

**Lab:** BNW

**ANIMAL ID:** 629

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 726

**DOSE:** 1800 PPM

**DISP:** Terminal Sacrifice

**HISTO:** 44691

**ORGAN AND ACCOUNTABLE SITE STATUS**

* Mammary Gland [ Fibroadenoma TGLS = 2-17 ]		Fibroadenoma	
* Pituitary Gland [ Leukemia Mononuclear TGLS = 10-10 ]		Leukemia Mononuclear	
* Skin [ Cyst Epithelial Inclusion TGLS = 1-15 ]		Cyst Epithelial Inclusion	Marked
* Spleen [ Leukemia Mononuclear TGLS = 6,7-14+15 ]		Leukemia Mononuclear	
* Testes [ Adenoma TGLS = 5-9 ]	Bilateral, Interstit Cell	Adenoma	
* Urinary Bladder		Leukemia Mononuclear	

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 630

TRT#: 7

SEX: Male

DAY ON TEST: 621

DOSE: 1800 PPM

DISP: Moribund Sacrifice

HISTO: 44692

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Nose	* Pancreas
* Parathyroid Gland	Peritoneum	Pleura	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Kidney		Nephropathy	Mild
* Liver		Leukemia Mononuclear Regeneration	Marked
[ Regeneration TGLS = 3-6 ]	Hepatocyte		
* Lung		Leukemia Mononuclear	
Lymph Node	Renal	Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 7-15 ]			
Mesentery		Necrosis	Moderate
[ Necrosis TGLS = 5-15 ]			
* Pituitary Gland		Cyst	Mild
[ Cyst TGLS = 2-10 ]			
* Preputial Gland		Hyperplasia	Moderate
* Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 4-14 ]			
* Testes	Interstit Cell	Adenoma	
[ Adenoma TGLS = 6-9 ]			

PRIMARY CAUSE OF DEATH - Spleen Leukemia Mononuclear

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Methyl isobutyl ketone  
**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014  
**Time Report Requested:** 22:41:42  
**First Dose M/F:** NA / NA  
**Lab:** BNW

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**ANIMAL ID:** 630

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 621

**DOSE:** 1800 PPM

**DISP:** Moribund Sacrifice

**HISTO:** 44692

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 631

TRT#: 7

SEX: Male

DAY ON TEST: 623

DOSE: 1800 PPM

DISP: Moribund Sacrifice

HISTO: 44693

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Blood Vessel	* Bone	* Bone Marrow	* Brain
* Esophagus	* Eye	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx
* Liver	* Lung	* Lymph Node, Mesenteric	* Mammary Gland
* Nose	* Pancreas	* Parathyroid Gland	Pleura
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Cortex		Vacuolization Cytoplasmic	Mild
* Adrenal Medulla		Hyperplasia	Minimal
* Epididymis		Mesothelioma Malignant	
* Kidney	Papilla	Mesothelioma Malignant	
		Mineralization	Moderate
		Nephropathy	Mild
	Renal Tubule	Pigmentation	Moderate
* Lymph Node, Mediastinal		Pigmentation	Marked
[ Pigmentation TGLS = 2-3 ]			
Peritoneum		Mesothelioma Malignant	
[ Mesothelioma Malignant TGLS = 3,4-6+14 ]			
* Pituitary Gland		Hyperplasia	Marked
* Testes	Interstit Cell	Adenoma	
	Germinal Epith	Atrophy	Marked
		Mesothelioma Malignant	
[ Adenoma TGLS = 5-9 ]			

PRIMARY CAUSE OF DEATH - Peritoneum Mesothelioma Malignant

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 632

TRT#: 7

SEX: Male

DAY ON TEST: 645

DOSE: 1800 PPM

DISP: Moribund Sacrifice

HISTO: 44694

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lymph Node, Mesenteric
* Mammary Gland	* Pancreas	* Parathyroid Gland	Peritoneum
Pleura	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Thymus
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OBSERVATIONS

* Kidney		Infarct	
		Nephropathy	Mild
[ Infarct TGLS = 3-15 ]			
* Liver		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-6 ]			
* Lung		Leukemia Mononuclear	
* Nose		Foreign Body	Moderate
	Goblet Cell	Hyperplasia	Moderate
	Respirat Epith	Hyperplasia	Moderate
		Inflammation	Suppurative, Mild
* Pituitary Gland		Hyperplasia	Moderate
* Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 2-14 ]			
* Testes	Bilateral, Interstit Cell	Adenoma	
	Germinal Epith	Atrophy	Marked
[ Adenoma TGLS = 5-9 ]			
[ Atrophy TGLS = 4-9 ]			

PRIMARY CAUSE OF DEATH - Spleen Leukemia Mononuclear

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Methyl isobutyl ketone  
**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014  
**Time Report Requested:** 22:41:42  
**First Dose M/F:** NA / NA  
**Lab:** BNW

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**ANIMAL ID:** 632

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 645

**DOSE:** 1800 PPM

**DISP:** Moribund Sacrifice

**HISTO:** 44694

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 633

TRT#: 7

SEX: Male

DAY ON TEST: 727

DOSE: 1800 PPM

DISP: Terminal Sacrifice

HISTO: 44695

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Larynx	* Lung	* Lymph Node, Mediastinal
* Mammary Gland	* Parathyroid Gland	Peritoneum	Pleura
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Islets, Pancreatic		Carcinoma	
* Kidney	Papilla	Mineralization	Mild
		Nephropathy	Mild
* Liver		Leukemia Mononuclear	
* Lymph Node, Mesenteric		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 4-8 ]			
* Nose		Foreign Body	Moderate
		Inflammation	Suppurative, Minimal
* Pancreas	Acinus	Atrophy	Moderate
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 1-10 ]			
* Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 2-6 ]			
* Testes	Bilateral, Interstit Cell	Adenoma	
[ Adenoma TGLS = 3-9 ]			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 634

TRT#: 7

SEX: Male

DAY ON TEST: 726

DOSE: 1800 PPM

DISP: Terminal Sacrifice

HISTO: 44696

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lung	* Lymph Node, Mesenteric	* Nose
* Pancreas	* Parathyroid Gland	Peritoneum	Pleura
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
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OBSERVATIONS

* Brain		Compression	Moderate
* Kidney	Pelvis, Transit Epithe Renal Tubule	Hyperplasia Hyperplasia Nephropathy	Mild Moderate Marked
* Larynx		Foreign Body	Marked
* Liver		Basophilic Focus Eosinophilic Focus Hepatodiaphragmatic Nodule	  Marked
[ Hepatodiaphragmatic Nodule TGLS = 3,4-6 ]			
* Mammary Gland		Carcinoma Galactocele	 Marked
[ Carcinoma TGLS = 1-3 ]			
[ Galactocele TGLS = 1-3 ]			
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 2-10 ]			
* Testes	Bilateral, Interstit Cell Germinal Epith	Adenoma Atrophy	 Moderate
[ Adenoma TGLS = 5,7-9 ]			

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 97006-01  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Methyl isobutyl ketone  
**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014  
**Time Report Requested:** 22:41:42  
**First Dose M/F:** NA / NA  
**Lab:** BNW

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**ANIMAL ID:** 634

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 726

**DOSE:** 1800 PPM

**DISP:** Terminal Sacrifice

**HISTO:** 44696

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Atrophy TGLS = 6-9 ]

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PRIMARY CAUSE OF DEATH

-

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 635

TRT#: 7

SEX: Male

DAY ON TEST: 726

DOSE: 1800 PPM

DISP: Terminal Sacrifice

HISTO: 44697

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lung	* Lymph Node, Mediastinal
* Mammary Gland	* Nose	* Pancreas	* Parathyroid Gland
Peritoneum	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Heart		Cardiomyopathy	Mild
* Kidney	Pelvis, Transit Epithe Papilla	Hyperplasia Mineralization Nephropathy	Minimal Mild Moderate
* Liver		Clear Cell Focus Eosinophilic Focus Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 6-6 ]			
* Lymph Node, Mesenteric		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 7-8 ]			
Mesentery		Necrosis	Moderate
[ Necrosis TGLS = 5-14 ]			
* Pituitary Gland		Hyperplasia	Marked
Pleura	Mesothelium	Hyperplasia	Marked
* Spleen		Fibrosis Leukemia Mononuclear	Moderate
[ Fibrosis TGLS = 3,4-15+16 ]			
* Testes	Interstit Cell	Adenoma	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Methyl isobutyl ketone  
**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014  
**Time Report Requested:** 22:41:42  
**First Dose M/F:** NA / NA  
**Lab:** BNW

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<b>ANIMAL ID:</b> 635	<b>TRT#:</b> 7	<b>SEX:</b> Male	<b>DAY ON TEST:</b> 726
	<b>DOSE:</b> 1800 PPM	<b>DISP:</b> Terminal Sacrifice	<b>HISTO:</b> 44697

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Adenoma TGLS = 1,2-17 ]	Germinal Epith	Atrophy	Marked
<b>PRIMARY CAUSE OF DEATH</b>	-		

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 636

TRT#: 7

SEX: Male

DAY ON TEST: 727

DOSE: 1800 PPM

DISP: Terminal Sacrifice

HISTO: 44698

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lung	* Lymph Node, Mediastinal
* Mammary Gland	* Pancreas	* Parathyroid Gland	Peripheral Nerve
Peritoneum	Pleura	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	Skeletal Muscle	* Skin
Spinal Cord	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea		

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Medulla		Pheochromocytoma Malignant	
* Kidney	Renal Tubule	Carcinoma	
	Pelvis, Transit Epithe	Hyperplasia	Minimal
	Papilla	Mineralization	Minimal
		Nephropathy	Mild
[ Carcinoma TGLS = 6-14 ]			
* Liver		Leukemia Mononuclear	
Lymph Node	Pancreatic	Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 5-16 ]			
* Lymph Node, Mesenteric		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 7-8 ]			
* Nose		Foreign Body	Moderate
	Goblet Cell	Hyperplasia	Moderate
* Pituitary Gland		Hyperplasia	Marked
* Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 3,4-6+15 ]			
* Testes	Bilateral, Interstit Cell	Adenoma	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01

**Test Type:** CHRONIC

**Route:** RESPIRATORY EXPOSURE WHOLE BODY

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Methyl isobutyl ketone

**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014

**Time Report Requested:** 22:41:42

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

**Lab:** BNW

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**ANIMAL ID:** 636

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 727

**DOSE:** 1800 PPM

**DISP:** Terminal Sacrifice

**HISTO:** 44698

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Adenoma TGLS = 1-9 ]

\* Urinary Bladder

[ Leiomyoma TGLS = 2-17 ]

Leiomyoma

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PRIMARY CAUSE OF DEATH

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 637

TRT#: 7

SEX: Male

DAY ON TEST: 604

DOSE: 1800 PPM

DISP: Moribund Sacrifice

HISTO: 44699

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lung
* Lymph Node, Mediastinal	* Mammary Gland	* Pancreas	* Parathyroid Gland
Peritoneum	Pleura	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Kidney		Leukemia Mononuclear Nephropathy	Moderate
Note: MCL pigment also in cortical tubules.			
* Liver		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-6 ]			
* Lymph Node, Mesenteric		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 4-8 ]			
* Nose	Respirat Epith	Hyperplasia Inflammation	Mild Suppurative, Mild
* Pituitary Gland		Adenoma	
* Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 2-14 ]			
* Testes	Bilateral, Interstit Cell	Adenoma	
[ Adenoma TGLS = 3-9 ]			

PRIMARY CAUSE OF DEATH - Spleen Leukemia Mononuclear

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 638

TRT#: 7

SEX: Male

DAY ON TEST: 726

DOSE: 1800 PPM

DISP: Terminal Sacrifice

HISTO: 44700

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lymph Node, Mediastinal
* Mammary Gland	* Nose	* Pancreas	* Parathyroid Gland
Peripheral Nerve	Peritoneum	Pleura	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	Skeletal Muscle
Spinal Cord	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

**MISSING**

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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**OBSERVATIONS**

* Kidney	Pelvis, Transit Epithe Papilla	Hyperplasia Mineralization Nephropathy Degeneration Eosinophilic Focus Leukemia Mononuclear	Minimal Moderate Moderate Cystic, Moderate
[ Leukemia Mononuclear TGLS = 4-6 ]			
* Lung	Alveolar Epith Bronchiole	Hyperplasia Hyperplasia Leukemia Mononuclear	Moderate Moderate
[ Hyperplasia TGLS = 3-16 ]			
* Lymph Node, Mesenteric		Leukemia Mononuclear	
* Pituitary Gland		Adenoma Hemorrhage	Moderate
[ Adenoma TGLS = 2-10 ]			
* Skin		Cyst Epithelial Inclusion	Marked
[ Cyst Epithelial Inclusion TGLS = 1-15 ]			

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01

**Test Type:** CHRONIC

**Route:** RESPIRATORY EXPOSURE WHOLE BODY

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Methyl isobutyl ketone

**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014

**Time Report Requested:** 22:41:42

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

**Lab:** BNW

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**ANIMAL ID:** 638

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 726

**DOSE:** 1800 PPM

**DISP:** Terminal Sacrifice

**HISTO:** 44700

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* Spleen

[ Leukemia Mononuclear TGLS = 5-17 ]

Leukemia Mononuclear

\* Testes

Bilateral, Interstit Cell

Adenoma

Germinal Epith

Atrophy

Marked

[ Adenoma TGLS = 6,7-9 ]

[ Atrophy TGLS = 8-9 ]

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PRIMARY CAUSE OF DEATH

-

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\* PROTOCOL REQUIRED TISSUE



Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 639

TRT#: 7

SEX: Male

DAY ON TEST: 726

DOSE: 1800 PPM

DISP: Terminal Sacrifice

HISTO: 44701

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Nose	* Pancreas	* Parathyroid Gland	Peritoneum
* Pituitary Gland	Pleura	* Prostate	* Salivary Glands
* Seminal Vesicle	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Marked
* Heart		Cardiomyopathy	Mild
* Kidney	Pelvis, Transit Epithe	Hyperplasia	Minimal
	Renal Tubule	Hyperplasia	Moderate
		Nephropathy	Moderate
	[ Nephropathy TGLS = 6-7 ]		
* Liver		Clear Cell Focus	
* Lung		Alveolar/Bronchiolar Carcinoma	
	[ Alveolar/Bronchiolar Carcinoma TGLS = 4-16 ]		
Mesentery		Necrosis	Moderate
	[ Necrosis TGLS = 2-15 ]		
* Preputial Gland		Inflammation	Granulomatous, Mild
	[ Inflammation TGLS = 7-18 ]		
* Skin		Basal Cell Adenoma	
		Inflammation	Granulomatous, Mild
	[ Basal Cell Adenoma TGLS = 1-14 ]		
	[ Inflammation TGLS = 7-18 ]		
* Spleen		Fibrosis	Marked

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01

**Test Type:** CHRONIC

**Route:** RESPIRATORY EXPOSURE WHOLE BODY

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Methyl isobutyl ketone

**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014

**Time Report Requested:** 22:41:42

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

**Lab:** BNW

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**ANIMAL ID:** 639

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 726

**DOSE:** 1800 PPM

**DISP:** Terminal Sacrifice

**HISTO:** 44701

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Note: Unusual cellular morphology with large vacuolated cells intermingled with collagenous fibers.

[ Fibrosis TGLS = 5-17 ]

\* Testes

Bilateral, Interstit Cell

Adenoma

[ Adenoma TGLS = 3-9 ]

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PRIMARY CAUSE OF DEATH

-

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 640

TRT#: 7

SEX: Male

DAY ON TEST: 706

DOSE: 1800 PPM

DISP: Moribund Sacrifice

HISTO: 44702

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Blood Vessel	* Bone	* Bone Marrow	* Brain
* Epididymis	* Esophagus	* Eye	* Harderian Gland
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx
* Lymph Node, Mesenteric	* Mammary Gland	* Nose	* Pancreas
* Parathyroid Gland	Peritoneum	Pleura	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Cortex		Necrosis	Mild
* Adrenal Medulla		Hyperplasia	Mild
		Leukemia Mononuclear	
* Heart		Cardiomyopathy	Mild
* Kidney	Pelvis, Transit Epithe	Hyperplasia	Minimal
	Renal Tubule	Hyperplasia	Marked
		Leukemia Mononuclear	
		Nephropathy	Marked
[ Nephropathy TGLS = 7-7 ]			
* Liver		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 6-6 ]			
* Lung		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 8-14 ]			
Lymph Node	Pancreatic	Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 9-15 ]			
* Lymph Node, Mediastinal		Leukemia Mononuclear	
* Pituitary Gland		Adenoma	
* Spleen		Leukemia Mononuclear	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01

**Test Type:** CHRONIC

**Route:** RESPIRATORY EXPOSURE WHOLE BODY

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Methyl isobutyl ketone

**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014

**Time Report Requested:** 22:41:42

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

**Lab:** BNW

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**ANIMAL ID:** 640

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 706

**DOSE:** 1800 PPM

**DISP:** Moribund Sacrifice

**HISTO:** 44702

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Leukemia Mononuclear TGLS = 3-15+16 ]

[ Necrosis TGLS = 4,5-15+16 ]

\* Testes

Bilateral, Interstit Cell

[ Adenoma TGLS = 2-9 ]

Necrosis

Marked

Adenoma

---

PRIMARY CAUSE OF DEATH

- Spleen Leukemia Mononuclear

---

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 641

TRT#: 7

SEX: Male

DAY ON TEST: 653

DOSE: 1800 PPM

DISP: Moribund Sacrifice

HISTO: 44703

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Epididymis	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lung	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Nose	* Pancreas	* Parathyroid Gland	Peritoneum
Pleura	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Moderate
		Pheochromocytoma Benign	
* Brain		Compression	Minimal
* Kidney	Pelvis, Transit Epithe Papilla	Hyperplasia	Mild
		Mineralization	Minimal
		Nephropathy	Marked
	[ Nephropathy TGLS = 4-7+14 ]		
* Liver		Degeneration	Cystic, Moderate
	[ Degeneration TGLS = 5,6-6+14 ]		
* Mammary Gland		Galactocele	Marked
	[ Galactocele TGLS = 1-15 ]		
Mesentery		Necrosis	Mild
	[ Necrosis TGLS = 3-15 ]		
* Pituitary Gland		Adenoma	
	[ Adenoma TGLS = 2-10 ]		
* Stomach, Forestomach		Ulcer	Marked
	[ Ulcer TGLS = 3-15 ]		
* Testes	Interstit Cell	Hyperplasia	Moderate

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Methyl isobutyl ketone  
**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014  
**Time Report Requested:** 22:41:42  
**First Dose M/F:** NA / NA  
**Lab:** BNW

---

**ANIMAL ID:** 641

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 653

**DOSE:** 1800 PPM

**DISP:** Moribund Sacrifice

**HISTO:** 44703

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

PRIMARY CAUSE OF DEATH

- Pituitary Gland Adenoma

CONTRIBUTORY CAUSE OF DEATH

- Stomach;Forestomach Ulcer

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 642

TRT#: 7

SEX: Male

DAY ON TEST: 649

DOSE: 1800 PPM

DISP: Natural Death

HISTO: 44704

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lymph Node, Mesenteric
* Mammary Gland	* Nose	* Pancreas	* Parathyroid Gland
Peritoneum	Pleura	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Stomach, Forestomach
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Lymph Node, Mandibular	* Lymph Node, Mediastinal
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OBSERVATIONS

* Kidney		Leukemia Mononuclear	
	Papilla	Mineralization	Mild
		Nephropathy	Mild
* Liver		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 9-6 ]			
* Lung		Leukemia Mononuclear	
Note: glandular tissue in lung on slide 5 is floater.			
[ Leukemia Mononuclear TGLS = 2-4+5 ]			
Lymph Node	Pancreatic	Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 4-14 ]			
* Lymph Node, Bronchial		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-3 ]			
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 6-10 ]			
* Spleen		Leukemia Mononuclear	
		Necrosis	Marked
[ Leukemia Mononuclear TGLS = 3-14 ]			
[ Necrosis TGLS = 5-15 ]			

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01

**Test Type:** CHRONIC

**Route:** RESPIRATORY EXPOSURE WHOLE BODY

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Methyl isobutyl ketone

**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014

**Time Report Requested:** 22:41:42

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

**Lab:** BNW

---

**ANIMAL ID:** 642

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 649

**DOSE:** 1800 PPM

**DISP:** Natural Death

**HISTO:** 44704

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* Stomach, Glandular  
[ Erosion TGLS = 10-10 ]

Erosion

Minimal

\* Testes  
[ Adenoma TGLS = 8-9 ]

Bilateral, Interstit Cell

Adenoma

---

PRIMARY CAUSE OF DEATH

- Spleen Leukemia Mononuclear

CONTRIBUTORY CAUSE OF DEATH

- Pituitary Gland Adenoma;Spleen Necrosis

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\* PROTOCOL REQUIRED TISSUE



Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 643

TRT#: 7

SEX: Male

DAY ON TEST: 719

DOSE: 1800 PPM

DISP: Moribund Sacrifice

HISTO: 44705

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Nose	* Pancreas	* Parathyroid Gland	Peritoneum
Pleura	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Marked
		Pheochromocytoma Benign	
* Eye	Lens	Cataract	Moderate
* Kidney	Renal Tubule	Adenoma	
	Pelvis, Transit Epithe	Hyperplasia	Minimal
	Renal Tubule	Hyperplasia	Mild
		Leukemia Mononuclear	
	Papilla	Mineralization	Mild
		Nephropathy	Marked
[ Adenoma TGLS = 11-14 ]			
[ Nephropathy TGLS = 10-7 ]			
* Liver		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 8,9-6+14 ]			
* Lung		Leukemia Mononuclear	
Lymph Node	Pancreatic	Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 5-15 ]			
* Pituitary Gland		Hyperplasia	Marked
		Leukemia Mononuclear	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01

**Test Type:** CHRONIC

**Route:** RESPIRATORY EXPOSURE WHOLE BODY

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Methyl isobutyl ketone

**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014

**Time Report Requested:** 22:41:42

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

**Lab:** BNW

**ANIMAL ID:** 643

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 719

**DOSE:** 1800 PPM

**DISP:** Moribund Sacrifice

**HISTO:** 44705

**ORGAN AND ACCOUNTABLE SITE STATUS**

* Skin	Subcut Tiss	Fibroma Hyperkeratosis	Minimal
[ Fibroma TGLS = 1-18+19 ]			
[ Hyperkeratosis TGLS = 2-17 ]			
* Spleen		Fibrosis Leukemia Mononuclear	Moderate
[ Fibrosis TGLS = 7-16 ]			
[ Leukemia Mononuclear TGLS = 6-15 ]			
* Testes	Bilateral, Interstit Cell	Adenoma	
[ Adenoma TGLS = 4-9 ]			

**PRIMARY CAUSE OF DEATH** - Spleen Leukemia Mononuclear

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 644

TRT#: 7

SEX: Male

DAY ON TEST: 726

DOSE: 1800 PPM

DISP: Terminal Sacrifice

HISTO: 44706

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lung	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Nose	* Pancreas
* Parathyroid Gland	Peripheral Nerve	Peritoneum	Pleura
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
Skeletal Muscle	* Skin	Spinal Cord	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Heart		Cardiomyopathy	Mild
* Kidney	Renal Tubule	Hyperplasia	Mild
		Nephropathy	Marked
* Liver		Clear Cell Focus	
		Eosinophilic Focus	
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 4-10 ]			
* Spleen		Fibrosis	Marked
[ Fibrosis TGLS = 3-15 ]			
* Testes	Bilateral, Interstit Cell	Adenoma	
[ Adenoma TGLS = 2-9 ]			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 645

TRT#: 7

SEX: Male

DAY ON TEST: 694

DOSE: 1800 PPM

DISP: Moribund Sacrifice

HISTO: 44707

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Epididymis	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Pancreas	* Parathyroid Gland	Peritoneum	* Preputial Gland
* Salivary Glands	* Seminal Vesicle	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Moderate
* Brain		Hemorrhage	Marked
* Kidney	Renal Tubule	Hyperplasia	Mild
		Nephropathy	Marked
* Larynx		Foreign Body	Marked
* Liver		Hepatodiaphragmatic Nodule	Marked
	[ Hepatodiaphragmatic Nodule TGLS = 3-14 ]		
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Mild
* Pituitary Gland		Adenoma	
	[ Adenoma TGLS = 1-10 ]		
Pleura		Inflammation	Chronic, Mild
* Prostate		Inflammation	Suppurative, Moderate
* Skin		Hyperkeratosis	Moderate
	[ Hyperkeratosis TGLS = 4-14 ]		
* Spleen		Leukemia Mononuclear	
* Stomach, Forestomach		Ulcer	Marked
	[ Ulcer TGLS = 5-15 ]		
* Testes	Bilateral, Interstit Cell	Adenoma	
	[ Adenoma TGLS = 2-9 ]		

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Methyl isobutyl ketone  
**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014  
**Time Report Requested:** 22:41:42  
**First Dose M/F:** NA / NA  
**Lab:** BNW

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**ANIMAL ID:** 645

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 694

**DOSE:** 1800 PPM

**DISP:** Moribund Sacrifice

**HISTO:** 44707

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

PRIMARY CAUSE OF DEATH

- Pituitary Gland Adenoma

CONTRIBUTORY CAUSE OF DEATH

- Brain Hemorrhage

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 646

TRT#: 7

SEX: Male

DAY ON TEST: 693

DOSE: 1800 PPM

DISP: Moribund Sacrifice

HISTO: 44708

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lymph Node, Mediastinal	* Mammary Gland
* Nose	* Pancreas	* Parathyroid Gland	Peripheral Nerve
Peritoneum	Pleura	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	Skeletal Muscle	Spinal Cord
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

\* Lymph Node, Mandibular

OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Marked
* Kidney	Renal Tubule	Hyperplasia	Mild
		Leukemia Mononuclear	
		Nephropathy	Moderate
[ Nephropathy TGLS = 5-7 ]			
* Liver		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 3-6 ]			
* Lung		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 8-4+5 ]			
* Lymph Node, Bronchial		Leukemia Mononuclear	
* Lymph Node, Mesenteric		Leukemia Mononuclear	
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 2-10 ]			
* Skin	Subcut Tiss	Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-14 ]			
* Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 4-14 ]			

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01

**Test Type:** CHRONIC

**Route:** RESPIRATORY EXPOSURE WHOLE BODY

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Methyl isobutyl ketone

**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014

**Time Report Requested:** 22:41:42

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

**Lab:** BNW

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**ANIMAL ID:** 646

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 693

**DOSE:** 1800 PPM

**DISP:** Moribund Sacrifice

**HISTO:** 44708

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* Testes

Bilateral, Interstit Cell  
Germinal Epith

Adenoma  
Atrophy

Moderate

[ Adenoma TGLS = 7-9 ]

[ Atrophy TGLS = 6-9 ]

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PRIMARY CAUSE OF DEATH

- Spleen Leukemia Mononuclear

CONTRIBUTORY CAUSE OF DEATH

- Pituitary Gland Adenoma

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 647

TRT#: 7

SEX: Male

DAY ON TEST: 726

DOSE: 1800 PPM

DISP: Terminal Sacrifice

HISTO: 44709

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Liver	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Pancreas	* Parathyroid Gland	Peritoneum
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Trachea	* Urinary Bladder	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Medulla		Hyperplasia Pheochromocytoma Benign	Mild
* Heart		Cardiomyopathy	Mild
* Kidney		Nephropathy	Marked
[ Nephropathy TGLS = 1-7 ]			
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Minimal
* Nose	Respirat Epith	Foreign Body	Moderate
		Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Pituitary Gland		Hyperplasia	Marked
[ Hyperplasia TGLS = 4-10 ]			
Pleura		Inflammation	Chronic, Minimal
* Testes	Bilateral, Interstit Cell	Adenoma	
[ Adenoma TGLS = 2-9 ]			
* Thyroid Gland	C Cell	Adenoma	

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 648

TRT#: 7

SEX: Male

DAY ON TEST: 694

DOSE: 1800 PPM

DISP: Natural Death

HISTO: 44710

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lymph Node, Mediastinal	* Mammary Gland	* Nose
* Pancreas	* Parathyroid Gland	Peritoneum	Pleura
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Trachea	* Urinary Bladder		

MISSING

\* Lymph Node, Bronchial

AUTO PRECLUDES DIAG.

\* Intestine Small, Ileum

OBSERVATIONS

* Brain		Compression	Moderate
* Kidney	Papilla	Mineralization	Minimal
		Nephropathy	Marked
	[ Nephropathy TGLS = 4-7 ]		
* Liver		Leukemia Mononuclear	
	[ Leukemia Mononuclear TGLS = 5-6 ]		
* Lung	Alveolar Epith	Hyperplasia	Mild
* Lymph Node, Mandibular		Leukemia Mononuclear	
* Lymph Node, Mesenteric		Leukemia Mononuclear	
* Pituitary Gland		Adenoma	
	[ Adenoma TGLS = 2-10 ]		
* Spleen		Fibrosis	Moderate
		Leukemia Mononuclear	
	[ Fibrosis TGLS = 6-14 ]		
* Testes	Bilateral, Interstit Cell	Adenoma	
	[ Adenoma TGLS = 3-9 ]		

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01

**Test Type:** CHRONIC

**Route:** RESPIRATORY EXPOSURE WHOLE BODY

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Methyl isobutyl ketone

**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014

**Time Report Requested:** 22:41:42

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

**Lab:** BNW

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**ANIMAL ID:** 648

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 694

**DOSE:** 1800 PPM

**DISP:** Natural Death

**HISTO:** 44710

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

\* Thyroid Gland

Follicle

Cyst

Marked

[ Cyst TGLS = 1-3 ]

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PRIMARY CAUSE OF DEATH

- Pituitary Gland Adenoma

---

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 649

TRT#: 7

SEX: Male

DAY ON TEST: 726

DOSE: 1800 PPM

DISP: Terminal Sacrifice

HISTO: 44711

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lung
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Pancreas
* Parathyroid Gland	Peritoneum	Pleura	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Trachea	* Urinary Bladder		

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Kidney	Renal Tubule Papilla	Adenoma Mineralization Nephropathy	Mild Marked
[ Nephropathy TGLS = 5-7 ]			
* Liver		Clear Cell Focus Eosinophilic Focus	
* Nose	Goblet Cell	Foreign Body Hyperplasia Inflammation	Moderate Mild Suppurative, Minimal
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 2-10 ]			
* Testes	Bilateral, Interstit Cell	Adenoma	
[ Adenoma TGLS = 3,4-9+15 ]			
* Thyroid Gland	C Cell	Adenoma	
Zymbal's Gland		Carcinoma	
[ Carcinoma TGLS = 1-14 ]			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Methyl isobutyl ketone  
**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014  
**Time Report Requested:** 22:41:42  
**First Dose M/F:** NA / NA  
**Lab:** BNW

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**ANIMAL ID:** 649

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 726

**DOSE:** 1800 PPM

**DISP:** Terminal Sacrifice

**HISTO:** 44711

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 650

TRT#: 7

SEX: Male

DAY ON TEST: 652

DOSE: 1800 PPM

DISP: Moribund Sacrifice

HISTO: 44712

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Larynx	* Lymph Node, Mediastinal	* Mammary Gland
* Nose	* Pancreas	* Parathyroid Gland	Peritoneum
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Stomach, Forestomach	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Islets, Pancreatic [ Adenoma TGLS = 5-15 ]		Adenoma	
* Kidney	Renal Tubule Papilla	Hyperplasia Mineralization Nephropathy	Marked Minimal Moderate
* Liver [ Leukemia Mononuclear TGLS = 4-6 ] [ Regeneration TGLS = 8-6 ]	Hepatocyte	Leukemia Mononuclear Regeneration	Moderate
* Lung Lymph Node [ Leukemia Mononuclear TGLS = 5-15 ]	Pancreatic	Leukemia Mononuclear Leukemia Mononuclear	
* Lymph Node, Mesenteric [ Leukemia Mononuclear TGLS = 9-8 ]		Leukemia Mononuclear	
* Pituitary Gland [ Adenoma TGLS = 3-10 ]		Adenoma	
Pleura [ Inflammation TGLS = 2-14 ]		Inflammation	Chronic, Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01

**Test Type:** CHRONIC

**Route:** RESPIRATORY EXPOSURE WHOLE BODY

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Methyl isobutyl ketone

**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014

**Time Report Requested:** 22:41:42

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

**Lab:** BNW

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**ANIMAL ID:** 650

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 652

**DOSE:** 1800 PPM

**DISP:** Moribund Sacrifice

**HISTO:** 44712

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Spleen		Hemorrhage	Marked
		Leukemia Mononuclear	
	[ Hemorrhage TGLS = 7-16 ]		
	[ Leukemia Mononuclear TGLS = 6-15 ]		
* Stomach, Glandular		Erosion	Moderate
	[ Erosion TGLS = 10-10 ]		
* Testes	Interstit Cell	Adenoma	
	Interstit Cell	Hyperplasia	Moderate

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PRIMARY CAUSE OF DEATH

- Spleen Hemorrhage

CONTRIBUTORY CAUSE OF DEATH

- Spleen Leukemia Mononuclear

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 101

TRT#: 2

SEX: Female

DAY ON TEST: 650

DOSE: CONTROL

DISP: Moribund Sacrifice

HISTO: 44613

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Larynx	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Nose	* Ovary	* Pancreas
* Parathyroid Gland	Peritoneum	Pleura	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder
* Uterus			

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Clitoral Gland		Cyst	Mild
* Liver		Basophilic Focus	
		Hepatodiaphragmatic Nodule	Marked
[ Hepatodiaphragmatic Nodule TGLS = 3-6 ]			
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Minimal
* Mammary Gland		Fibroadenoma	
[ Fibroadenoma TGLS = 1-14+15 ]			
* Pituitary Gland		Hyperplasia	Marked
[ Hyperplasia TGLS = 2-10 ]			

PRIMARY CAUSE OF DEATH	- Mammary Gland Fibroadenoma
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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 102

TRT#: 2

SEX: Female

DAY ON TEST: 616

DOSE: CONTROL

DISP: Natural Death

HISTO: 44614

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Larynx	* Liver
* Lung	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Ovary	* Pancreas	* Parathyroid Gland	Peritoneum
* Salivary Glands	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder	* Uterus		

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Brain		Histiocytic Sarcoma	
[ Histiocytic Sarcoma TGLS = 6-1 ]			
Mesentery		Necrosis	Moderate
[ Necrosis TGLS = 5-14 ]			
* Nose	Respirat Epith	Degeneration	Hyaline, Minimal
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 4-10 ]			
Pleura		Fibrosis	Minimal
[ Fibrosis TGLS = 3-5 ]		Inflammation	Chronic, Minimal
[ Inflammation TGLS = 3-5 ]			

PRIMARY CAUSE OF DEATH - Brain Histiocytic Sarcoma

CONTRIBUTORY CAUSE OF DEATH - Pituitary Gland Adenoma

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 103

TRT#: 2

DOSE: CONTROL

SEX: Female

DISP: Terminal Sacrifice

DAY ON TEST: 729

HISTO: 44615

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Nose	* Ovary	* Pancreas
Peritoneum	* Pituitary Gland	Pleura	* Salivary Glands
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Parathyroid Gland
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OBSERVATIONS

* Kidney	Nephropathy	Minimal
* Liver	Hepatodiaphragmatic Nodule	Marked
[ Hepatodiaphragmatic Nodule TGLS = 5-6 ]		
* Lung	Alveolar/Bronchiolar Adenoma	
[ Alveolar/Bronchiolar Adenoma TGLS = 4-4 ]		
* Mammary Gland	Fibroadenoma	
[ Fibroadenoma TGLS = 1-14 ]		
* Skin	Hyperkeratosis	Moderate
[ Hyperkeratosis TGLS = 2-14 ]		
* Uterus	Polyp Stromal	
[ Polyp Stromal TGLS = 3-10 ]		

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 104

TRT#: 2

DOSE: CONTROL

SEX: Female

DISP: Terminal Sacrifice

DAY ON TEST: 728

HISTO: 44616

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Kidney	* Larynx	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Nose	* Ovary	* Pancreas	* Parathyroid Gland
Peritoneum	Pleura	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	* Uterus

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Cortex		Vacuolization Cytoplasmic	Mild
* Clitoral Gland		Carcinoma	
[ Carcinoma TGLS = 1-14 ]			
* Liver		Basophilic Focus	
		Clear Cell Focus	
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Minimal
* Mammary Gland		Fibroadenoma	
[ Fibroadenoma TGLS = 2-14 ]			
Mesentery		Necrosis	Moderate
[ Necrosis TGLS = 3-16 ]			
* Pituitary Gland		Hyperplasia	Marked

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 105

TRT#: 2

SEX: Female

DAY ON TEST: 523

DOSE: CONTROL

DISP: Moribund Sacrifice

HISTO: 44617

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Rectum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Kidney	* Larynx	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Nose	* Ovary	* Pancreas
* Parathyroid Gland	Peritoneum	* Pituitary Gland	Pleura
* Salivary Glands	* Skin	* Spleen	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Intestine Large, Colon	Foreign Body	Marked
* Intestine Small, Duodenum	Foreign Body	
[ Foreign Body TGLS = 4-14 ]		
* Liver	Hepatodiaphragmatic Nodule	Marked
[ Hepatodiaphragmatic Nodule TGLS = 1-6 ]		
* Lung	Alveolar Epith	Minimal
* Stomach, Forestomach	Hyperkeratosis	Mild
[ Hyperkeratosis TGLS = 3-10 ]		
* Uterus	Polyp Stromal	
[ Polyp Stromal TGLS = 6-10 ]		

PRIMARY CAUSE OF DEATH - Intestine Large, Colon Foreign Body

CONTRIBUTORY CAUSE OF DEATH - Intestine Small;Duodenum Foreign Body

Animal Note: FB in lumen of intestine appears to be a cast of mucous material and inflammatory cells.

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 106

TRT#: 2

SEX: Female

DAY ON TEST: 728

DOSE: CONTROL

DISP: Terminal Sacrifice

HISTO: 44618

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Lung	* Lymph Node, Bronchial
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Nose	* Pancreas
Peripheral Nerve	Peritoneum	Pleura	* Salivary Glands
Skeletal Muscle	* Skin	Spinal Cord	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

**MISSING**

* Lymph Node, Mandibular	* Parathyroid Gland
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**OBSERVATIONS**

* Kidney	Nephropathy	Minimal
* Larynx	Foreign Body	Marked
* Liver	Basophilic Focus	
* Mammary Gland	Fibroadenoma	Multiple
[ Fibroadenoma TGLS = 1,2-14+15 ]		
* Ovary	Cyst	Marked
[ Cyst TGLS = 4-9 ]		
* Pituitary Gland	Adenoma	
[ Adenoma TGLS = 3-10 ]		
* Uterus	Polyp Stromal	
[ Polyp Stromal TGLS = 5-10 ]		

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 107

TRT#: 2

SEX: Female

DAY ON TEST: 728

DOSE: CONTROL

DISP: Terminal Sacrifice

HISTO: 44619

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Larynx
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Ovary	* Pancreas	* Parathyroid Gland	Peritoneum
Pleura	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Trachea
* Urinary Bladder			

**MISSING**

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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**OBSERVATIONS**

* Liver		Eosinophilic Focus	
* Lung	Bronchiole	Hyperplasia	Moderate
* Pituitary Gland		Hyperplasia	Marked
[ Hyperplasia TGLS = 1-10 ]			
* Thyroid Gland	C Cell	Hyperplasia	Marked
* Uterus		Polyp Stromal	
[ Polyp Stromal TGLS = 2-10 ]			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 108

TRT#: 2

SEX: Female

DAY ON TEST: 716

DOSE: CONTROL

DISP: Moribund Sacrifice

HISTO: 44620

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Nose	* Ovary	* Pancreas	* Parathyroid Gland
Peripheral Nerve	Peritoneum	* Salivary Glands	Skeletal Muscle
* Skin	Spinal Cord	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder
* Uterus			

MISSING

\* Lymph Node, Mandibular

OBSERVATIONS

* Brain		Compression	Moderate
* Kidney	Papilla	Mineralization	Minimal
		Nephropathy	Minimal
* Liver		Basophilic Focus	
		Vacuolization Cytoplasmic	Moderate
		[ Vacuolization Cytoplasmic TGLS = 5-15 ]	
* Lung	Interstitialium	Fibrosis	Minimal
	Alveolus	Infiltration Cellular	Histiocyte, Mild
* Lymph Node, Bronchial		Ectasia	Mild
		[ Ectasia TGLS = 1-16 ]	
* Mammary Gland		Fibroadenoma	
		[ Fibroadenoma TGLS = 3-16 ]	
Mesentery		Necrosis	Moderate
		[ Necrosis TGLS = 4-17 ]	
* Pituitary Gland		Adenoma	
		[ Adenoma TGLS = 2-10 ]	
Pleura		Fibrosis	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Methyl isobutyl ketone  
**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014  
**Time Report Requested:** 22:41:42  
**First Dose M/F:** NA / NA  
**Lab:** BNW

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**ANIMAL ID:** 108

**TRT#:** 2  
**DOSE:** CONTROL

**SEX:** Female  
**DISP:** Moribund Sacrifice

**DAY ON TEST:** 716  
**HISTO:** 44620

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**ORGAN AND ACCOUNTABLE SITE STATUS**

\* Spleen

Inflammation  
Leukemia Mononuclear

Chronic, Mild

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PRIMARY CAUSE OF DEATH

- Pituitary Gland Adenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 109

TRT#: 2

DOSE: CONTROL

SEX: Female

DISP: Terminal Sacrifice

DAY ON TEST: 728

HISTO: 44621

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Kidney	* Larynx	* Lymph Node, Mesenteric	* Mammary Gland
* Nose	* Pancreas	Peritoneum	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Parathyroid Gland
* Thymus			

OBSERVATIONS

* Adrenal Cortex		Vacuolization Cytoplasmic	Mild
* Clitoral Gland		Cyst	Moderate
		Hyperplasia	Moderate
[ Cyst TGLS = 6-14 ]			
[ Hyperplasia TGLS = 1,6-14 ]			
* Liver		Basophilic Focus	
		Clear Cell Focus	
		Hepatodiaphragmatic Nodule	Marked
[ Hepatodiaphragmatic Nodule TGLS = 5-14 ]			
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Minimal
* Ovary		Cyst	Marked
[ Cyst TGLS = 3-9 ]			
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 2-10 ]			
Pleura		Fibrosis	Minimal
		Inflammation	Chronic, Minimal
* Uterus		Necrosis	Marked
		Polyp Stromal	

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 97006-01  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Methyl isobutyl ketone  
**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014  
**Time Report Requested:** 22:41:42  
**First Dose M/F:** NA / NA  
**Lab:** BNW

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**ANIMAL ID:** 109

**TRT#:** 2

**SEX:** Female

**DAY ON TEST:** 728

**DOSE:** CONTROL

**DISP:** Terminal Sacrifice

**HISTO:** 44621

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Note: infarcted polyp in lumen  
[ Polyp Stromal TGLS = 4-10 ]

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PRIMARY CAUSE OF DEATH

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 110

TRT#: 2

SEX: Female

DAY ON TEST: 728

DOSE: CONTROL

DISP: Terminal Sacrifice

HISTO: 44622

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lung
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Ovary	* Pancreas	* Parathyroid Gland	Peripheral Nerve
Peritoneum	Pleura	* Salivary Glands	Skeletal Muscle
* Skin	Spinal Cord	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder	* Uterus		

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Brain		
Note: small remnant of pituitary tumor on base of brain in slide 1.		
* Kidney	Nephropathy	Minimal
* Liver	Basophilic Focus	
Mesentery	Necrosis	Moderate
[ Necrosis TGLS = 3-14 ]		
* Pituitary Gland	Adenoma	
[ Adenoma TGLS = 1-10 ]		

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 111

TRT#: 2

DOSE: CONTROL

SEX: Female

DISP: Moribund Sacrifice

DAY ON TEST: 583

HISTO: 44623

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Mammary Gland	* Nose
* Ovary	* Pancreas	* Parathyroid Gland	Peritoneum
Pleura	* Salivary Glands	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

\* Lymph Node, Mandibular

OBSERVATIONS

* Brain	Leukemia Mononuclear	
* Kidney	Leukemia Mononuclear	
* Liver	Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 8-6 ]		
* Lung	Leukemia Mononuclear	
* Lymph Node, Bronchial	Leukemia Mononuclear	
* Lymph Node, Mediastinal	Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-3 ]		
* Lymph Node, Mesenteric	Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 6-15 ]		
* Pituitary Gland	Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 2-10 ]		
* Spleen	Hemorrhage	Marked
[ Hemorrhage TGLS = 4-14 ]	Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 3-14 ]		
* Uterus	Leukemia Mononuclear	
	Polyp Stromal	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Methyl isobutyl ketone  
**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014  
**Time Report Requested:** 22:41:42  
**First Dose M/F:** NA / NA  
**Lab:** BNW

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**ANIMAL ID:** 111

**TRT#:** 2  
**DOSE:** CONTROL

**SEX:** Female  
**DISP:** Moribund Sacrifice

**DAY ON TEST:** 583  
**HISTO:** 44623

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**ORGAN AND ACCOUNTABLE SITE STATUS**

[ Leukemia Mononuclear TGLS = 5-10 ]

[ Polyp Stromal TGLS = 5-10 ]

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PRIMARY CAUSE OF DEATH	- Spleen	Leukemia Mononuclear
CONTRIBUTORY CAUSE OF DEATH	- Spleen	Hemorrhage

---

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 112

TRT#: 2

SEX: Female

DAY ON TEST: 729

DOSE: CONTROL

DISP: Terminal Sacrifice

HISTO: 44624

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Larynx
* Lung	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Nose
* Ovary	* Pancreas	* Parathyroid Gland	Peritoneum
Pleura	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Trachea
* Urinary Bladder			

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Liver		Basophilic Focus	
		Clear Cell Focus	
* Mammary Gland		Fibroadenoma	Multiple
[ Fibroadenoma TGLS = 1,2-14+15 ]			
Mesentery		Necrosis	Moderate
[ Necrosis TGLS = 4-16 ]			
* Pituitary Gland		Hyperplasia	Moderate
[ Hyperplasia TGLS = 3-10 ]			
* Thyroid Gland	Follicular Cel	Adenoma	
* Uterus		Decidual Reaction	Moderate

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 113

TRT#: 2

SEX: Female

DAY ON TEST: 696

DOSE: CONTROL

DISP: Moribund Sacrifice

HISTO: 44625

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lung	* Lymph Node, Mesenteric
* Mammary Gland	* Nose	* Ovary	* Pancreas
* Parathyroid Gland	Peritoneum	Pleura	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thyroid Gland	* Trachea	* Urinary Bladder	* Uterus

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Thymus
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OBSERVATIONS

* Brain		Compression	Moderate
* Kidney	Pelvis, Transit Epithe	Mineralization	Minimal
		Nephropathy	Minimal
* Liver		Basophilic Focus	
* Pituitary Gland		Adenoma	

[ Adenoma TGLS = 1-10 ]

PRIMARY CAUSE OF DEATH

- Pituitary Gland Adenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 114

TRT#: 2

SEX: Female

DAY ON TEST: 728

DOSE: CONTROL

DISP: Terminal Sacrifice

HISTO: 44626

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                           |                             |                           |
|----------------------------|---------------------------|-----------------------------|---------------------------|
| * Adrenal Cortex           | * Adrenal Medulla         | Blood Vessel                | * Bone                    |
| * Bone Marrow              | * Brain                   | * Clitoral Gland            | * Esophagus               |
| * Eye                      | * Harderian Gland         | * Heart                     | * Intestine Large, Cecum  |
| * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum  |
| * Intestine Small, Jejunum | * Islets, Pancreatic      | * Lung                      | * Lymph Node, Mediastinal |
| * Lymph Node, Mesenteric   | * Ovary                   | * Pancreas                  | * Parathyroid Gland       |
| Pleura                     | * Salivary Glands         | * Skin                      | * Stomach, Forestomach    |
| * Stomach, Glandular       | * Thymus                  | * Thyroid Gland             | * Trachea                 |
| * Urinary Bladder          | * Uterus                  |                             |                           |

MISSING

- |                         |                          |
|-------------------------|--------------------------|
| * Lymph Node, Bronchial | * Lymph Node, Mandibular |
|-------------------------|--------------------------|

OBSERVATIONS

- |                                   |                |                      |                  |
|-----------------------------------|----------------|----------------------|------------------|
| * Kidney                          | Papilla        | Mineralization       | Minimal          |
|                                   |                | Nephropathy          | Mild             |
| * Larynx                          |                | Inflammation         | Chronic, Minimal |
| * Liver                           |                | Basophilic Focus     |                  |
| * Mammary Gland                   |                | Carcinoma            |                  |
|                                   |                | Fibroadenoma         | Multiple         |
| [ Carcinoma TGLS = 2-15 ]         |                |                      |                  |
| [ Fibroadenoma TGLS = 1,3-14+16 ] |                |                      |                  |
| * Nose                            | Respirat Epith | Degeneration         | Hyaline, Mild    |
| * Pituitary Gland                 |                | Adenoma              |                  |
| [ Adenoma TGLS = 4-10 ]           |                |                      |                  |
| * Spleen                          |                | Leukemia Mononuclear |                  |

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 115

TRT#: 2

DOSE: CONTROL

SEX: Female

DISP: Moribund Sacrifice

DAY ON TEST: 707

HISTO: 44627

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Clitoral Gland
* Esophagus	* Eye	* Harderian Gland	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Mammary Gland	* Nose
* Ovary	* Pancreas	* Parathyroid Gland	Peritoneum
Pleura	* Salivary Glands	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thyroid Gland	* Trachea	* Urinary Bladder
* Uterus			

MISSING

\* Lymph Node, Mandibular

AUTO PRECLUDES DIAG.

\* Intestine Small, Ileum

OBSERVATIONS

* Adrenal Medulla		Pheochromocytoma Benign	
* Bone Marrow		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 13-14 ]			
* Brain		Compression	Marked
		Hemorrhage	Minimal
* Heart		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-6 ]			
* Kidney	Renal Tubule	Hyperplasia	Mild
		Leukemia Mononuclear	
		Nephropathy	Marked
[ Leukemia Mononuclear TGLS = 7-7 ]			
[ Nephropathy TGLS = 7-7 ]			
* Liver		Eosinophilic Focus	
		Leukemia Mononuclear	
	Hepatocyte	Regeneration	Marked
[ Leukemia Mononuclear TGLS = 8-6 ]			
[ Regeneration TGLS = 9,10-6+15 ]			

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 115

TRT#: 2

SEX: Female

DAY ON TEST: 707

DOSE: CONTROL

DISP: Moribund Sacrifice

HISTO: 44627

**ORGAN AND ACCOUNTABLE SITE STATUS**

* Lung	Leukemia Mononuclear	
* Lymph Node, Bronchial	Leukemia Mononuclear	
* Lymph Node, Mediastinal	Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 2-3+4 ]		
* Lymph Node, Mesenteric	Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 12-8 ]		
Mesentery	Necrosis	Moderate
[ Necrosis TGLS = 11-17 ]		
* Pituitary Gland	Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 4-10 ]		
* Spleen	Leukemia Mononuclear	
	Necrosis	Marked
[ Leukemia Mononuclear TGLS = 5-16 ]		
[ Necrosis TGLS = 6-16 ]		
* Thymus	Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 3-3+4 ]		

PRIMARY CAUSE OF DEATH - Pituitary Gland Leukemia Mononuclear

CONTRIBUTORY CAUSE OF DEATH - Spleen Leukemia Mononuclear

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 116

TRT#: 2

SEX: Female

DAY ON TEST: 729

DOSE: CONTROL

DISP: Terminal Sacrifice

HISTO: 44628

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Nose	* Ovary	* Pancreas
* Parathyroid Gland	Peritoneum	Pleura	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder
* Uterus			

**MISSING**

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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**OBSERVATIONS**

* Brain		Compression	Mild
* Kidney		Nephropathy	Minimal
* Liver		Basophilic Focus	
		Clear Cell Focus	
* Lung	Alveolar Epith	Hyperplasia	Minimal
	Alveolus	Infiltration Cellular	Histiocyte, Minimal
	[ Infiltration Cellular TGLS = 2-14 ]		
* Pituitary Gland		Adenoma	
	[ Adenoma TGLS = 1-10 ]		

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 117

TRT#: 2

SEX: Female

DAY ON TEST: 727

DOSE: CONTROL

DISP: Terminal Sacrifice

HISTO: 44629

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lung
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Ovary
* Pancreas	* Parathyroid Gland	Peritoneum	Pleura
* Salivary Glands	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder
* Uterus			

**MISSING**

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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**OBSERVATIONS**

* Kidney		Nephropathy	Minimal
* Liver		Basophilic Focus	
* Nose	Respirat Epith	Degeneration	Hyaline, Minimal
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 1-10 ]			
* Spleen		Leukemia Mononuclear	

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 118

TRT#: 2

SEX: Female

DAY ON TEST: 727

DOSE: CONTROL

DISP: Terminal Sacrifice

HISTO: 44630

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	Ear
* Esophagus	* Eye	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney
* Larynx	* Lung	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	Peritoneum	Pleura
* Salivary Glands	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
-------------------------	--------------------------

OBSERVATIONS

* Liver		Basophilic Focus	
		Clear Cell Focus	
		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 4-6 ]			
* Mammary Gland		Fibroadenoma	
[ Fibroadenoma TGLS = 1-15 ]			
* Nose	Respirat Epith	Degeneration	Hyaline, Mild
* Ovary		Cyst	Moderate
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 2-10 ]			
* Spleen		Leukemia Mononuclear	
* Uterus		Sarcoma Stromal	
[ Sarcoma Stromal TGLS = 3-14 ]			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 119

TRT#: 2

SEX: Female

DAY ON TEST: 729

DOSE: CONTROL

DISP: Terminal Sacrifice

HISTO: 44631

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                           |                             |                           |
|----------------------------|---------------------------|-----------------------------|---------------------------|
| * Adrenal Cortex           | * Adrenal Medulla         | Blood Vessel                | * Bone                    |
| * Bone Marrow              | * Brain                   | * Clitoral Gland            | * Esophagus               |
| * Eye                      | * Harderian Gland         | * Heart                     | * Intestine Large, Cecum  |
| * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum  |
| * Intestine Small, Jejunum | * Islets, Pancreatic      | * Larynx                    | * Lymph Node, Mediastinal |
| * Lymph Node, Mesenteric   | * Mammary Gland           | * Nose                      | * Ovary                   |
| * Pancreas                 | * Parathyroid Gland       | Peritoneum                  | * Salivary Glands         |
| * Skin                     | * Spleen                  | * Stomach, Forestomach      | * Stomach, Glandular      |
| * Thymus                   | * Thyroid Gland           | * Trachea                   | * Urinary Bladder         |
| * Uterus                   |                           |                             |                           |

MISSING

- |                         |                          |
|-------------------------|--------------------------|
| * Lymph Node, Bronchial | * Lymph Node, Mandibular |
|-------------------------|--------------------------|

OBSERVATIONS

- |   |          |                            |                     |
|---|----------|----------------------------|---------------------|
| * Brain   |          |                            |                     |
| Note: step sections of tgl 2 and slide 1 brain sections, no corresponding lesion found. |          |                            |                     |
| * Kidney  |          | Nephropathy                | Minimal             |
| * Liver   |          | Basophilic Focus           |                     |
|   |          | Hepatodiaphragmatic Nodule | Marked              |
| [ Hepatodiaphragmatic Nodule TGLS = 1-6 ]   |          |                            |                     |
| * Lung  | Alveolus | Infiltration Cellular      | Histiocyte, Minimal |
| * Pituitary Gland   |          | Cyst                       | Minimal             |
|   |          | Hyperplasia                | Mild                |
| [ Cyst TGLS = 3-10 ]  |          |                            |                     |
| [ Hyperplasia TGLS = 3-10 ]   |          |                            |                     |
| Pleura  |          | Fibrosis                   | Minimal             |
|   |          | Inflammation               | Chronic, Minimal    |

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 120

TRT#: 2

SEX: Female

DAY ON TEST: 729

DOSE: CONTROL

DISP: Terminal Sacrifice

HISTO: 44632

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Larynx
* Lung	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Nose	* Ovary	* Pancreas	* Parathyroid Gland
Peritoneum	* Pituitary Gland	Pleura	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder
* Uterus			

**MISSING**

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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**OBSERVATIONS**

* Liver	Basophilic Focus
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PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 121

TRT#: 2

SEX: Female

DAY ON TEST: 727

DOSE: CONTROL

DISP: Terminal Sacrifice

HISTO: 44633

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Nose	* Ovary
* Pancreas	* Parathyroid Gland	Peritoneum	* Salivary Glands
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Trachea	* Urinary Bladder	* Uterus	

**MISSING**

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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**OBSERVATIONS**

* Kidney		Nephropathy	Minimal
* Liver		Basophilic Focus	
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Mild
[ Infiltration Cellular TGLS = 2-5 ]			
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 1-10 ]			
Pleura		Fibrosis	Minimal
		Inflammation	Chronic, Mild
* Spleen		Leukemia Mononuclear	
* Thyroid Gland	C Cell	Adenoma	

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 122

TRT#: 2

SEX: Female

DAY ON TEST: 728

DOSE: CONTROL

DISP: Terminal Sacrifice

HISTO: 44634

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Larynx
* Lung	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Nose
* Ovary	* Pancreas	* Parathyroid Gland	Peripheral Nerve
Peritoneum	* Pituitary Gland	Pleura	* Salivary Glands
Skeletal Muscle	* Skin	Spinal Cord	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Liver	Basophilic Focus	
	Eosinophilic Focus	
	Fibroadenoma	
* Mammary Gland		
[ Fibroadenoma TGLS = 1-15 ]		
Mesentery	Necrosis	Moderate
[ Necrosis TGLS = 4-15 ]		
* Uterus	Necrosis	Marked
	Polyp Stromal	
Note: infarcted stromal polyp in uterus slide 10.		
[ Necrosis TGLS = 3-10 ]		
[ Polyp Stromal TGLS = 3-10 ]		
Vagina	Sarcoma	
Note: diff dx leiomyoma.		
[ Sarcoma TGLS = 2-14 ]		

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 123

TRT#: 2

SEX: Female

DAY ON TEST: 454

DOSE: CONTROL

DISP: Moribund Sacrifice

HISTO: 44635

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Larynx
* Lung	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Nose	* Ovary	* Parathyroid Gland	Peritoneum
Pleura	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Liver		Hepatodiaphragmatic Nodule	Marked
[ Hepatodiaphragmatic Nodule TGLS = 6-6 ]			
* Pancreas	Acinus	Atrophy	Moderate
* Pituitary Gland		Cyst	Marked
		Hyperplasia	Moderate
[ Cyst TGLS = 2-10 ]			
[ Hyperplasia TGLS = 2-10 ]			
* Uterus	Endometrium	Histiocytic Sarcoma	
		Inflammation	Suppurative, Moderate
[ Histiocytic Sarcoma TGLS = 4,5-15+16 ]			
Vagina		Histiocytic Sarcoma	
[ Histiocytic Sarcoma TGLS = 3-14 ]			

PRIMARY CAUSE OF DEATH

- Uterus Histiocytic Sarcoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 124

TRT#: 2

SEX: Female

DAY ON TEST: 729

DOSE: CONTROL

DISP: Terminal Sacrifice

HISTO: 44636

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Larynx	* Liver
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Ovary	* Pancreas	* Parathyroid Gland	Peritoneum
Pleura	* Salivary Glands	* Skin	* Spleen
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder	* Uterus		

**MISSING**

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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**OBSERVATIONS**

* Brain		Compression	Marked
		Hemorrhage	Marked
* Lung	Alveolar Epith	Hyperplasia	Mild
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 1-10 ]			
* Stomach, Forestomach		Ulcer	Marked
[ Ulcer TGLS = 2-10 ]			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 125

TRT#: 2

SEX: Female

DAY ON TEST: 729

DOSE: CONTROL

DISP: Terminal Sacrifice

HISTO: 44637

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Larynx	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Ovary	* Pancreas	* Parathyroid Gland
Peritoneum	* Salivary Glands	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder	* Uterus		

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Cortex		Vacuolization Cytoplasmic	Moderate
* Liver		Basophilic Focus	
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Mild
* Mammary Gland		Fibroadenoma	Multiple
[ Fibroadenoma TGLS = 1,2,3-15+16+17 ]			
* Nose	Nasolacrim Dct	Inflammation	Suppurative, Mild
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 4-10 ]			
Pleura		Fibrosis	Mild
		Inflammation	Chronic, Mild
[ Fibrosis TGLS = 5-14 ]			
* Spleen		Leukemia Mononuclear	

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 126

TRT#: 2

SEX: Female

DAY ON TEST: 685

DOSE: CONTROL

DISP: Moribund Sacrifice

HISTO: 44638

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Larynx	* Lung	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Nose	* Ovary	* Pancreas	* Parathyroid Gland
Peritoneum	Pleura	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	* Uterus

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Brain	Compression	Moderate
	Hemorrhage	Marked
* Islets, Pancreatic	Hyperplasia	Moderate
* Kidney	Nephropathy	Minimal
* Liver	Basophilic Focus	
	Vacuolization Cytoplasmic	Mild
[ Vacuolization Cytoplasmic TGLS = 3,4-6 ]		
* Mammary Gland	Fibroadenoma	
[ Fibroadenoma TGLS = 1-14 ]		
* Pituitary Gland	Adenoma	
[ Adenoma TGLS = 2-10 ]		

PRIMARY CAUSE OF DEATH - Pituitary Gland Adenoma

CONTRIBUTORY CAUSE OF DEATH - Brain Hemorrhage

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 127

TRT#: 2

SEX: Female

DAY ON TEST: 576

DOSE: CONTROL

DISP: Moribund Sacrifice

HISTO: 44639

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                           |                             |                          |
|--------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex         | * Adrenal Medulla         | Blood Vessel                | * Bone                   |
| * Bone Marrow            | * Brain                   | * Clitoral Gland            | * Esophagus              |
| * Eye                    | * Harderian Gland         | * Heart                     | * Intestine Large, Cecum |
| * Intestine Large, Colon | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Islets, Pancreatic     | * Kidney                  | * Larynx                    | * Liver                  |
| * Lung                   | * Lymph Node, Mediastinal | * Lymph Node, Mesenteric    | * Mammary Gland          |
| * Nose                   | * Ovary                   | * Pancreas                  | * Parathyroid Gland      |
| Peritoneum               | * Pituitary Gland         | Pleura                      | * Salivary Glands        |
| * Skin                   | * Spleen                  | * Stomach, Forestomach      | * Stomach, Glandular     |
| * Thymus                 | * Thyroid Gland           | * Trachea                   | * Urinary Bladder        |
| * Uterus                 |                           |                             |                          |

MISSING

- |                         |                          |
|-------------------------|--------------------------|
| * Lymph Node, Bronchial | * Lymph Node, Mandibular |
|-------------------------|--------------------------|

OBSERVATIONS

- |                            |          |        |
|----------------------------|----------|--------|
| * Intestine Small, Jejunum | Necrosis | Marked |
| Note: intussusception      |          |        |
| [ Necrosis TGLS = 1-14 ]   |          |        |

PRIMARY CAUSE OF DEATH

- Intestine Small, Jejunum Necrosis

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 128

TRT#: 2

SEX: Female

DAY ON TEST: 727

DOSE: CONTROL

DISP: Terminal Sacrifice

HISTO: 44640

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lung	* Lymph Node, Mesenteric
* Nose	* Pancreas	* Parathyroid Gland	Peritoneum
Pleura	* Salivary Glands	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder	* Uterus		

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
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OBSERVATIONS

* Adrenal Cortex	Vacuolization Cytoplasmic	Moderate
* Kidney	Nephropathy	Minimal
* Liver	Basophilic Focus	
	Clear Cell Focus	
* Mammary Gland	Fibroadenoma	
[ Fibroadenoma TGLS = 1-14 ]		
Mesentery	Necrosis	Moderate
[ Necrosis TGLS = 3-14 ]		
* Ovary	Cyst	Moderate
[ Cyst TGLS = 2-9 ]		
* Pituitary Gland	Hyperplasia	Mild
* Spleen	Leukemia Mononuclear	

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 129

TRT#: 2

SEX: Female

DAY ON TEST: 729

DOSE: CONTROL

DISP: Terminal Sacrifice

HISTO: 44641

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Larynx
* Lung	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Ovary	* Pancreas	* Parathyroid Gland	Peritoneum
Pleura	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Trachea
* Urinary Bladder			

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Liver		Basophilic Focus	
		Clear Cell Focus	
* Nose	Respirat Epith	Degeneration	Hyaline, Minimal
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 1-10 ]			
* Thyroid Gland	C Cell	Hyperplasia	Moderate
* Uterus		Polyp Stromal	
[ Polyp Stromal TGLS = 3-10 ]			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 130

TRT#: 2

SEX: Female

DAY ON TEST: 729

DOSE: CONTROL

DISP: Terminal Sacrifice

HISTO: 44642

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Larynx
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Nose	* Ovary
* Pancreas	* Parathyroid Gland	Peripheral Nerve	Peritoneum
* Salivary Glands	Skeletal Muscle	* Skin	Spinal Cord
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	* Uterus

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Liver		Basophilic Focus	
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Minimal
* Mammary Gland		Fibroadenoma	
[ Fibroadenoma TGLS = 1-15 ]			
Mesentery		Necrosis	Moderate
[ Necrosis TGLS = 4-16 ]			
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 2-10 ]			
Pleura		Fibrosis	Minimal

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 131

TRT#: 2

SEX: Female

DAY ON TEST: 728

DOSE: CONTROL

DISP: Terminal Sacrifice

HISTO: 44643

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Larynx
* Lung	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Nose
* Ovary	* Pancreas	* Parathyroid Gland	Peripheral Nerve
Peritoneum	Pleura	* Salivary Glands	Skeletal Muscle
* Skin	Spinal Cord	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder	* Uterus		

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Liver		Basophilic Focus	
* Mammary Gland		Fibroadenoma	
[ Fibroadenoma TGLS = 3-14 ]			
* Pituitary Gland		Hyperplasia	Moderate
[ Hyperplasia TGLS = 2-10 ]			
Tongue	Epithelium	Hyperplasia	Marked
[ Hyperplasia TGLS = 1-15 ]			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 132

TRT#: 2

SEX: Female

DAY ON TEST: 727

DOSE: CONTROL

DISP: Terminal Sacrifice

HISTO: 44644

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Larynx
* Lung	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Ovary
* Pancreas	* Parathyroid Gland	Peritoneum	* Pituitary Gland
Pleura	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

**MISSING**

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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**OBSERVATIONS**

* Liver		Basophilic Focus	
* Mammary Gland		Fibroadenoma	
[ Fibroadenoma TGLS = 1-14+15 ]			
Mesentery		Necrosis	Moderate
[ Necrosis TGLS = 2-3 ]			
* Nose	Nasolacrim Dct	Inflammation	Suppurative, Minimal
* Uterus		Polyp Stromal	

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 133

TRT#: 2

SEX: Female

DAY ON TEST: 728

DOSE: CONTROL

DISP: Terminal Sacrifice

HISTO: 44645

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Larynx
* Lung	* Lymph Node, Mesenteric	* Ovary	* Pancreas
* Parathyroid Gland	Peripheral Nerve	Peritoneum	* Pituitary Gland
Pleura	* Salivary Glands	Skeletal Muscle	* Skin
Spinal Cord	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thyroid Gland	* Trachea	* Urinary Bladder	* Uterus

**MISSING**

* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Thymus
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**OBSERVATIONS**

* Liver		Basophilic Focus	
* Mammary Gland		Fibroadenoma	
[ Fibroadenoma TGLS = 1-14+15 ]			
Mesentery		Necrosis	Moderate
[ Necrosis TGLS = 2-16 ]			
* Nose	Respirat Epith	Degeneration	Hyaline, Minimal

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 134

TRT#: 2

SEX: Female

DAY ON TEST: 728

DOSE: CONTROL

DISP: Terminal Sacrifice

HISTO: 44646

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lung
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland
Peritoneum	* Pituitary Gland	Pleura	* Salivary Glands
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Trachea	* Urinary Bladder	* Uterus	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular		
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OBSERVATIONS

* Kidney	Pelvis, Transit Epithe	Mineralization	Minimal
* Liver		Basophilic Focus	
		Clear Cell Focus	
		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 4-6 ]			
* Mammary Gland		Fibroadenoma	Multiple
[ Fibroadenoma TGLS = 1,2-14+15 ]			
* Nose	Respirat Epith	Degeneration	Hyaline, Minimal
* Ovary		Cyst	Moderate
[ Cyst TGLS = 3-9 ]			
* Spleen		Leukemia Mononuclear	
* Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 135

TRT#: 2

SEX: Female

DAY ON TEST: 606

DOSE: CONTROL

DISP: Moribund Sacrifice

HISTO: 44647

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Clitoral Gland	* Esophagus	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Nose
* Pancreas	* Parathyroid Gland	Peritoneum	* Salivary Glands
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	* Uterus

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Brain		Compression	Marked
		Hemorrhage	Marked
* Eye	Lens	Cataract	Moderate
[ Cataract TGLS = 1-13 ]			
* Kidney	Pelvis, Transit Epithe	Mineralization	Minimal
* Liver		Basophilic Focus	
		Leukemia Mononuclear	
* Lung	Alveolus	Emphysema	Moderate
[ Emphysema TGLS = 4-4+5 ]		Inflammation	Chronic, Minimal
* Mammary Gland		Carcinoma	
[ Carcinoma TGLS = 3-14 ]			
* Ovary		Cyst	Moderate
[ Cyst TGLS = 5-9 ]			
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 2-10 ]			
Pleura		Fibrosis	Minimal
		Inflammation	Chronic, Mild
* Spleen		Leukemia Mononuclear	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Methyl isobutyl ketone  
**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014  
**Time Report Requested:** 22:41:42  
**First Dose M/F:** NA / NA  
**Lab:** BNW

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**ANIMAL ID:** 135

**TRT#:** 2

**SEX:** Female

**DAY ON TEST:** 606

**DOSE:** CONTROL

**DISP:** Moribund Sacrifice

**HISTO:** 44647

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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PRIMARY CAUSE OF DEATH

- Pituitary Gland Adenoma

CONTRIBUTORY CAUSE OF DEATH

- Brain Hemorrhage

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 136

TRT#: 2

SEX: Female

DAY ON TEST: 728

DOSE: CONTROL

DISP: Terminal Sacrifice

HISTO: 44648

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Mammary Gland
* Nose	* Ovary	* Pancreas	* Parathyroid Gland
Peritoneum	Pleura	* Salivary Glands	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder	* Uterus	

MISSING

\* Lymph Node, Mandibular

OBSERVATIONS

* Kidney	Pelvis, Transit Epithe	Mineralization	Minimal
* Liver		Leukemia Mononuclear	
* Lung		Leukemia Mononuclear	
* Lymph Node, Bronchial		Leukemia Mononuclear	
* Lymph Node, Mediastinal		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-3 ]			
* Lymph Node, Mesenteric		Leukemia Mononuclear	
* Pituitary Gland		Hyperplasia	Moderate
		Leukemia Mononuclear	
[ Hyperplasia TGLS = 3-10 ]			
* Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 2-14 ]			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 137

TRT#: 2

SEX: Female

DAY ON TEST: 728

DOSE: CONTROL

DISP: Terminal Sacrifice

HISTO: 44649

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lung	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Ovary	* Pancreas	* Parathyroid Gland
Peritoneum	Pleura	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Trachea	* Urinary Bladder	* Uterus	

**MISSING**

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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**OBSERVATIONS**

* Heart		Cardiomyopathy	Mild
* Kidney		Nephropathy	Moderate
[ Nephropathy TGLS = 5-7 ]			
* Liver		Basophilic Focus	
		Clear Cell Focus	
		Hepatodiaphragmatic Nodule	Marked
		Mixed Cell Focus	
[ Hepatodiaphragmatic Nodule TGLS = 3-7 ]			
[ Mixed Cell Focus TGLS = 4-14 ]			
* Mammary Gland		Carcinoma	
[ Carcinoma TGLS = 1-15 ]			
* Nose	Nasolacrim Dct	Inflammation	Suppurative, Moderate
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 2-10 ]			
* Thyroid Gland	C Cell	Adenoma	

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 138

TRT#: 2

DOSE: CONTROL

SEX: Female

DISP: Terminal Sacrifice

DAY ON TEST: 727

HISTO: 44650

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Liver
* Lung	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Nose	* Pancreas	* Parathyroid Gland	Peritoneum
Pleura	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Kidney	Pelvis, Transit Epithe	Mineralization	Mild
		Nephropathy	Minimal
		Necrosis	Moderate
Mesentery			
[ Necrosis TGLS = 4-14 ]			
* Ovary		Cyst	Multiple, Moderate
[ Cyst TGLS = 2-9 ]			
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 1-10 ]			
* Uterus		Cyst	Marked
	Endometrium	Hyperplasia	Minimal
[ Cyst TGLS = 3-10 ]			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 139

TRT#: 2

SEX: Female

DAY ON TEST: 709

DOSE: CONTROL

DISP: Moribund Sacrifice

HISTO: 44651

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Blood Vessel	* Bone	* Bone Marrow	* Brain
* Clitoral Gland	* Esophagus	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Nose	* Ovary
* Pancreas	* Parathyroid Gland	Peritoneum	* Salivary Glands
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	* Uterus

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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INSUFFICIENT TISSUE

\* Eye

OBSERVATIONS

* Adrenal Cortex		Vacuolization Cytoplasmic	Minimal
* Adrenal Medulla		Pheochromocytoma Benign	
	[ Pheochromocytoma Benign TGLS = 5-7 ]		
* Kidney	Pelvis, Transit Epithe	Mineralization	Minimal
* Liver		Basophilic Focus	
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic, Minimal
* Mammary Gland		Fibroadenoma	
	[ Fibroadenoma TGLS = 2-14+15 ]		
Mesentery		Necrosis	Moderate
	[ Necrosis TGLS = 4-17 ]		
* Pituitary Gland		Adenoma	
	[ Adenoma TGLS = 3-10 ]		
Pleura		Fibrosis	Minimal
	Mesothelium	Hyperplasia	Minimal
* Skin		Ulcer	Moderate
	[ Ulcer TGLS = 1-16 ]		

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Methyl isobutyl ketone  
**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014  
**Time Report Requested:** 22:41:42  
**First Dose M/F:** NA / NA  
**Lab:** BNW

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**ANIMAL ID:** 139

**TRT#:** 2

**SEX:** Female

**DAY ON TEST:** 709

**DOSE:** CONTROL

**DISP:** Moribund Sacrifice

**HISTO:** 44651

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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PRIMARY CAUSE OF DEATH

- Mammary Gland Fibroadenoma

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 140

TRT#: 2

SEX: Female

DAY ON TEST: 728

DOSE: CONTROL

DISP: Terminal Sacrifice

HISTO: 44652

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Larynx	* Lung
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Ovary	* Pancreas
* Parathyroid Gland	Peritoneum	Pleura	* Salivary Glands
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	* Uterus

**MISSING**

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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**OBSERVATIONS**

* Adrenal Cortex		Vacuolization Cytoplasmic	Moderate
* Liver		Leukemia Mononuclear	
* Mammary Gland		Fibroadenoma	
		Galactocele	Marked
[ Fibroadenoma TGLS = 1-14 ]			
[ Galactocele TGLS = 3-15 ]			
* Nose	Nasolacrim Dct	Inflammation	Suppurative, Mild
* Pituitary Gland		Hyperplasia	Moderate
[ Hyperplasia TGLS = 2-10 ]			
* Spleen		Leukemia Mononuclear	

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 141

TRT#: 2

SEX: Female

DAY ON TEST: 729

DOSE: CONTROL

DISP: Terminal Sacrifice

HISTO: 44653

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lung	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Nose	* Ovary	* Pancreas
* Parathyroid Gland	Peritoneum	* Pituitary Gland	Pleura
* Salivary Glands	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Trachea	* Urinary Bladder
* Uterus			

**MISSING**

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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**OBSERVATIONS**

* Adrenal Cortex		Vacuolization Cytoplasmic	Mild
* Kidney	Pelvis, Transit Epithe	Mineralization	Minimal
* Liver		Basophilic Focus	
* Mammary Gland		Carcinoma	
[ Carcinoma TGLS = 1-14+15+16 ]			
* Thyroid Gland	C Cell	Adenoma	

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 142

TRT#: 2

SEX: Female

DAY ON TEST: 729

DOSE: CONTROL

DISP: Terminal Sacrifice

HISTO: 44654

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Clitoral Gland	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lymph Node, Bronchial	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Nose	* Ovary	* Pancreas
* Parathyroid Gland	Peripheral Nerve	Peritoneum	* Salivary Glands
Skeletal Muscle	* Skin	Spinal Cord	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder	* Uterus	

MISSING

\* Lymph Node, Mandibular

OBSERVATIONS

* Adrenal Cortex		Vacuolization Cytoplasmic	Minimal
* Brain	Cerebrum	Pigmentation	Mild
Note: pigment considered to be related to pituitary tumor, but located within substance of cerebrum.			
* Kidney	Papilla	Mineralization	Minimal
	Pelvis, Transit Epithe	Mineralization	Minimal
		Nephropathy	Minimal
* Liver		Basophilic Focus	
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Minimal
Mesentery		Necrosis	Moderate
[ Necrosis TGLS = 2-15 ]			
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 1-10 ]			
Pleura		Fibrosis	Minimal

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 143

TRT#: 2

SEX: Female

DAY ON TEST: 728

DOSE: CONTROL

DISP: Terminal Sacrifice

HISTO: 44655

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lung
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Nose	* Ovary
* Pancreas	* Parathyroid Gland	Peritoneum	* Pituitary Gland
Pleura	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Trachea
* Urinary Bladder	* Uterus		

MISSING

\* Lymph Node, Mandibular

OBSERVATIONS

* Kidney	Pelvis, Transit Epithe Pelvis, Transit Epithe	Hyperplasia Mineralization	Minimal Minimal
* Liver		Basophilic Focus	
* Lymph Node, Bronchial		Ectasia Pigmentation	Moderate Moderate
[ Ectasia TGLS = 2-16 ]			
* Mammary Gland		Fibroadenoma	
[ Fibroadenoma TGLS = 1-14+15 ]			
Mesentery		Necrosis	Moderate
[ Necrosis TGLS = 4-17 ]			
* Thyroid Gland	C Cell C Cell	Carcinoma Hyperplasia	Mild
[ Carcinoma TGLS = 3-3 ]			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 144

TRT#: 2

SEX: Female

DAY ON TEST: 728

DOSE: CONTROL

DISP: Terminal Sacrifice

HISTO: 44656

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Liver
* Lung	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Ovary
* Pancreas	* Parathyroid Gland	Peripheral Nerve	Peritoneum
Pleura	* Salivary Glands	Skeletal Muscle	* Skin
Spinal Cord	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder
* Uterus			

**MISSING**

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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**OBSERVATIONS**

* Kidney		Nephropathy	Minimal
* Mammary Gland		Fibroadenoma	
[ Fibroadenoma TGLS = 1-14 ]			
* Nose	Nasolacrim Dct	Inflammation	Suppurative, Minimal
* Pituitary Gland		Cyst	Moderate
[ Cyst TGLS = 3-10 ]			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 145

TRT#: 2

DOSE: CONTROL

SEX: Female

DISP: Moribund Sacrifice

DAY ON TEST: 643

HISTO: 44657

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Blood Vessel	* Bone	* Bone Marrow	* Clitoral Gland
* Esophagus	* Eye	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx
* Mammary Gland	* Ovary	* Pancreas	* Parathyroid Gland
Peripheral Nerve	Peritoneum	Pleura	* Salivary Glands
Skeletal Muscle	* Skin	Spinal Cord	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea

MISSING

\* Lymph Node, Mandibular

OBSERVATIONS

* Adrenal Cortex		Vacuolization Cytoplasmic	Marked
* Adrenal Medulla		Pheochromocytoma Benign	
* Brain		Thrombosis	Marked
[ Thrombosis TGLS = 3-1 ]			
* Kidney		Leukemia Mononuclear	
* Liver		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 8-6 ]			
* Lung	Interstitialium	Fibrosis	Minimal
[ Leukemia Mononuclear TGLS = 2-4+5 ]		Leukemia Mononuclear	
Lymph Node	Pancreatic	Leukemia Mononuclear	
	Renal	Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 5-17 ]			
[ Leukemia Mononuclear TGLS = 7-15 ]			
* Lymph Node, Bronchial		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-3 ]			
* Lymph Node, Mediastinal		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-3 ]			
* Lymph Node, Mesenteric		Leukemia Mononuclear	

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 145

TRT#: 2

SEX: Female

DAY ON TEST: 643

DOSE: CONTROL

DISP: Moribund Sacrifice

HISTO: 44657

**ORGAN AND ACCOUNTABLE SITE STATUS**

[ Leukemia Mononuclear TGLS = 12-8 ]

\* Nose

Olfactory Epi

Degeneration

Hyaline, Mild

\* Pituitary Gland

Adenoma

Note: small pituitary section; unable to tell if pituitary tumor compressed brain.

[ Adenoma TGLS = 4-10 ]

\* Spleen

Leukemia Mononuclear

[ Leukemia Mononuclear TGLS = 6-15 ]

\* Urinary Bladder

Hemorrhage

Marked

\* Uterus

Cervix

Leukemia Mononuclear

Polyp Stromal

[ Leukemia Mononuclear TGLS = 10,11-10 ]

[ Polyp Stromal TGLS = 9-16 ]

PRIMARY CAUSE OF DEATH

- Spleen Leukemia Mononuclear

CONTRIBUTORY CAUSE OF DEATH

- Brain Thrombosis

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 146

TRT#: 2

SEX: Female

DAY ON TEST: 370

DOSE: CONTROL

DISP: Moribund Sacrifice

HISTO: 44658

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Larynx
* Lung	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Nose	* Ovary	* Pancreas	Peritoneum
Pleura	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Parathyroid Gland
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OBSERVATIONS

* Liver	Basophilic Focus	
[ Hepatodiaphragmatic Nodule TGLS = 4-6 ]	Hepatodiaphragmatic Nodule	Marked
* Pituitary Gland	Hyperplasia	Marked
* Uterus	Hemorrhage	Marked
[ Hemorrhage TGLS = 5-14 ]	Polyp Stromal	
[ Polyp Stromal TGLS = 3-15 ]		

PRIMARY CAUSE OF DEATH - Uterus Polyp Stromal

CONTRIBUTORY CAUSE OF DEATH - Uterus Hemorrhage

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 147

TRT#: 2

SEX: Female

DAY ON TEST: 714

DOSE: CONTROL

DISP: Moribund Sacrifice

HISTO: 44659

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lung	* Lymph Node, Bronchial	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Nose	* Ovary
* Pancreas	* Parathyroid Gland	Peritoneum	Pleura
* Salivary Glands	* Spleen	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	* Uterus

MISSING

\* Lymph Node, Mandibular

OBSERVATIONS

* Brain	Compression	Marked
	Hemorrhage	Moderate
* Clitoral Gland	Inflammation	Chronic, Moderate
* Kidney	Nephropathy	Mild
* Liver	Basophilic Focus	
	Vacuolization Cytoplasmic	Moderate
[ Vacuolization Cytoplasmic TGLS = 5,6-6 ]		
Mesentery	Necrosis	Moderate
[ Necrosis TGLS = 4-15 ]		
* Pituitary Gland	Adenoma	
[ Adenoma TGLS = 1-10 ]		
* Skin	Cyst Epithelial Inclusion	Marked
[ Cyst Epithelial Inclusion TGLS = 2-14 ]		
* Stomach, Forestomach	Ulcer	Marked
[ Ulcer TGLS = 7-10 ]		

PRIMARY CAUSE OF DEATH

- Pituitary Gland Adenoma

CONTRIBUTORY CAUSE OF DEATH

- Stomach;Forestomach Ulcer

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 148

TRT#: 2

SEX: Female

DAY ON TEST: 727

DOSE: CONTROL

DISP: Terminal Sacrifice

HISTO: 44660

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Larynx
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Nose	* Ovary	* Pancreas	* Parathyroid Gland
Peritoneum	* Pituitary Gland	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	* Uterus

**MISSING**

\* Lymph Node, Bronchial

**OBSERVATIONS**

* Liver		Basophilic Focus	
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Minimal
Pleura		Fibrosis	Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 149

TRT#: 2

SEX: Female

DAY ON TEST: 729

DOSE: CONTROL

DISP: Terminal Sacrifice

HISTO: 44661

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Larynx
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Ovary	* Pancreas
* Parathyroid Gland	Peritoneum	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Pituitary Gland
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OBSERVATIONS

* Liver		Basophilic Focus	
		Clear Cell Focus	
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Minimal
* Mammary Gland		Fibroadenoma	
[ Fibroadenoma TGLS = 1-14 ]			
Mesentery		Fibrosis	Moderate
		Necrosis	Moderate
[ Fibrosis TGLS = 2-14 ]			
[ Necrosis TGLS = 4-15 ]			
* Nose	Respirat Epith	Degeneration	Hyaline, Mild
Pleura		Fibrosis	Minimal
[ Fibrosis TGLS = 5-15 ]			
* Uterus		Polyp Stromal	
[ Polyp Stromal TGLS = 3-10 ]			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 150

TRT#: 2

SEX: Female

DAY ON TEST: 729

DOSE: CONTROL

DISP: Terminal Sacrifice

HISTO: 44662

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lung	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Ovary	* Pancreas	* Parathyroid Gland
Peritoneum	Pleura	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	* Uterus

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Eye [ Cataract TGLS = 1-13 ]	Lens	Cataract	Marked
* Kidney		Nephropathy	Minimal
* Liver		Basophilic Focus	
		Clear Cell Focus	
* Mammary Gland [ Carcinoma TGLS = 3-14 ]		Carcinoma	
Mesentery [ Necrosis TGLS = 4-14 ]		Necrosis	Moderate
* Nose	Respirat Epith	Degeneration	Hyaline, Mild
* Pituitary Gland [ Adenoma TGLS = 2-10 ]		Adenoma	

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 301

TRT#: 4

SEX: Female

DAY ON TEST: 729

DOSE: 450 PPM

DISP: Terminal Sacrifice

HISTO: 44913

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	Ear
* Esophagus	* Eye	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx
* Lung	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Nose
* Ovary	* Pancreas	* Parathyroid Gland	Pleura
* Salivary Glands	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	* Uterus

**MISSING**

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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**OBSERVATIONS**

* Kidney	Papilla	Mineralization	Minimal
		Nephropathy	Minimal
* Liver		Basophilic Focus	
* Mammary Gland		Carcinoma	
[ Carcinoma TGLS = 1-14 ]			
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 2-10 ]			
* Skin		Hyperplasia	Squamous, Focal, Mild
[ Hyperplasia TGLS = 3-15 ]			
* Spleen		Leukemia Mononuclear	

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 302

TRT#: 4

SEX: Female

DAY ON TEST: 728

DOSE: 450 PPM

DISP: Terminal Sacrifice

HISTO: 44914

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Larynx
* Lung	* Lymph Node, Bronchial	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Nose	* Ovary	* Pancreas
* Parathyroid Gland	Peritoneum	Pleura	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder
* Uterus			

**MISSING**

\* Lymph Node, Mandibular

**OBSERVATIONS**

* Liver		Basophilic Focus	
		Hepatodiaphragmatic Nodule	Marked
	[ Hepatodiaphragmatic Nodule TGLS = 2-6 ]		
* Pituitary Gland		Hyperplasia	Mild
Tongue	Epithelium	Hyperplasia	Minimal
	[ Hyperplasia TGLS = 1-14 ]		

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 303

TRT#: 4

SEX: Female

DAY ON TEST: 729

DOSE: 450 PPM

DISP: Terminal Sacrifice

HISTO: 44915

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Larynx
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Ovary	* Pancreas	* Parathyroid Gland	Peritoneum
* Salivary Glands	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder	* Uterus		

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Liver		Clear Cell Focus	
		Hepatodiaphragmatic Nodule	Marked
	[ Hepatodiaphragmatic Nodule TGLS = 2-6 ]		
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic, Mild
	Mesentery	Necrosis	Moderate
	[ Necrosis TGLS = 3-14 ]		
* Pituitary Gland		Cyst	Minimal
	[ Cyst TGLS = 1-10 ]		
Pleura		Fibrosis	Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 304

TRT#: 4

SEX: Female

DAY ON TEST: 729

DOSE: 450 PPM

DISP: Terminal Sacrifice

HISTO: 44916

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lung
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Ovary	* Pancreas	* Parathyroid Gland	Peritoneum
* Pituitary Gland	Pleura	* Salivary Glands	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder	* Uterus	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Kidney	Nephropathy	Minimal
* Liver	Leukemia Mononuclear	
Mesentery	Necrosis	Moderate
[ Necrosis TGLS = 1-14 ]		
* Spleen	Leukemia Mononuclear	

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 305

TRT#: 4

SEX: Female

DAY ON TEST: 728

DOSE: 450 PPM

DISP: Terminal Sacrifice

HISTO: 44917

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Clitoral Gland	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Nose	* Ovary	* Pancreas	* Parathyroid Gland
Peripheral Nerve	Peritoneum	Pleura	* Salivary Glands
Skeletal Muscle	* Skin	Spinal Cord	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder	* Uterus		

MISSING

\* Lymph Node, Mandibular

OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Marked
* Brain		Compression	Marked
* Kidney	Pelvis, Transit Epithe	Mineralization	Mild
		Nephropathy	Minimal
* Liver		Basophilic Focus	
		Leukemia Mononuclear	
	[ Leukemia Mononuclear TGLS = 4-6 ]		
* Lung		Inflammation	Chronic, Mild
	[ Inflammation TGLS = 5-14 ]		
* Lymph Node, Bronchial		Leukemia Mononuclear	
	[ Leukemia Mononuclear TGLS = 1-16 ]		
* Pituitary Gland		Adenoma	
	[ Adenoma TGLS = 2-10 ]		
* Spleen		Leukemia Mononuclear	
	[ Leukemia Mononuclear TGLS = 3-15 ]		

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 306

TRT#: 4

SEX: Female

DAY ON TEST: 729

DOSE: 450 PPM

DISP: Terminal Sacrifice

HISTO: 44918

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Larynx
* Lung	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Nose
* Ovary	* Pancreas	* Parathyroid Gland	Peritoneum
Pleura	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

**MISSING**

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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**OBSERVATIONS**

* Liver		Basophilic Focus	
* Mammary Gland		Fibroadenoma	
[ Fibroadenoma TGLS = 1-15 ]			
Mesentery		Necrosis	Moderate
[ Necrosis TGLS = 3-14 ]			
* Pituitary Gland		Hyperplasia	Moderate
* Uterus	Serosa	Hemangioma	
	Endometrium	Hyperplasia	Mild
[ Hemangioma TGLS = 2-10 ]			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 307

TRT#: 4

SEX: Female

DAY ON TEST: 729

DOSE: 450 PPM

DISP: Terminal Sacrifice

HISTO: 44919

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Larynx
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Ovary	* Pancreas	* Parathyroid Gland	Peritoneum
* Salivary Glands	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Liver		Basophilic Focus Hepatodiaphragmatic Nodule	Marked
[ Hepatodiaphragmatic Nodule TGLS = 3,4-7+14 ]			
* Lung	Alveolar Epith	Hyperplasia Inflammation	Minimal Chronic, Mild
	Alveolar Epith	Metaplasia Adenoma	Squamous, Minimal
* Pituitary Gland			
[ Adenoma TGLS = 1-10 ]			
Pleura		Fibrosis Inflammation	Mild Chronic, Mild
* Uterus		Polyp Stromal	
[ Polyp Stromal TGLS = 2-14 ]			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 308

TRT#: 4

SEX: Female

DAY ON TEST: 729

DOSE: 450 PPM

DISP: Terminal Sacrifice

HISTO: 44920

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lung
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Nose	* Ovary
* Pancreas	* Parathyroid Gland	Peripheral Nerve	Peritoneum
Pleura	* Salivary Glands	Skeletal Muscle	* Skin
Spinal Cord	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder
* Uterus			

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Kidney	Nephropathy	Minimal
* Liver	Basophilic Focus	
* Mammary Gland	Fibroadenoma	Multiple
[ Fibroadenoma TGLS = 2,3-7+14 ]		
* Pituitary Gland	Hyperplasia	Marked
[ Hyperplasia TGLS = 1-10 ]		

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 309

TRT#: 4

SEX: Female

DAY ON TEST: 562

DOSE: 450 PPM

DISP: Moribund Sacrifice

HISTO: 44921

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lung	* Lymph Node, Mesenteric
* Mammary Gland	* Nose	* Pancreas	* Parathyroid Gland
Peritoneum	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder	* Uterus	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
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OBSERVATIONS

* Brain	Hemorrhage	Moderate
* Kidney	Nephropathy	Minimal
* Liver	Hepatodiaphragmatic Nodule	Marked
[ Hepatodiaphragmatic Nodule TGLS = 4-6 ]		
* Ovary	Cyst	Marked
[ Cyst TGLS = 5-9 ]		
* Pituitary Gland	Adenoma	
[ Adenoma TGLS = 3-10 ]		
Pleura	Inflammation	Chronic, Minimal

PRIMARY CAUSE OF DEATH - Pituitary Gland Adenoma

CONTRIBUTORY CAUSE OF DEATH - Brain Hemorrhage

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 310

TRT#: 4

SEX: Female

DAY ON TEST: 729

DOSE: 450 PPM

DISP: Terminal Sacrifice

HISTO: 44922

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lung
* Lymph Node, Mesenteric	* Mammary Gland	* Nose	* Pancreas
* Parathyroid Gland	Peritoneum	* Pituitary Gland	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder
* Uterus			

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
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OBSERVATIONS

* Kidney	Nephropathy	Minimal
* Liver	Basophilic Focus	
* Ovary	Cyst	Mild
Pleura	Fibrosis	Minimal
	Inflammation	Chronic, Minimal

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 311

TRT#: 4

SEX: Female

DAY ON TEST: 728

DOSE: 450 PPM

DISP: Terminal Sacrifice

HISTO: 44923

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lung	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Nose	* Ovary	* Pancreas
* Parathyroid Gland	Peritoneum	Pleura	* Salivary Glands
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	* Uterus

**MISSING**

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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**OBSERVATIONS**

* Clitoral Gland [ Cyst TGLS = 4-9 ]		Cyst	Marked
* Kidney	Papilla	Mineralization Nephropathy Basophilic Focus Fibroadenoma	Minimal Minimal
* Liver			
* Mammary Gland [ Fibroadenoma TGLS = 2-14 ]			
* Pituitary Gland [ Hyperplasia TGLS = 1-10 ]		Hyperplasia	Marked
* Skin [ Cyst Epithelial Inclusion TGLS = 3-15 ]		Cyst Epithelial Inclusion	Marked

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Date Report Requested:** 10/16/2014

**Test Type:** CHRONIC

**Test Compound:** Methyl isobutyl ketone

**Time Report Requested:** 22:41:42

**Route:** RESPIRATORY EXPOSURE WHOLE BODY

**CAS Number:** 108-10-1

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

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

**Lab:** BNW

**ANIMAL ID:** 312

**TRT#:** 4

**SEX:** Female

**DAY ON TEST:** 539

**DOSE:** 450 PPM

**DISP:** Moribund Sacrifice

**HISTO:** 44924

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Clitoral Gland	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Liver	* Lung	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Nose	* Ovary	* Pancreas
* Parathyroid Gland	Peritoneum	Pleura	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder
* Uterus			

**MISSING**

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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**OBSERVATIONS**

* Adrenal Cortex		Vacuolization Cytoplasmic	Mild
* Brain		Compression	Marked
* Kidney	Pelvis, Transit Epithe	Mineralization	Minimal
		Nephropathy	Mild
* Mammary Gland		Carcinoma	
		Fibroadenoma	
[ Carcinoma TGLS = 1-15 ]			
[ Fibroadenoma TGLS = 3-14 ]			
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 2-10 ]			

**PRIMARY CAUSE OF DEATH**

- Pituitary Gland Adenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 313

TRT#: 4

SEX: Female

DAY ON TEST: 728

DOSE: 450 PPM

DISP: Terminal Sacrifice

HISTO: 44925

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Larynx	* Lymph Node, Bronchial	* Lymph Node, Mesenteric	* Nose
* Ovary	* Pancreas	* Parathyroid Gland	Peritoneum
* Pituitary Gland	* Salivary Glands	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder	* Uterus		

MISSING

* Lymph Node, Mandibular	* Lymph Node, Mediastinal
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OBSERVATIONS

* Eye [ Cataract TGLS = 1-13 ]	Lens	Cataract	Marked
* Islets, Pancreatic		Hyperplasia	Marked
* Kidney		Nephropathy	Minimal
* Liver		Leukemia Mononuclear	
* Lung		Inflammation	Chronic, Mild
* Mammary Gland [ Carcinoma TGLS = 3-14 ]		Carcinoma	
Pleura [ Fibrosis TGLS = 2-5 ]		Fibrosis	Mild
		Inflammation	Chronic, Minimal
* Spleen		Leukemia Mononuclear	

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 314

TRT#: 4

SEX: Female

DAY ON TEST: 707

DOSE: 450 PPM

DISP: Moribund Sacrifice

HISTO: 44926

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lung	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Ovary	* Pancreas	* Parathyroid Gland
Peritoneum	Pleura	* Salivary Glands	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder	* Uterus	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Brain		Compression	Marked
* Kidney	Papilla	Mineralization	Minimal
		Nephropathy	Minimal
* Liver		Leukemia Mononuclear	
* Mammary Gland		Carcinoma	
		Fibroadenoma	
[ Carcinoma TGLS = 1-14 ]			
[ Fibroadenoma TGLS = 2-15 ]			
* Nose	Respirat Epith	Degeneration	Hyaline, Mild
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 3-10 ]			
* Spleen		Leukemia Mononuclear	

PRIMARY CAUSE OF DEATH - Pituitary Gland Adenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 315

TRT#: 4

SEX: Female

DAY ON TEST: 665

DOSE: 450 PPM

DISP: Moribund Sacrifice

HISTO: 44927

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lung	* Lymph Node, Mesenteric	* Nose
* Ovary	* Pancreas	* Parathyroid Gland	Peritoneum
Pleura	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder	* Uterus	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Cortex	Vacuolization Cytoplasmic	Moderate
* Eye	Inflammation	Suppurative, Marked
[ Inflammation TGLS = 2-13 ]		
* Kidney	Nephropathy	Mild
* Liver	Vacuolization Cytoplasmic	Moderate
* Lymph Node, Mediastinal	Angiectasis	Marked
[ Angiectasis TGLS = 4-3 ]		
* Mammary Gland	Fibroadenoma	
[ Fibroadenoma TGLS = 3-14 ]		
Oral Mucosa	Squamous Cell Carcinoma	
Note: pcod is squamous cell ca in oral cavity on slide 12		
* Pituitary Gland	Cyst	Moderate

PRIMARY CAUSE OF DEATH - Oral Mucosa Squamous Cell Carcinoma

CONTRIBUTORY CAUSE OF DEATH - Eye Inflammation

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 316

TRT#: 4

SEX: Female

DAY ON TEST: 595

DOSE: 450 PPM

DISP: Moribund Sacrifice

HISTO: 44928

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Liver	* Lung
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Nose	* Ovary
* Pancreas	* Parathyroid Gland	Peritoneum	Pleura
* Salivary Glands	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

**MISSING**

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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**OBSERVATIONS**

* Brain	Compression	Moderate
* Kidney	Nephropathy	Mild
[ Nephropathy TGLS = 2-7 ]		
* Mammary Gland	Carcinoma	
[ Carcinoma TGLS = 3-14 ]		
* Pituitary Gland	Adenoma	
[ Adenoma TGLS = 1-10 ]		
* Uterus	Polyp Stromal	

PRIMARY CAUSE OF DEATH

- Pituitary Gland Adenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 317

TRT#: 4

SEX: Female

DAY ON TEST: 356

DOSE: 450 PPM

DISP: Moribund Sacrifice

HISTO: 44929

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Larynx
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Ovary	* Pancreas	* Parathyroid Gland	Peritoneum
Pleura	* Salivary Glands	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder	* Uterus		

MISSING

\* Lymph Node, Mandibular

OBSERVATIONS

* Liver		Leukemia Mononuclear	
* Lung	Mediastinum	Schwannoma Malignant	Metastatic (Mesentery)
* Lymph Node, Bronchial		Hemorrhage	Mild
[ Hemorrhage TGLS = 9-3 ]			
Mesentery		Schwannoma Malignant	
[ Schwannoma Malignant TGLS = 1,2,3,4,7-15+14+17+18+19+16 ]			
* Pituitary Gland		Hyperplasia	Moderate
[ Hyperplasia TGLS = 5-10 ]			
Skeletal Muscle		Schwannoma Malignant	
[ Schwannoma Malignant TGLS = 8-20 ]			
* Spleen		Leukemia Mononuclear	

PRIMARY CAUSE OF DEATH

- Mesentery Schwannoma Malignant

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 318

TRT#: 4

SEX: Female

DAY ON TEST: 722

DOSE: 450 PPM

DISP: Moribund Sacrifice

HISTO: 44930

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lung	* Mammary Gland
* Nose	* Ovary	* Pancreas	* Parathyroid Gland
Peritoneum	* Salivary Glands	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder	* Uterus		

MISSING

\* Lymph Node, Mandibular

OBSERVATIONS

* Heart	Atrium	Thrombosis	Marked
[ Thrombosis TGLS = 1-6 ]			
* Kidney		Leukemia Mononuclear	
		Nephropathy	Minimal
* Liver		Hepatodiaphragmatic Nodule	Marked
[ Hepatodiaphragmatic Nodule TGLS = 4-6 ]			
[ Leukemia Mononuclear TGLS = 5-6 ]			
* Lymph Node, Bronchial		Leukemia Mononuclear	
* Lymph Node, Mediastinal		Leukemia Mononuclear	
* Lymph Node, Mesenteric		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 6-8 ]			
* Pituitary Gland		Cyst	Marked
		Hemorrhage	Moderate
[ Hemorrhage TGLS = 2-10 ]			
Pleura		Fibrosis	Minimal
* Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 3-6 ]			

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Methyl isobutyl ketone  
**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014  
**Time Report Requested:** 22:41:42  
**First Dose M/F:** NA / NA  
**Lab:** BNW

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**ANIMAL ID:** 318

**TRT#:** 4

**SEX:** Female

**DAY ON TEST:** 722

**DOSE:** 450 PPM

**DISP:** Moribund Sacrifice

**HISTO:** 44930

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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PRIMARY CAUSE OF DEATH

- Heart Atrium Thrombosis

CONTRIBUTORY CAUSE OF DEATH

- Spleen Leukemia Mononuclear

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 319

TRT#: 4

SEX: Female

DAY ON TEST: 728

DOSE: 450 PPM

DISP: Terminal Sacrifice

HISTO: 44931

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Larynx
* Lung	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Nose	* Ovary	* Pancreas	* Parathyroid Gland
Peripheral Nerve	Peritoneum	Pleura	* Salivary Glands
Skeletal Muscle	* Skin	Spinal Cord	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Trachea	* Urinary Bladder

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Liver		Basophilic Focus	
		Leukemia Mononuclear	
		Adenoma	
* Pituitary Gland			
[ Adenoma TGLS = 1-10 ]			
* Spleen		Leukemia Mononuclear	
* Thyroid Gland	Bilateral, C Cell	Adenoma	
	C Cell	Hyperplasia	Moderate
* Uterus		Leiomyosarcoma	
[ Leiomyosarcoma TGLS = 2-10 ]			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 320

TRT#: 4

SEX: Female

DAY ON TEST: 729

DOSE: 450 PPM

DISP: Terminal Sacrifice

HISTO: 44932

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Nose	* Ovary	Peritoneum	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder
* Uterus			

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Parathyroid Gland
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OBSERVATIONS

* Adrenal Cortex		Vacuolization Cytoplasmic	Mild
* Kidney	Pelvis, Transit Epithe	Mineralization	Minimal
* Liver		Basophilic Focus	
* Lung		Inflammation	Chronic, Moderate
[ Inflammation TGLS = 2-5 ]			
* Mammary Gland		Fibroadenoma	
[ Fibroadenoma TGLS = 1-14 ]			
* Pancreas	Acinus	Atrophy	Mild
* Pituitary Gland		Hyperplasia	Marked
Pleura		Fibrosis	Mild
		Inflammation	Chronic, Moderate

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 321

TRT#: 4

SEX: Female

DAY ON TEST: 728

DOSE: 450 PPM

DISP: Terminal Sacrifice

HISTO: 44933

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Larynx
* Lung	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Pancreas	* Parathyroid Gland	Peritoneum	* Pituitary Gland
Pleura	* Salivary Glands	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Trachea	* Urinary Bladder
* Uterus			

MISSING

* Lymph Node, Mandibular	* Lymph Node, Mediastinal
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OBSERVATIONS

* Liver		Basophilic Focus	
		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 4-6 ]			
* Lymph Node, Bronchial		Carcinoma	Metastatic (Thyroid Gland)
[ Carcinoma TGLS = 2-14 ]			
* Ovary		Cyst	Mild
[ Cyst TGLS = 3-9 ]			
* Spleen		Leukemia Mononuclear	
* Thyroid Gland	C Cell	Carcinoma	
[ Carcinoma TGLS = 1-3 ]			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 322

TRT#: 4

SEX: Female

DAY ON TEST: 728

DOSE: 450 PPM

DISP: Terminal Sacrifice

HISTO: 44934

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lung
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Nose	* Ovary
* Pancreas	Peritoneum	Pleura	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder
* Uterus			

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Parathyroid Gland
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OBSERVATIONS

* Kidney	Nephropathy	Minimal
* Liver	Basophilic Focus	
	Clear Cell Focus	
[ Clear Cell Focus TGLS = 5-6 ]		
* Mammary Gland	Fibroadenoma	Multiple
[ Fibroadenoma TGLS = 1,2-14+15 ]		
* Pituitary Gland	Cyst	Marked
[ Cyst TGLS = 4-10 ]		

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 323

TRT#: 4

SEX: Female

DAY ON TEST: 728

DOSE: 450 PPM

DISP: Terminal Sacrifice

HISTO: 44935

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lung	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Pancreas	* Parathyroid Gland
Peritoneum	Pleura	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	* Uterus

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Marked
* Kidney		Nephropathy	Minimal
* Liver		Basophilic Focus	
		Hepatodiaphragmatic Nodule	Marked
		Mixed Cell Focus	
[ Hepatodiaphragmatic Nodule TGLS = 1-6 ]			
Mesentery		Hemorrhage	Moderate
[ Hemorrhage TGLS = 2-14 ]			
* Nose	Nasolacrim Dct	Inflammation	Suppurative, Mild
* Ovary		Cyst	Marked
[ Cyst TGLS = 3-9 ]			
* Pituitary Gland		Adenoma	

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 324

TRT#: 4

SEX: Female

DAY ON TEST: 594

DOSE: 450 PPM

DISP: Moribund Sacrifice

HISTO: 44936

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lung	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Ovary
* Pancreas	* Parathyroid Gland	Peritoneum	Pleura
* Salivary Glands	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder	* Uterus	

MISSING

\* Lymph Node, Mandibular

OBSERVATIONS

* Brain		Compression	Marked
* Clitoral Gland		Hyperplasia	Marked
[ Hyperplasia TGLS = 1-14 ]			
* Kidney		Nephropathy	Minimal
* Larynx		Foreign Body	Marked
* Liver		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 5-6 ]		Vacuolization Cytoplasmic	Mild
* Lymph Node, Bronchial		Hyperplasia	Lymphoid, Moderate
[ Hyperplasia TGLS = 3-3 ]		Pigmentation	Moderate
* Mammary Gland		Fibroadenoma	
[ Fibroadenoma TGLS = 2-15+16 ]			
Mesentery		Necrosis	Moderate
[ Necrosis TGLS = 6-17 ]			
* Nose	Respirat Epith	Foreign Body	Moderate
* Pituitary Gland		Hyperplasia	Mild
[ Adenoma TGLS = 4-10 ]		Adenoma	

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 97006-01

**Test Type:** CHRONIC

**Route:** RESPIRATORY EXPOSURE WHOLE BODY

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Methyl isobutyl ketone

**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014

**Time Report Requested:** 22:41:42

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

**Lab:** BNW

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**ANIMAL ID:** 324

**TRT#:** 4

**SEX:** Female

**DAY ON TEST:** 594

**DOSE:** 450 PPM

**DISP:** Moribund Sacrifice

**HISTO:** 44936

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Skin [ Ulcer TGLS = 2-15+16 ]	Ulcer	Marked
* Spleen	Leukemia Mononuclear	
* Stomach, Forestomach [ Necrosis TGLS = 7-10 ]	Necrosis	Moderate

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PRIMARY CAUSE OF DEATH

- Skin Ulcer

CONTRIBUTORY CAUSE OF DEATH

- Pituitary Gland Adenoma;Spleen Leukemia Mononuclear

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 325

TRT#: 4

SEX: Female

DAY ON TEST: 729

DOSE: 450 PPM

DISP: Terminal Sacrifice

HISTO: 44937

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lung	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Nose	* Ovary	* Pancreas
Peritoneum	Pleura	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	* Uterus

MISSING

* Lymph Node, Mandibular	* Parathyroid Gland
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OBSERVATIONS

* Clitoral Gland [ Carcinoma TGLS = 5-9 ]		Carcinoma	
* Kidney	Pelvis, Transit Epithe	Mineralization Nephropathy Clear Cell Focus	Minimal Mild
* Liver		Hyperplasia Pigmentation	Lymphoid, Moderate Mild
* Lymph Node, Bronchial [ Hyperplasia TGLS = 2-15 ]			
* Mammary Gland [ Fibroadenoma TGLS = 1-14 ]		Fibroadenoma	
Mesentery [ Necrosis TGLS = 4-16 ]		Necrosis	Moderate
* Pituitary Gland [ Adenoma TGLS = 3-10 ]		Adenoma	

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 326

TRT#: 4

SEX: Female

DAY ON TEST: 728

DOSE: 450 PPM

DISP: Terminal Sacrifice

HISTO: 44938

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Nose	* Ovary	* Pancreas
* Parathyroid Gland	Peritoneum	Pleura	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder
* Uterus			

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Clitoral Gland [ Hyperplasia TGLS = 2-14 ]		Hyperplasia	Marked
* Kidney		Nephropathy	Mild
* Liver [ Hepatodiaphragmatic Nodule TGLS = 3-6 ]		Clear Cell Focus Hepatodiaphragmatic Nodule	Marked
* Lung	Interstitialium Alveolar Epith	Fibrosis Hyperplasia Inflammation Hyperplasia	Mild Mild Chronic, Mild Marked
* Pituitary Gland [ Hyperplasia TGLS = 1-10 ]			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 327

TRT#: 4

SEX: Female

DAY ON TEST: 455

DOSE: 450 PPM

DISP: Moribund Sacrifice

HISTO: 44939

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Liver	* Lung
* Lymph Node, Mesenteric	* Nose	* Ovary	* Pancreas
* Parathyroid Gland	Peritoneum	Pleura	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder
* Uterus			

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
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OBSERVATIONS

* Brain		Compression	Marked
* Kidney	Pelvis, Transit Epithe	Mineralization	Minimal
		Nephropathy	Mild
* Mammary Gland	Epithelium	Hyperplasia	Moderate
[ Hyperplasia TGLS = 2-14 ]			
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 1-10 ]			

PRIMARY CAUSE OF DEATH

- Pituitary Gland Adenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 328

TRT#: 4

SEX: Female

DAY ON TEST: 729

DOSE: 450 PPM

DISP: Terminal Sacrifice

HISTO: 44940

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Nose	* Ovary	* Pancreas
* Parathyroid Gland	Peritoneum	Pleura	* Salivary Glands
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	* Uterus

MISSING

\* Lymph Node, Mandibular

OBSERVATIONS

* Kidney	Pelvis, Transit Epithe	Mineralization	Minimal
		Nephropathy	Mild
* Liver		Basophilic Focus	
		Clear Cell Focus	
		Hepatodiaphragmatic Nodule	Marked
		Leukemia Mononuclear	
	[ Hepatodiaphragmatic Nodule TGLS = 5,10-3+15 ]		
* Lung		Leukemia Mononuclear	
* Lymph Node, Bronchial		Leukemia Mononuclear	
	[ Leukemia Mononuclear TGLS = 2-4 ]		
* Mammary Gland		Fibroadenoma	Multiple
	[ Fibroadenoma TGLS = 1,7,8-14+16+17+18+19 ]		
Mesentery		Necrosis	Moderate
	[ Necrosis TGLS = 9-15 ]		
* Pituitary Gland		Adenoma	
		Cyst	Marked
	[ Adenoma TGLS = 3-10 ]		
	[ Cyst TGLS = 3-10 ]		

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01

**Test Type:** CHRONIC

**Route:** RESPIRATORY EXPOSURE WHOLE BODY

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Methyl isobutyl ketone

**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014

**Time Report Requested:** 22:41:42

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

**Lab:** BNW

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**ANIMAL ID:** 328

**TRT#:** 4

**SEX:** Female

**DAY ON TEST:** 729

**DOSE:** 450 PPM

**DISP:** Terminal Sacrifice

**HISTO:** 44940

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* Spleen

Leukemia Mononuclear

[ Leukemia Mononuclear TGLS = 4-14 ]

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PRIMARY CAUSE OF DEATH

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 329

TRT#: 4

SEX: Female

DAY ON TEST: 707

DOSE: 450 PPM

DISP: Moribund Sacrifice

HISTO: 44941

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Mammary Gland	* Nose
* Ovary	* Pancreas	* Parathyroid Gland	Peritoneum
* Pituitary Gland	Pleura	* Salivary Glands	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Clitoral Gland [ Cyst TGLS = 8-9 ]		Cyst	Mild
* Kidney		Leukemia Mononuclear	
* Liver [ Leukemia Mononuclear TGLS = 6-6 ]		Leukemia Mononuclear	
* Lung		Leukemia Mononuclear	
Lymph Node	Deep Cervical	Leukemia Mononuclear	
	Pancreatic	Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 2-15 ]			
[ Leukemia Mononuclear TGLS = 7-14 ]			
* Lymph Node, Mediastinal [ Leukemia Mononuclear TGLS = 3-3 ]		Leukemia Mononuclear	
* Lymph Node, Mesenteric		Leukemia Mononuclear	
* Skin [ Basal Cell Carcinoma TGLS = 1-15 ]		Basal Cell Carcinoma	
* Spleen [ Leukemia Mononuclear TGLS = 4-14 ]		Leukemia Mononuclear	
* Stomach, Forestomach [ Hyperplasia TGLS = 9-10 ]		Hyperplasia	Squamous, Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01

**Test Type:** CHRONIC

**Route:** RESPIRATORY EXPOSURE WHOLE BODY

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Methyl isobutyl ketone

**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014

**Time Report Requested:** 22:41:42

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

**Lab:** BNW

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**ANIMAL ID:** 329

**TRT#:** 4

**SEX:** Female

**DAY ON TEST:** 707

**DOSE:** 450 PPM

**DISP:** Moribund Sacrifice

**HISTO:** 44941

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* Uterus

Polyp Stromal

[ Polyp Stromal TGLS = 5-10 ]

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PRIMARY CAUSE OF DEATH

- Spleen Leukemia Mononuclear

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\* PROTOCOL REQUIRED TISSUE



Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 330

TRT#: 4

DOSE: 450 PPM

SEX: Female

DISP: Terminal Sacrifice

DAY ON TEST: 728

HISTO: 44942

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Kidney	* Larynx	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Nose	* Pancreas	Peritoneum	Pleura
* Salivary Glands	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder
* Uterus			

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Parathyroid Gland
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OBSERVATIONS

* Adrenal Medulla	Atrophy Pheochromocytoma Malignant	Marked
[ Atrophy TGLS = 7-7 ]		
[ Pheochromocytoma Malignant TGLS = 6-14 ]		
* Heart	Cardiomyopathy	Moderate
* Liver	Basophilic Focus	
* Lung	Alveolar/Bronchiolar Adenoma	
[ Alveolar/Bronchiolar Adenoma TGLS = 5-5 ]		
* Mammary Gland	Fibroadenoma	Multiple
[ Fibroadenoma TGLS = 1,2-15+16+17 ]		
* Ovary	Cyst	Marked
[ Cyst TGLS = 4-9 ]		
* Pituitary Gland	Adenoma	
* Spleen	Fibrosis	Mild
[ Fibrosis TGLS = 3-6 ]		

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 331

TRT#: 4

DOSE: 450 PPM

SEX: Female

DISP: Terminal Sacrifice

DAY ON TEST: 729

HISTO: 44943

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Nose	* Pancreas
* Parathyroid Gland	Peripheral Nerve	Peritoneum	* Salivary Glands
Skeletal Muscle	* Skin	Spinal Cord	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder	* Uterus		

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Brain		Compression	Marked
[ Compression TGLS = 4-1 ]			
* Clitoral Gland		Cyst	Mild
* Kidney		Nephropathy	Mild
* Larynx		Foreign Body	Marked
		Inflammation	Chronic, Moderate
* Liver		Basophilic Focus	
	Hepatocyte	Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 6-6 ]		Regeneration	Marked
[ Regeneration TGLS = 7-19 ]			
* Lung		Inflammation	Chronic, Mild
[ Inflammation TGLS = 5-5 ]			
* Mammary Gland		Fibroadenoma	Multiple
[ Fibroadenoma TGLS = 1,2-15+16+17+18 ]			
Mesentery		Necrosis	Moderate
[ Necrosis TGLS = 8-3 ]			
* Ovary		Cyst	Moderate

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01

**Test Type:** CHRONIC

**Route:** RESPIRATORY EXPOSURE WHOLE BODY

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Methyl isobutyl ketone

**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014

**Time Report Requested:** 22:41:42

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

**Lab:** BNW

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**ANIMAL ID:** 331

**TRT#:** 4

**SEX:** Female

**DAY ON TEST:** 729

**DOSE:** 450 PPM

**DISP:** Terminal Sacrifice

**HISTO:** 44943

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* Pituitary Gland

[ Adenoma TGLS = 3-10 ]

Adenoma

Pleura

Fibrosis

Mild

Inflammation

Chronic, Moderate

\* Spleen

Leukemia Mononuclear

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PRIMARY CAUSE OF DEATH

-

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 332

TRT#: 4

SEX: Female

DAY ON TEST: 729

DOSE: 450 PPM

DISP: Terminal Sacrifice

HISTO: 44944

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Larynx
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Pancreas	* Parathyroid Gland	Peritoneum	Pleura
* Salivary Glands	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder	* Uterus		

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Liver	Serosa	Basophilic Focus Fibrosis Hepatodiaphragmatic Nodule	Mild Marked
[ Fibrosis TGLS = 6-14 ] [ Hepatodiaphragmatic Nodule TGLS = 2-14 ]			
* Lung	Alveolar Epith	Hyperplasia	Moderate
[ Hyperplasia TGLS = 4-5 ]			
Mesentery		Necrosis	Moderate
[ Necrosis TGLS = 3-15 ]			
* Ovary		Cyst	Mild
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 1-10 ]			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 333

TRT#: 4

SEX: Female

DAY ON TEST: 729

DOSE: 450 PPM

DISP: Terminal Sacrifice

HISTO: 44945

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Clitoral Gland	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lung	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Ovary	* Pancreas	Peritoneum
Pleura	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder	* Uterus	

**MISSING**

* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Parathyroid Gland
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**OBSERVATIONS**

* Adrenal Cortex		Vacuolization Cytoplasmic	Moderate
* Brain		Compression	Moderate
* Kidney	Renal Tubule	Hyperplasia	Mild
		Nephropathy	Moderate
* Liver		Basophilic Focus	
Mesentery		Necrosis	Moderate
[ Necrosis TGLS = 2-14 ]			
* Nose	Nasolacrim Dct	Inflammation	Suppurative, Mild
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 1-10 ]			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 334

TRT#: 4

SEX: Female

DAY ON TEST: 729

DOSE: 450 PPM

DISP: Terminal Sacrifice

HISTO: 44946

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex           | * Adrenal Medulla         | Blood Vessel                | * Bone                   |
| * Bone Marrow              | * Brain                   | * Clitoral Gland            | * Esophagus              |
| * Eye                      | * Harderian Gland         | * Heart                     | * Intestine Large, Cecum |
| * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic      | * Liver                     | * Lung                   |
| * Lymph Node, Mediastinal  | * Lymph Node, Mesenteric  | * Mammary Gland             | * Nose                   |
| * Ovary                    | * Pancreas                | * Parathyroid Gland         | Peritoneum               |
| Pleura                     | * Salivary Glands         | * Skin                      | * Spleen                 |
| * Stomach, Forestomach     | * Stomach, Glandular      | * Thymus                    | * Thyroid Gland          |
| * Trachea                  | * Urinary Bladder         | * Uterus                    |                          |

MISSING

- |                         |                          |
|-------------------------|--------------------------|
| * Lymph Node, Bronchial | * Lymph Node, Mandibular |
|-------------------------|--------------------------|

OBSERVATIONS

- |                         |            |             |                |
|-------------------------|------------|-------------|----------------|
| * Kidney                |            | Nephropathy | Mild           |
| * Larynx                | Epiglottis | Metaplasia  | Squamous, Mild |
| * Pituitary Gland       |            | Adenoma     |                |
| [ Adenoma TGLS = 1-10 ] |            |             |                |

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 335

TRT#: 4

SEX: Female

DAY ON TEST: 718

DOSE: 450 PPM

DISP: Moribund Sacrifice

HISTO: 44947

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lung	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland	Peritoneum
Pleura	* Salivary Glands	* Skin	* Spleen
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder	* Uterus		

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Brain		Compression	Marked
* Kidney		Nephropathy	Mild
* Liver		Hepatodiaphragmatic Nodule	Marked
		Mixed Cell Focus	
[ Hepatodiaphragmatic Nodule TGLS = 4-6 ]			
[ Mixed Cell Focus TGLS = 5,6-14+15 ]			
* Mammary Gland		Fibroadenoma	
[ Fibroadenoma TGLS = 1-16 ]			
* Nose	Respirat Epith	Degeneration	Hyaline, Minimal
* Ovary		Cyst	Moderate
[ Cyst TGLS = 3-9 ]			
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 2-10 ]			
* Stomach, Forestomach		Hyperplasia	Squamous, Mild

PRIMARY CAUSE OF DEATH - Pituitary Gland Adenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 336

TRT#: 4

SEX: Female

DAY ON TEST: 729

DOSE: 450 PPM

DISP: Terminal Sacrifice

HISTO: 44948

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lung	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Nose	* Ovary	* Pancreas
* Parathyroid Gland	Peritoneum	Pleura	* Salivary Glands
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	* Uterus

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Brain [ Adenoma TGLS = 2-1 ]	Pineal Gland	Adenoma	
* Kidney		Nephropathy	Mild
* Liver		Basophilic Focus	
		Leukemia Mononuclear	
* Mammary Gland [ Fibroadenoma TGLS = 1-14 ]		Fibroadenoma	
* Pituitary Gland [ Cyst TGLS = 3-10 ]		Cyst	Marked
		Hyperplasia	Marked
* Spleen		Leukemia Mononuclear	

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 337

TRT#: 4

SEX: Female

DAY ON TEST: 569

DOSE: 450 PPM

DISP: Natural Death

HISTO: 44949

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Nose
* Ovary	* Pancreas	* Parathyroid Gland	Peritoneum
Pleura	* Salivary Glands	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder	* Uterus		

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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AUTO PRECLUDES DIAG.

* Intestine Small, Ileum
--------------------------

OBSERVATIONS

* Brain	Hemorrhage	Marked
* Kidney	Leukemia Mononuclear	
* Liver	Leukemia Mononuclear	
* Lung	Leukemia Mononuclear	
* Mammary Gland	Carcinoma	
[ Carcinoma TGLS = 1-14 ]		
* Pituitary Gland	Adenoma	
	Hemorrhage	Marked
[ Adenoma TGLS = 2-10 ]		
* Spleen	Leukemia Mononuclear	

PRIMARY CAUSE OF DEATH

- Brain Hemorrhage

CONTRIBUTORY CAUSE OF DEATH

- Pituitary Gland Adenoma; Pituitary Gland Hemorrhage

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 338

TRT#: 4

SEX: Female

DAY ON TEST: 729

DOSE: 450 PPM

DISP: Terminal Sacrifice

HISTO: 44950

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Larynx	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Ovary	* Pancreas	* Parathyroid Gland
Peritoneum	Pleura	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Trachea	* Urinary Bladder	* Uterus	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Clitoral Gland		Carcinoma	
[ Carcinoma TGLS = 1-15 ]			
* Liver		Hepatodiaphragmatic Nodule	Marked
[ Hepatodiaphragmatic Nodule TGLS = 4-6 ]			
* Lung	Bronchiole	Hyperplasia	Mild
* Mammary Gland		Carcinoma	
[ Carcinoma TGLS = 2-16+17+18 ]			
Mesentery		Necrosis	Moderate
[ Necrosis TGLS = 3-14 ]			
* Nose		Foreign Body	Moderate
* Pituitary Gland		Adenoma	
* Thyroid Gland	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 339

TRT#: 4

SEX: Female

DAY ON TEST: 728

DOSE: 450 PPM

DISP: Terminal Sacrifice

HISTO: 44951

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lung
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Ovary	* Pancreas
* Parathyroid Gland	Peritoneum	Pleura	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

**MISSING**

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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**OBSERVATIONS**

* Kidney		Nephropathy	Minimal
* Liver		Basophilic Focus	
* Mammary Gland		Fibroadenoma	
[ Fibroadenoma TGLS = 1-14 ]			
* Nose	Respirat Epith	Hyperplasia	Mild
		Inflammation	Suppurative, Mild
* Pituitary Gland		Hyperplasia	Moderate
[ Hyperplasia TGLS = 2-10 ]			
* Uterus	Endometrium	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 340

TRT#: 4

DOSE: 450 PPM

SEX: Female

DISP: Moribund Sacrifice

DAY ON TEST: 693

HISTO: 44952

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Nose	* Ovary	* Pancreas	Peritoneum
Pleura	* Salivary Glands	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder	* Uterus		

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Parathyroid Gland
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OBSERVATIONS

* Brain		Compression	Moderate
* Kidney	Pelvis, Transit Epithe Papilla	Hyperplasia Mineralization Nephropathy	Minimal Minimal Moderate
* Liver		Angiectasis Basophilic Focus Hepatocellular Adenoma Vacuolization Cytoplasmic	Moderate   Mild
			[ Angiectasis TGLS = 7-15 ] [ Hepatocellular Adenoma TGLS = 7-15 ] [ Vacuolization Cytoplasmic TGLS = 4-14 ]
* Lung	Bronchiole	Hyperplasia Inflammation	Mild Chronic, Minimal
* Mammary Gland		Carcinoma Fibroadenoma	Multiple
			[ Carcinoma TGLS = 1-14 ] [ Fibroadenoma TGLS = 2,3-16+17 ]
Mesentery		Necrosis	Moderate

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01

**Test Type:** CHRONIC

**Route:** RESPIRATORY EXPOSURE WHOLE BODY

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Methyl isobutyl ketone

**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014

**Time Report Requested:** 22:41:42

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

**Lab:** BNW

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**ANIMAL ID:** 340

**TRT#:** 4

**SEX:** Female

**DAY ON TEST:** 693

**DOSE:** 450 PPM

**DISP:** Moribund Sacrifice

**HISTO:** 44952

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Necrosis TGLS = 5-15 ]

\* Pituitary Gland

Adenoma

[ Adenoma TGLS = 6-10 ]

\* Spleen

Leukemia Mononuclear

---

PRIMARY CAUSE OF DEATH

- Pituitary Gland Adenoma

---

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 341

TRT#: 4

DOSE: 450 PPM

SEX: Female

DISP: Moribund Sacrifice

DAY ON TEST: 721

HISTO: 44953

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Larynx	* Lymph Node, Bronchial
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Ovary	* Pancreas	Peritoneum	Pleura
* Salivary Glands	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder
* Uterus			

MISSING

* Lymph Node, Mandibular	* Parathyroid Gland
--------------------------	---------------------

OBSERVATIONS

* Adrenal Cortex	Carcinoma	
Note: primary looks endocrine in most fields, but also some spindling, cystic areas, large cells that resemble neurons. Diff dx malignant pheo, ganglioneuroma.		
[ Carcinoma TGLS = 3-14+15 ]		
* Liver	Carcinoma	Metastatic (Adrenal Cortex)
	Leukemia Mononuclear	
[ Carcinoma TGLS = 4-6 ]		
[ Leukemia Mononuclear TGLS = 2-6 ]		
* Lung	Carcinoma	Metastatic (Adrenal Cortex)
* Pituitary Gland	Hyperplasia	Moderate
[ Hyperplasia TGLS = 1-10 ]		
* Spleen	Leukemia Mononuclear	

PRIMARY CAUSE OF DEATH

- Adrenal Cortex Carcinoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 342

TRT#: 4

SEX: Female

DAY ON TEST: 728

DOSE: 450 PPM

DISP: Terminal Sacrifice

HISTO: 44954

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Nose	* Ovary	* Pancreas
* Parathyroid Gland	Peritoneum	Pleura	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder
* Uterus			

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
-------------------------	--------------------------

OBSERVATIONS

* Kidney		Nephropathy	Minimal
* Liver		Basophilic Focus	
		Clear Cell Focus	
		Hepatodiaphragmatic Nodule	Marked
[ Hepatodiaphragmatic Nodule TGLS = 6-6 ]			
* Lung	Alveolar Epith	Hyperplasia	Mild
		Inflammation	Chronic, Minimal
[ Hyperplasia TGLS = 7-14 ]			
* Mammary Gland		Fibroadenoma	Multiple
[ Fibroadenoma TGLS = 1,2,4-14+15+16 ]			
Mesentery		Necrosis	Moderate
[ Necrosis TGLS = 5-17 ]			
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 3-10 ]			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 343

TRT#: 4

SEX: Female

DAY ON TEST: 712

DOSE: 450 PPM

DISP: Moribund Sacrifice

HISTO: 44955

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Clitoral Gland	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Ovary
* Pancreas	* Parathyroid Gland	Peritoneum	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder
* Uterus			

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Cortex		Hyperplasia	Mild
* Brain		Hemorrhage	Marked
* Kidney		Nephropathy	Minimal
* Liver		Basophilic Focus	
		Clear Cell Focus	
[ Clear Cell Focus TGLS = 2,3-6+14 ]			
* Lung		Inflammation	Chronic, Minimal
* Mammary Gland		Galactoceles	Marked
[ Galactoceles TGLS = 5-15 ]			
Mesentery		Necrosis	Moderate
[ Necrosis TGLS = 4-15 ]			
* Nose	Respirat Epith	Degeneration	Hyaline, Mild
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 1-10 ]			
Pleura		Inflammation	Chronic, Minimal

PRIMARY CAUSE OF DEATH - Pituitary Gland Adenoma

CONTRIBUTORY CAUSE OF DEATH - Brain Hemorrhage

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 344

TRT#: 4

SEX: Female

DAY ON TEST: 729

DOSE: 450 PPM

DISP: Terminal Sacrifice

HISTO: 44956

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lung	* Lymph Node, Bronchial
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Ovary	* Pancreas	* Parathyroid Gland	Peritoneum
* Pituitary Gland	Pleura	* Salivary Glands	* Stomach, Forestomach
* Stomach, Glandular	* Thyroid Gland	* Trachea	* Urinary Bladder
* Uterus			

**MISSING**

* Lymph Node, Mandibular	* Thymus
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**OBSERVATIONS**

* Clitoral Gland		Carcinoma	
[ Carcinoma TGLS = 1-15 ]			
* Kidney	Renal Tubule	Cyst	
		Nephropathy	Mild
[ Cyst TGLS = 2,3-16 ]			
* Liver		Leukemia Mononuclear	
* Skin	Subcut Tiss	Fibrosarcoma	
[ Fibrosarcoma TGLS = 4-14 ]			
* Spleen		Leukemia Mononuclear	

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 345

TRT#: 4

SEX: Female

DAY ON TEST: 728

DOSE: 450 PPM

DISP: Terminal Sacrifice

HISTO: 44957

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Liver	* Lung
* Lymph Node, Bronchial	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Nose	* Ovary	* Pancreas	Peritoneum
* Pituitary Gland	Pleura	* Salivary Glands	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

**MISSING**

* Lymph Node, Mandibular	* Parathyroid Gland
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**OBSERVATIONS**

* Eye	Lens	Cataract	Mild
* Kidney		Nephropathy	Minimal
* Skin		Inflammation	Acute, Mild
[ Inflammation TGLS = 1,2-14+15 ]			
* Spleen		Leukemia Mononuclear	
* Uterus	Bilateral	Polyp Stromal	

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 346

TRT#: 4

DOSE: 450 PPM

SEX: Female

DISP: Terminal Sacrifice

DAY ON TEST: 729

HISTO: 44958

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Nose	* Pancreas
Peritoneum	Pleura	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	* Uterus

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Parathyroid Gland
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OBSERVATIONS

* Kidney		Nephropathy	Mild
* Liver		Clear Cell Focus	
* Lung	Interstitialium	Fibrosis	Mild
	Alveolar Epith	Hyperplasia	Mild
Mesentery		Necrosis	Moderate
[ Necrosis TGLS = 2,3,4-7+14+15 ]			
* Ovary		Cyst	Minimal
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 1-10 ]			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 347

TRT#: 4

SEX: Female

DAY ON TEST: 728

DOSE: 450 PPM

DISP: Moribund Sacrifice

HISTO: 44959

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lung	* Lymph Node, Mesenteric	* Nose
* Pancreas	Peritoneum	Pleura	* Salivary Glands
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Trachea	* Urinary Bladder	* Uterus	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Parathyroid Gland
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OBSERVATIONS

* Brain		Compression	Marked
		Hemorrhage	Mild
* Clitoral Gland		Hyperplasia	Marked
		Inflammation	Chronic, Moderate
[ Hyperplasia TGLS = 2-16 ]			
* Kidney	Papilla	Mineralization	Minimal
		Nephropathy	Minimal
* Liver		Basophilic Focus	
		Leukemia Mononuclear	
* Mammary Gland		Fibroadenoma	Multiple
[ Fibroadenoma TGLS = 2,3-15+16 ]			
Mesentery		Necrosis	Moderate
[ Necrosis TGLS = 4-3 ]			
* Ovary		Cyst	Moderate
[ Cyst TGLS = 5-9 ]			
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 1-10 ]			
* Spleen		Leukemia Mononuclear	
* Thyroid Gland	C Cell	Adenoma	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Methyl isobutyl ketone  
**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014  
**Time Report Requested:** 22:41:42  
**First Dose M/F:** NA / NA  
**Lab:** BNW

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**ANIMAL ID:** 347

**TRT#:** 4

**SEX:** Female

**DAY ON TEST:** 728

**DOSE:** 450 PPM

**DISP:** Moribund Sacrifice

**HISTO:** 44959

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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PRIMARY CAUSE OF DEATH

- Pituitary Gland Adenoma

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 348

TRT#: 4

SEX: Female

DAY ON TEST: 729

DOSE: 450 PPM

DISP: Terminal Sacrifice

HISTO: 44960

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Nose	* Ovary
* Pancreas	* Parathyroid Gland	Peritoneum	Pleura
* Salivary Glands	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder
* Uterus			

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Kidney		Nephropathy	Mild
* Liver		Clear Cell Focus	
		Mixed Cell Focus	
[ Mixed Cell Focus TGLS = 4-14 ]			
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Minimal
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 3-10 ]			
* Skin		Inflammation	Acute, Mild
[ Inflammation TGLS = 1,2-15+16 ]			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:42

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 349

TRT#: 4

DOSE: 450 PPM

SEX: Female

DISP: Terminal Sacrifice

DAY ON TEST: 728

HISTO: 44961

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lung
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Ovary	* Pancreas	* Parathyroid Gland	Peritoneum
Pleura	* Salivary Glands	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Kidney		Nephropathy	Minimal
* Liver		Clear Cell Focus	
		Inflammation	Granulomatous, Mild
[ Clear Cell Focus TGLS = 5,6-6 ]			
Lymph Node	Pancreatic	Hemorrhage	Moderate
[ Hemorrhage TGLS = 3-6 ]			
* Pituitary Gland		Hyperplasia	Marked
[ Hyperplasia TGLS = 1-10 ]			
* Spleen		Inflammation	Granulomatous, Moderate
[ Inflammation TGLS = 4-6 ]			
* Uterus		Polyp Stromal	
[ Polyp Stromal TGLS = 2-10 ]			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 350

TRT#: 4

SEX: Female

DAY ON TEST: 537

DOSE: 450 PPM

DISP: Natural Death

HISTO: 44962

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                        |                      |                           |                             |
|------------------------|----------------------|---------------------------|-----------------------------|
| * Adrenal Cortex       | * Adrenal Medulla    | Blood Vessel              | * Bone                      |
| * Bone Marrow          | * Brain              | * Clitoral Gland          | * Esophagus                 |
| * Harderian Gland      | * Heart              | * Intestine Large, Rectum | * Intestine Small, Duodenum |
| * Islets, Pancreatic   | * Larynx             | * Lymph Node, Mediastinal | * Mammary Gland             |
| * Nose                 | * Ovary              | * Pancreas                | * Parathyroid Gland         |
| Peritoneum             | Pleura               | * Salivary Glands         | * Skin                      |
| * Stomach, Forestomach | * Stomach, Glandular | * Thymus                  | * Thyroid Gland             |
| * Trachea              | * Urinary Bladder    | * Uterus                  |                             |

MISSING

- |                         |                          |
|-------------------------|--------------------------|
| * Lymph Node, Bronchial | * Lymph Node, Mandibular |
|-------------------------|--------------------------|

AUTO PRECLUDES DIAG.

- |                          |                          |                          |                            |
|--------------------------|--------------------------|--------------------------|----------------------------|
| * Intestine Large, Cecum | * Intestine Large, Colon | * Intestine Small, Ileum | * Intestine Small, Jejunum |
|--------------------------|--------------------------|--------------------------|----------------------------|

OBSERVATIONS

- |                                     |      |                      |          |
|-------------------------------------|------|----------------------|----------|
| * Eye                               | Lens | Cataract             | Moderate |
| * Kidney                            |      | Leukemia Mononuclear |          |
| * Liver                             |      | Leukemia Mononuclear |          |
| * Lung                              |      | Leukemia Mononuclear |          |
| * Lymph Node, Mesenteric            |      | Leukemia Mononuclear |          |
| * Pituitary Gland                   |      | Adenoma              |          |
| [ Adenoma TGLS = 2-10 ]             |      |                      |          |
| * Spleen                            |      | Leukemia Mononuclear |          |
| [ Leukemia Mononuclear TGLS = 3-6 ] |      |                      |          |

PRIMARY CAUSE OF DEATH

- Pituitary Gland Adenoma

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 501

TRT#: 6

SEX: Female

DAY ON TEST: 581

DOSE: 900 PPM

DISP: Natural Death

HISTO: 44813

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Harderian Gland
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Larynx
* Lung	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Pancreas	* Parathyroid Gland	Peritoneum	Pleura
* Salivary Glands	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
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AUTO PRECLUDES DIAG.

* Intestine Small, Ileum
--------------------------

OBSERVATIONS

* Adrenal Cortex		Vacuolization Cytoplasmic	Minimal
* Eye	Lens	Cataract	Mild
* Heart		Cardiomyopathy	Minimal
* Liver		Clear Cell Focus	
		Hepatodiaphragmatic Nodule	Marked
	[ Hepatodiaphragmatic Nodule TGLS = 4-6 ]		
	Mesentery	Necrosis	Moderate
	[ Necrosis TGLS = 3-14 ]		
* Ovary		Cyst	Marked
	[ Cyst TGLS = 2-9 ]		
* Pituitary Gland		Adenoma	
	[ Adenoma TGLS = 1-10 ]		
* Uterus		Polyp Stromal	

PRIMARY CAUSE OF DEATH

- Pituitary Gland Adenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 502

TRT#: 6

SEX: Female

DAY ON TEST: 728

DOSE: 900 PPM

DISP: Terminal Sacrifice

HISTO: 44814

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex           | * Adrenal Medulla         | Blood Vessel                | * Bone                   |
| * Bone Marrow              | * Brain                   | * Clitoral Gland            | * Esophagus              |
| * Eye                      | * Harderian Gland         | * Heart                     | * Intestine Large, Cecum |
| * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic      | * Kidney                    | * Larynx                 |
| * Lung                     | * Lymph Node, Mediastinal | * Lymph Node, Mesenteric    | * Nose                   |
| * Ovary                    | * Pancreas                | * Parathyroid Gland         | Peritoneum               |
| * Pituitary Gland          | Pleura                    | * Salivary Glands           | * Skin                   |
| * Stomach, Forestomach     | * Stomach, Glandular      | * Thymus                    | * Thyroid Gland          |
| * Trachea                  | * Urinary Bladder         | * Uterus                    |                          |

MISSING

- |                         |                          |
|-------------------------|--------------------------|
| * Lymph Node, Bronchial | * Lymph Node, Mandibular |
|-------------------------|--------------------------|

OBSERVATIONS

- |                              |                      |
|------------------------------|----------------------|
| * Liver                      | Basophilic Focus     |
|                              | Clear Cell Focus     |
| * Mammary Gland              | Carcinoma            |
|                              | Fibroadenoma         |
| [ Carcinoma TGLS = 2-15 ]    |                      |
| [ Fibroadenoma TGLS = 1-14 ] |                      |
| * Spleen                     | Leukemia Mononuclear |

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 503

TRT#: 6

SEX: Female

DAY ON TEST: 727

DOSE: 900 PPM

DISP: Terminal Sacrifice

HISTO: 44815

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex          | * Adrenal Medulla           | Blood Vessel             | * Bone                     |
| * Bone Marrow             | * Clitoral Gland            | * Esophagus              | * Eye                      |
| * Harderian Gland         | * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic      | * Lymph Node, Mediastinal   | * Lymph Node, Mesenteric | * Mammary Gland            |
| * Nose                    | * Ovary                     | * Pancreas               | * Parathyroid Gland        |
| Peritoneum                | * Salivary Glands           | * Skin                   | * Spleen                   |
| * Stomach, Forestomach    | * Stomach, Glandular        | * Thymus                 | * Thyroid Gland            |
| * Trachea                 | * Urinary Bladder           | * Uterus                 |                            |

MISSING

- |                         |                          |
|-------------------------|--------------------------|
| * Lymph Node, Bronchial | * Lymph Node, Mandibular |
|-------------------------|--------------------------|

OBSERVATIONS

- |                         |                  |                  |
|-------------------------|------------------|------------------|
| * Brain                 | Compression      | Moderate         |
| * Kidney                | Nephropathy      | Mild             |
| * Larynx                | Foreign Body     | Marked           |
| * Liver                 | Basophilic Focus |                  |
| * Lung                  | Inflammation     | Chronic, Minimal |
| * Pituitary Gland       | Adenoma          |                  |
| [ Adenoma TGLS = 1-10 ] |                  |                  |
| Pleura                  | Fibrosis         | Minimal          |

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 504

TRT#: 6

SEX: Female

DAY ON TEST: 728

DOSE: 900 PPM

DISP: Terminal Sacrifice

HISTO: 44816

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Larynx	* Lymph Node, Bronchial
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Nose	* Ovary
* Pancreas	* Parathyroid Gland	Peritoneum	Pleura
* Salivary Glands	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Trachea	* Urinary Bladder
* Uterus			

**MISSING**

\* Lymph Node, Mandibular

**OBSERVATIONS**

* Clitoral Gland		Hyperplasia	Mild
* Liver		Basophilic Focus	
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Minimal
* Mammary Gland		Fibroadenoma	Multiple
[ Fibroadenoma TGLS = 1,2-14+15 ]			
* Pituitary Gland		Hyperplasia	Marked
[ Hyperplasia TGLS = 3-10 ]			
* Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 505

TRT#: 6

SEX: Female

DAY ON TEST: 728

DOSE: 900 PPM

DISP: Terminal Sacrifice

HISTO: 44817

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Nose	* Ovary	* Pancreas
* Parathyroid Gland	Peripheral Nerve	Peritoneum	Pleura
* Salivary Glands	Skeletal Muscle	* Skin	Spinal Cord
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	* Uterus

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Kidney	Nephropathy	Mild
* Liver	Basophilic Focus	
* Lung	Foreign Body	Moderate
	Inflammation	Granulomatous, Moderate
* Mammary Gland	Carcinoma	
[ Carcinoma TGLS = 1-15 ]		
Mesentery	Inflammation	Granulomatous, Mild
	Necrosis	Moderate
[ Inflammation TGLS = 3-14 ]		
[ Necrosis TGLS = 3-14 ]		
* Pituitary Gland	Hyperplasia	Mild
[ Hyperplasia TGLS = 2-10 ]		

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 506

TRT#: 6

SEX: Female

DAY ON TEST: 728

DOSE: 900 PPM

DISP: Terminal Sacrifice

HISTO: 44818

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lung
* Lymph Node, Mesenteric	* Nose	* Ovary	* Pancreas
* Parathyroid Gland	Peritoneum	Pleura	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Thymus
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OBSERVATIONS

* Kidney	Pelvis, Transit Epithe	Mineralization	Minimal
		Nephropathy	Mild
* Liver		Basophilic Focus	
* Mammary Gland		Fibroadenoma	Multiple
[ Fibroadenoma TGLS = 1,2-14+15 ]			
Mesentery		Necrosis	Moderate
[ Necrosis TGLS = 5-16 ]			
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 3-10 ]			
* Uterus		Polyp Stromal	
[ Polyp Stromal TGLS = 4-10 ]			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 507

TRT#: 6

SEX: Female

DAY ON TEST: 642

DOSE: 900 PPM

DISP: Moribund Sacrifice

HISTO: 44819

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Ovary	* Pancreas	* Parathyroid Gland
Peritoneum	Pleura	* Salivary Glands	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Trachea
* Urinary Bladder	* Uterus		

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Eye	Cornea	Inflammation	Suppurative, Moderate
* Kidney		Nephropathy	Mild
* Liver		Leukemia Mononuclear	
* Lung		Carcinoma	Metastatic (Thyroid Gland)
	Interstitium	Fibrosis	Moderate
	Alveolar Epith	Hyperplasia	Moderate
Lymph Node	Deep Cervical	Carcinoma	Metastatic (Thyroid Gland)
[ Carcinoma TGLS = 2-16 ]			
* Nose	Respirat Epith	Degeneration	Hyaline, Minimal
	Nasolacrim Dct	Inflammation	Suppurative, Minimal
* Pituitary Gland		Hyperplasia	Marked
[ Hyperplasia TGLS = 4-10 ]			
* Spleen		Leukemia Mononuclear	
* Thyroid Gland	C Cell	Carcinoma	
[ Carcinoma TGLS = 3-3 ]			
Zymbal's Gland		Carcinoma	
[ Carcinoma TGLS = 1-14+15 ]			

PRIMARY CAUSE OF DEATH - Thyroid Gland C Cell Carcinoma

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Methyl isobutyl ketone  
**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014  
**Time Report Requested:** 22:41:43  
**First Dose M/F:** NA / NA  
**Lab:** BNW

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**ANIMAL ID:** 507

**TRT#:** 6

**SEX:** Female

**DAY ON TEST:** 642

**DOSE:** 900 PPM

**DISP:** Moribund Sacrifice

**HISTO:** 44819

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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CONTRIBUTORY CAUSE OF DEATH

- Zymbal's Gland Carcinoma

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\* PROTOCOL REQUIRED TISSUE



Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 508

TRT#: 6

SEX: Female

DAY ON TEST: 728

DOSE: 900 PPM

DISP: Terminal Sacrifice

HISTO: 44820

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex          | * Adrenal Medulla           | Blood Vessel             | * Bone                     |
| * Bone Marrow             | * Brain                     | * Clitoral Gland         | * Esophagus                |
| * Harderian Gland         | * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic      | * Larynx                    | * Lung                   | * Lymph Node, Mediastinal  |
| * Lymph Node, Mesenteric  | * Nose                      | * Ovary                  | * Pancreas                 |
| * Parathyroid Gland       | Peritoneum                  | Pleura                   | * Salivary Glands          |
| * Skin                    | * Spleen                    | * Stomach, Forestomach   | * Stomach, Glandular       |
| * Thymus                  | * Thyroid Gland             | * Trachea                | * Urinary Bladder          |
| * Uterus                  |                             |                          |                            |

MISSING

- |                         |                          |
|-------------------------|--------------------------|
| * Lymph Node, Bronchial | * Lymph Node, Mandibular |
|-------------------------|--------------------------|

OBSERVATIONS

- |                   |  |  |                                  |
|-------------------|--|--|----------------------------------|
| * Eye             | Lens                                       | Cataract<br>Inflammation   | Moderate<br>Suppurative, Minimal |
|                   | [ Cataract TGLS = 1-13 ]                   |  |                                  |
| * Kidney          |  | Nephropathy  | Minimal                          |
| * Liver           |  | Basophilic Focus<br>Clear Cell Focus<br>Hepatodiaphragmatic Nodule | Marked                           |
|                   | [ Hepatodiaphragmatic Nodule TGLS = 5-16 ] |  |                                  |
| * Mammary Gland   |  | Fibroadenoma   | Multiple                         |
|                   | [ Fibroadenoma TGLS = 2,3-14+15 ]          |  |                                  |
| * Pituitary Gland |  | Cyst   | Moderate                         |
|                   | [ Cyst TGLS = 4-10 ]                       |  |                                  |

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 509

TRT#: 6

SEX: Female

DAY ON TEST: 726

DOSE: 900 PPM

DISP: Moribund Sacrifice

HISTO: 44821

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone Marrow	* Clitoral Gland
* Esophagus	* Eye	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx
* Liver	* Lung	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Ovary	* Pancreas	* Parathyroid Gland
Peripheral Nerve	Peritoneum	Pleura	* Salivary Glands
Skeletal Muscle	* Skin	Spinal Cord	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder	* Uterus	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Cortex		Vacuolization Cytoplasmic	Moderate
* Bone	Cranium	Carcinoma	Metastatic (Pituitary Gland)
[ Carcinoma TGLS = 2-10 ]			
* Brain		Hemorrhage	Moderate
[ Hemorrhage TGLS = 3-1 ]			
* Kidney	Pelvis, Transit Epithe	Mineralization	Minimal
		Nephropathy	Minimal
* Nose	Nasolacrim Dct	Inflammation	Suppurative, Minimal
* Pituitary Gland		Carcinoma	
[ Carcinoma TGLS = 2-10 ]			

PRIMARY CAUSE OF DEATH

- Pituitary Gland Carcinoma

CONTRIBUTORY CAUSE OF DEATH

- Bone Cranium Carcinoma Pituitary Gland

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 510

TRT#: 6

SEX: Female

DAY ON TEST: 674

DOSE: 900 PPM

DISP: Moribund Sacrifice

HISTO: 44822

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lung	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Ovary	* Pancreas	* Parathyroid Gland	Peripheral Nerve
Peritoneum	Pleura	* Salivary Glands	Skeletal Muscle
* Skin	Spinal Cord	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder	* Uterus		

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Brain		Hemorrhage	Marked
		Necrosis	Marked
* Kidney		Nephropathy	Mild
* Larynx	Epiglottis	Metaplasia	Squamous, Mild
* Liver		Basophilic Focus	
* Mammary Gland		Carcinoma	
		Fibroadenoma	Multiple
[ Carcinoma TGLS = 2-15 ]			
[ Fibroadenoma TGLS = 1,4-14+16 ]			
* Nose	Olfactory Epi	Degeneration	Hyaline, Mild
* Pituitary Gland		Adenoma	
		Hemorrhage	Marked
[ Adenoma TGLS = 3-10 ]			

PRIMARY CAUSE OF DEATH

- Brain Hemorrhage

CONTRIBUTORY CAUSE OF DEATH

- Pituitary Gland Adenoma;Pituitary Gland Hemorrhage

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 511

TRT#: 6

SEX: Female

DAY ON TEST: 677

DOSE: 900 PPM

DISP: Moribund Sacrifice

HISTO: 44823

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex           | * Adrenal Medulla         | Blood Vessel                | * Bone                   |
| * Bone Marrow              | * Brain                   | * Clitoral Gland            | * Esophagus              |
| * Eye                      | * Harderian Gland         | * Heart                     | * Intestine Large, Cecum |
| * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic      | * Larynx                    | * Lung                   |
| * Lymph Node, Mediastinal  | * Lymph Node, Mesenteric  | * Mammary Gland             | * Ovary                  |
| * Pancreas                 | * Parathyroid Gland       | Peritoneum                  | Pleura                   |
| * Salivary Glands          | * Skin                    | * Spleen                    | * Stomach, Forestomach   |
| * Stomach, Glandular       | * Thymus                  | * Thyroid Gland             | * Trachea                |
| * Urinary Bladder          |                           |                             |                          |

MISSING

- |                         |                          |
|-------------------------|--------------------------|
| * Lymph Node, Bronchial | * Lymph Node, Mandibular |
|-------------------------|--------------------------|

OBSERVATIONS

- |                               |                |                  |                  |
|-------------------------------|----------------|------------------|------------------|
| * Kidney                      |                | Nephropathy      | Minimal          |
| * Liver                       |                | Basophilic Focus |                  |
| * Nose                        | Respirat Epith | Degeneration     | Hyaline, Minimal |
| * Pituitary Gland             |                | Adenoma          |                  |
| [ Adenoma TGLS = 2-10 ]       |                |                  |                  |
| * Uterus                      |                | Hemorrhage       | Marked           |
| [ Hemorrhage TGLS = 1-14 ]    |                | Polyp Stromal    |                  |
| [ Polyp Stromal TGLS = 1-14 ] |                |                  |                  |

PRIMARY CAUSE OF DEATH - Uterus Hemorrhage  
 CONTRIBUTORY CAUSE OF DEATH - Uterus Polyp Stromal

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 512

TRT#: 6

SEX: Female

DAY ON TEST: 653

DOSE: 900 PPM

DISP: Moribund Sacrifice

HISTO: 44824

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lung	* Lymph Node, Bronchial	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Ovary	* Parathyroid Gland	Peritoneum
* Pituitary Gland	Pleura	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	* Uterus

**MISSING**

\* Lymph Node, Mandibular

**OBSERVATIONS**

* Brain		Hemorrhage	Marked
[ Hemorrhage TGLS = 2-1 ]			
* Kidney		Nephropathy	Minimal
* Larynx		Foreign Body	Marked
* Liver		Basophilic Focus	
[ Hepatodiaphragmatic Nodule TGLS = 4-6 ]		Hepatodiaphragmatic Nodule	Marked
* Mammary Gland		Carcinoma	
[ Carcinoma TGLS = 1-14 ]			
* Nose		Foreign Body	Moderate
		Inflammation	Suppurative, Minimal
* Pancreas	Acinus	Atrophy	Mild

PRIMARY CAUSE OF DEATH

- Brain Hemorrhage

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 513

TRT#: 6

SEX: Female

DAY ON TEST: 653

DOSE: 900 PPM

DISP: Moribund Sacrifice

HISTO: 44825

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex           | * Adrenal Medulla         | Blood Vessel                | * Bone                   |
| * Bone Marrow              | * Brain                   | * Clitoral Gland            | * Esophagus              |
| * Eye                      | * Harderian Gland         | * Heart                     | * Intestine Large, Cecum |
| * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic      | * Kidney                    | * Larynx                 |
| * Lung                     | * Lymph Node, Mediastinal | * Lymph Node, Mesenteric    | * Nose                   |
| * Ovary                    | * Pancreas                | * Parathyroid Gland         | Peritoneum               |
| Pleura                     | * Salivary Glands         | * Skin                      | * Stomach, Forestomach   |
| * Stomach, Glandular       | * Thymus                  | * Trachea                   | * Urinary Bladder        |
| * Uterus                   |                           |                             |                          |

MISSING

- |                         |                          |
|-------------------------|--------------------------|
| * Lymph Node, Bronchial | * Lymph Node, Mandibular |
|-------------------------|--------------------------|

OBSERVATIONS

- |                                       |                      |
|---------------------------------------|----------------------|
| * Liver                               | Basophilic Focus     |
|                                       | Leukemia Mononuclear |
| [ Leukemia Mononuclear TGLS = 3-6 ]   |                      |
| * Mammary Gland                       | Fibroadenoma         |
| [ Fibroadenoma TGLS = 1-14+15+16+17 ] |                      |
| * Pituitary Gland                     | Adenoma              |
| [ Adenoma TGLS = 2-10 ]               |                      |
| * Spleen                              | Leukemia Mononuclear |
| * Thyroid Gland                       | Adenoma              |
|                                       | C Cell               |

PRIMARY CAUSE OF DEATH - Mammary Gland Fibroadenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 514

TRT#: 6

SEX: Female

DAY ON TEST: 621

DOSE: 900 PPM

DISP: Moribund Sacrifice

HISTO: 44826

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Clitoral Gland	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lung	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Nose	* Ovary	* Pancreas
* Parathyroid Gland	Peritoneum	Pleura	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder
* Uterus			

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
-------------------------	--------------------------

OBSERVATIONS

* Adrenal Cortex		Vacuolization Cytoplasmic	Marked
* Brain		Compression	Marked
* Kidney		Nephropathy	Minimal
* Liver		Basophilic Focus	
		Hepatodiaphragmatic Nodule	Marked
		Vacuolization Cytoplasmic	Moderate
[ Hepatodiaphragmatic Nodule TGLS = 4-6 ]			
[ Vacuolization Cytoplasmic TGLS = 3-14 ]			
Mesentery		Necrosis	Moderate
[ Necrosis TGLS = 2-15 ]			
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 1-10 ]			
Tongue	Epithelium	Hyperplasia	Minimal
[ Hyperplasia TGLS = 5-15 ]			

PRIMARY CAUSE OF DEATH - Pituitary Gland Adenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 515

TRT#: 6

SEX: Female

DAY ON TEST: 728

DOSE: 900 PPM

DISP: Terminal Sacrifice

HISTO: 44827

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Liver	* Lung
* Lymph Node, Mesenteric	* Ovary	* Pancreas	* Parathyroid Gland
Peritoneum	Pleura	* Salivary Glands	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder	* Uterus	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
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OBSERVATIONS

* Adrenal Cortex		Vacuolization Cytoplasmic	Mild
* Kidney		Nephropathy	Minimal
* Mammary Gland		Fibroadenoma	
[ Fibroadenoma TGLS = 2-14 ]			
Mesentery		Necrosis	Moderate
[ Necrosis TGLS = 3-15 ]			
* Nose	Respirat Epith	Degeneration	Hyaline, Mild
* Pituitary Gland		Hemorrhage	Moderate
[ Hemorrhage TGLS = 1-10 ]			
* Skin	Subcut Tiss	Fibroma	
[ Fibroma TGLS = 4-16 ]			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 516

TRT#: 6

SEX: Female

DAY ON TEST: 728

DOSE: 900 PPM

DISP: Terminal Sacrifice

HISTO: 44828

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	Ear
* Esophagus	* Eye	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx
* Liver	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Nose	* Ovary	* Pancreas	* Parathyroid Gland
Peritoneum	Pleura	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	* Uterus

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Kidney		Nephropathy	Minimal
* Lung	Alveolar Epith	Hyperplasia	Minimal
		Inflammation	Chronic, Mild
		Necrosis	Moderate
Mesentery			
[ Necrosis TGLS = 2-14 ]			
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 1-10 ]			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 517

TRT#: 6

SEX: Female

DAY ON TEST: 729

DOSE: 900 PPM

DISP: Terminal Sacrifice

HISTO: 44829

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Ovary	* Pancreas
* Parathyroid Gland	Peripheral Nerve	Peritoneum	Pleura
* Salivary Glands	Skeletal Muscle	* Skin	Spinal Cord
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	* Uterus

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Kidney		Nephropathy	Mild
* Liver		Basophilic Focus	
		Clear Cell Focus	
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Minimal
* Nose	Goblet Cell	Hyperplasia	Mild
		Inflammation	Suppurative, Minimal
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 2-10 ]			
Zymbal's Gland		Carcinoma	
[ Carcinoma TGLS = 1-14 ]			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 518

TRT#: 6

DOSE: 900 PPM

SEX: Female

DISP: Moribund Sacrifice

DAY ON TEST: 726

HISTO: 44830

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Larynx	* Lymph Node, Bronchial
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Ovary	* Pancreas	* Parathyroid Gland	Peritoneum
* Salivary Glands	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder	* Uterus		

OBSERVATIONS

* Brain		Compression	Marked
		Hemorrhage	Moderate
* Liver		Basophilic Focus	
		Hepatodiaphragmatic Nodule	Marked
[ Hepatodiaphragmatic Nodule TGLS = 2-6 ]			
* Lung	Interstitial	Fibrosis	Mild
		Inflammation	Chronic, Minimal
[ Fibrosis TGLS = 3-14 ]			
* Nose	Respirat Epith	Degeneration	Hyaline, Moderate
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 1-10 ]			
Pleura		Fibrosis	Minimal
[ Fibrosis TGLS = 3-14 ]			

PRIMARY CAUSE OF DEATH

- Pituitary Gland Adenoma

CONTRIBUTORY CAUSE OF DEATH

- Brain Hemorrhage

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 519

TRT#: 6

DOSE: 900 PPM

SEX: Female

DISP: Terminal Sacrifice

DAY ON TEST: 729

HISTO: 44831

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lung	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Nose	* Ovary
* Pancreas	* Parathyroid Gland	Peritoneum	* Pituitary Gland
Pleura	* Salivary Glands	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Cortex	Vacuolization Cytoplasmic	Moderate
* Kidney	Nephropathy	Minimal
* Liver	Eosinophilic Focus	
	Hepatodiaphragmatic Nodule	Marked
	Leukemia Mononuclear	
	Vacuolization Cytoplasmic	Mild
[ Hepatodiaphragmatic Nodule TGLS = 2-14 ]		
[ Leukemia Mononuclear TGLS = 1-6+14 ]		
[ Vacuolization Cytoplasmic TGLS = 3-7 ]		
* Spleen	Leukemia Mononuclear	
* Uterus	Polyp Stromal	
[ Polyp Stromal TGLS = 4-10 ]		

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 520

TRT#: 6

SEX: Female

DAY ON TEST: 616

DOSE: 900 PPM

DISP: Moribund Sacrifice

HISTO: 44832

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	Ear
* Esophagus	* Eye	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx
* Lung	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Nose
* Pancreas	* Parathyroid Gland	Peritoneum	* Pituitary Gland
Pleura	* Salivary Glands	* Skin	* Spleen
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder	* Uterus		

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Kidney	Pelvis, Transit Epithe	Mineralization	Minimal
		Nephropathy	Minimal
* Liver		Basophilic Focus	
* Mammary Gland		Fibroadenoma	
[ Fibroadenoma TGLS = 1-16+17+18+19 ]			
Mesentery		Necrosis	Moderate
[ Necrosis TGLS = 3-14 ]			
* Ovary		Cyst	Marked
[ Cyst TGLS = 2-9 ]			
* Stomach, Forestomach		Hyperplasia	Squamous, Mild
[ Hyperplasia TGLS = 4-15 ]			

PRIMARY CAUSE OF DEATH - Mammary Gland Fibroadenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 521

TRT#: 6

SEX: Female

DAY ON TEST: 729

DOSE: 900 PPM

DISP: Terminal Sacrifice

HISTO: 44833

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lung	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Nose	* Ovary	* Pancreas
* Parathyroid Gland	Peritoneum	Pleura	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

**MISSING**

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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**OBSERVATIONS**

* Clitoral Gland		Cyst	Moderate
* Kidney		Nephropathy	Minimal
* Liver		Basophilic Focus	
		Clear Cell Focus	
* Mammary Gland		Fibroadenoma	
[ Fibroadenoma TGLS = 1-14+15 ]			
Mesentery		Necrosis	Moderate
[ Necrosis TGLS = 3-16 ]			
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 2-10 ]			
Tongue	Epithelium	Hyperplasia	Moderate
[ Hyperplasia TGLS = 5-16 ]			
* Uterus		Polyp Stromal	
[ Polyp Stromal TGLS = 4-10 ]			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 522

TRT#: 6

SEX: Female

DAY ON TEST: 728

DOSE: 900 PPM

DISP: Terminal Sacrifice

HISTO: 44834

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Ovary	* Pancreas	* Parathyroid Gland	Peritoneum
Pleura	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Trachea
* Urinary Bladder	* Uterus		

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Clitoral Gland [ Carcinoma TGLS = 2-15 ]	Carcinoma	
* Kidney	Nephropathy	Minimal
* Liver [ Vacuolization Cytoplasmic TGLS = 3-6 ]	Basophilic Focus Vacuolization Cytoplasmic	Mild
* Lung	Carcinoma	Metastatic (Clitoral Gland)
* Mammary Gland [ Fibroadenoma TGLS = 1-14 ]	Fibroadenoma	
Mesentery [ Necrosis TGLS = 4-16 ]	Necrosis	Moderate
* Nose	Inflammation	Suppurative, Minimal
* Pituitary Gland	Hyperplasia	Moderate
* Thyroid Gland	Follicular Cel Adenoma	

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 523

TRT#: 6

SEX: Female

DAY ON TEST: 702

DOSE: 900 PPM

DISP: Moribund Sacrifice

HISTO: 44835

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Mammary Gland	* Nose
* Ovary	* Pancreas	* Parathyroid Gland	Peritoneum
* Pituitary Gland	Pleura	* Salivary Glands	* Skin
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Brain		Hemorrhage	Marked
[ Hemorrhage TGLS = 9-1 ]			
* Kidney		Nephropathy	Minimal
* Liver		Leukemia Mononuclear	
	Hepatocyte	Regeneration	Marked
[ Leukemia Mononuclear TGLS = 4-6+14+15 ]			
[ Regeneration TGLS = 5,6,7-6+14+15 ]			
* Lung		Leukemia Mononuclear	
* Lymph Node, Mediastinal		Leukemia Mononuclear	
* Lymph Node, Mesenteric		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 8-8 ]			
* Spleen		Hemorrhage	Marked
		Leukemia Mononuclear	
[ Hemorrhage TGLS = 2,3-15+16 ]			
[ Leukemia Mononuclear TGLS = 1,2,3-6+15+16 ]			
* Stomach, Forestomach		Hyperplasia	Squamous, Moderate
* Uterus	Endometrium	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH - Spleen Leukemia Mononuclear

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 97006-01  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Methyl isobutyl ketone  
**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014  
**Time Report Requested:** 22:41:43  
**First Dose M/F:** NA / NA  
**Lab:** BNW

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**ANIMAL ID:** 523

**TRT#:** 6

**SEX:** Female

**DAY ON TEST:** 702

**DOSE:** 900 PPM

**DISP:** Moribund Sacrifice

**HISTO:** 44835

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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CONTRIBUTORY CAUSE OF DEATH

- Brain Hemorrhage;Spleen Hemorrhage

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 524

TRT#: 6

SEX: Female

DAY ON TEST: 509

DOSE: 900 PPM

DISP: Natural Death

HISTO: 44836

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Harderian Gland	* Heart	* Islets, Pancreatic	* Larynx
* Lymph Node, Mesenteric	* Mammary Gland	* Nose	* Pancreas
Peritoneum	* Pituitary Gland	Pleura	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thyroid Gland	* Trachea	* Urinary Bladder	* Uterus

MISSING

* Lymph Node, Mandibular	* Parathyroid Gland
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AUTO PRECLUDES DIAG.

* Eye	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	

OBSERVATIONS

* Kidney	Cystadenocarcinoma	Metastatic (Ovary)
* Liver	Necrosis	Mild
[ Necrosis TGLS = 3-6 ]		
* Lung	Cystadenocarcinoma	Metastatic (Ovary)
	Inflammation	Chronic, Moderate
[ Cystadenocarcinoma TGLS = 2-4+5+14+15+16 ]		
* Lymph Node, Bronchial	Cystadenocarcinoma	Metastatic (Ovary)
* Lymph Node, Mediastinal	Cystadenocarcinoma	Metastatic (Ovary)
[ Cystadenocarcinoma TGLS = 5-3 ]		
* Ovary	Cystadenocarcinoma	Metastatic (Ovary)
	Cystadenocarcinoma	
Note: Diff Dx teratoma		
Note: squamous metaplasia of cuboidal epithelium in primary tumor in ovary and in lung metastasis. Diff dx teratoma		
[ Cystadenocarcinoma TGLS = 4-9+17 ]		
Skeletal Muscle	Cystadenocarcinoma	Metastatic (Ovary)
[ Cystadenocarcinoma TGLS = 6-18 ]		
* Thymus	Cystadenocarcinoma	Metastatic (Ovary)

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Methyl isobutyl ketone  
**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014  
**Time Report Requested:** 22:41:43  
**First Dose M/F:** NA / NA  
**Lab:** BNW

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**ANIMAL ID:** 524

**TRT#:** 6

**SEX:** Female

**DAY ON TEST:** 509

**DOSE:** 900 PPM

**DISP:** Natural Death

**HISTO:** 44836

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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PRIMARY CAUSE OF DEATH

- Ovary Cystadenocarcinoma

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 525

TRT#: 6

SEX: Female

DAY ON TEST: 714

DOSE: 900 PPM

DISP: Natural Death

HISTO: 44837

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Clitoral Gland	* Esophagus	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx
* Liver	* Lung	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Nose	* Ovary	* Pancreas
* Parathyroid Gland	Peritoneum	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	* Uterus

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Medulla		Pheochromocytoma Benign	
* Brain		Compression	Marked
		Hemorrhage	Marked
* Eye	Lens	Cataract	Moderate
[ Cataract TGLS = 1-13 ]			
* Kidney	Papilla	Mineralization	Minimal
		Nephropathy	Minimal
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 2-10 ]			
Pleura		Fibrosis	Minimal

PRIMARY CAUSE OF DEATH

- Brain Hemorrhage

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 526

TRT#: 6

SEX: Female

DAY ON TEST: 728

DOSE: 900 PPM

DISP: Terminal Sacrifice

HISTO: 44838

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lung
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Ovary	Oviduct
* Pancreas	* Parathyroid Gland	Peritoneum	Pleura
* Salivary Glands	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder	* Uterus		

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Kidney	Nephropathy	Mild
* Liver	Hepatocellular Adenoma	
[ Hepatocellular Adenoma TGLS = 3-14 ]		
* Mammary Gland	Fibroadenoma	
[ Fibroadenoma TGLS = 2-15+16 ]		
Mesentery	Necrosis	Moderate
[ Necrosis TGLS = 4-17 ]		
* Nose	Foreign Body	Moderate
	Inflammation	Suppurative, Minimal
* Pituitary Gland	Adenoma	
[ Adenoma TGLS = 1-10 ]		

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 527

TRT#: 6

SEX: Female

DAY ON TEST: 637

DOSE: 900 PPM

DISP: Moribund Sacrifice

HISTO: 44839

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Mammary Gland	* Nose
* Pancreas	* Parathyroid Gland	Peritoneum	Pleura
* Salivary Glands	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Cortex	Vacuolization Cytoplasmic	Mild
* Kidney	Leukemia Mononuclear	
	Nephropathy	Minimal
* Liver	Leukemia Mononuclear	
	Vacuolization Cytoplasmic	Moderate
[ Leukemia Mononuclear TGLS = 5-6 ]		
* Lung	Leukemia Mononuclear	
* Lymph Node, Mediastinal	Leukemia Mononuclear	
* Lymph Node, Mesenteric	Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 6-8 ]		
* Ovary	Cyst	Marked
[ Cyst TGLS = 7-9 ]		
* Pituitary Gland	Adenoma	
	Cyst	Marked
[ Adenoma TGLS = 1-10 ]		
[ Cyst TGLS = 1-10 ]		
* Spleen	Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 3,4-14 ]		
* Uterus	Polyp Stromal	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Methyl isobutyl ketone  
**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014  
**Time Report Requested:** 22:41:43  
**First Dose M/F:** NA / NA  
**Lab:** BNW

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<b>ANIMAL ID:</b> 527	<b>TRT#:</b> 6	<b>SEX:</b> Female	<b>DAY ON TEST:</b> 637
	<b>DOSE:</b> 900 PPM	<b>DISP:</b> Moribund Sacrifice	<b>HISTO:</b> 44839

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Polyp Stromal TGLS = 2-10 ]

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**PRIMARY CAUSE OF DEATH** - Spleen Leukemia Mononuclear

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 528

TRT#: 6

SEX: Female

DAY ON TEST: 546

DOSE: 900 PPM

DISP: Moribund Sacrifice

HISTO: 44840

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Larynx	* Liver
* Lung	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Pancreas
* Parathyroid Gland	Peritoneum	Pleura	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder
* Uterus			

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Brain		Compression	Marked
		Hemorrhage	Moderate
		Fibroadenoma	
* Mammary Gland			
[ Fibroadenoma TGLS = 2-14 ]			
* Nose	Respirat Epith	Degeneration	Hyaline, Mild
* Ovary		Cyst	Moderate
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 1-10 ]			

PRIMARY CAUSE OF DEATH

- Pituitary Gland Adenoma

CONTRIBUTORY CAUSE OF DEATH

- Brain Hemorrhage

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 529

TRT#: 6

SEX: Female

DAY ON TEST: 729

DOSE: 900 PPM

DISP: Terminal Sacrifice

HISTO: 44841

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Blood Vessel	* Bone	* Bone Marrow	* Brain
* Clitoral Gland	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Nose
* Ovary	* Pancreas	* Parathyroid Gland	Peritoneum
* Pituitary Gland	Pleura	* Salivary Glands	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Cortex		Vacuolization Cytoplasmic	Minimal
* Adrenal Medulla		Pheochromocytoma Benign	
* Kidney		Nephropathy	Minimal
* Liver		Basophilic Focus	
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Minimal
* Mammary Gland		Fibroadenoma	Multiple
	[ Fibroadenoma TGLS = 2,3-14+16 ]		
* Skin		Squamous Cell Papilloma	
	[ Squamous Cell Papilloma TGLS = 1-15 ]		
* Uterus		Polyp Stromal	

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 530

TRT#: 6

DOSE: 900 PPM

SEX: Female

DISP: Natural Death

DAY ON TEST: 684

HISTO: 44842

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lymph Node, Mesenteric	* Nose	* Ovary
* Pancreas	* Parathyroid Gland	Peripheral Nerve	Peritoneum
Pleura	* Salivary Glands	Skeletal Muscle	* Skin
Spinal Cord	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	* Uterus

MISSING

\* Lymph Node, Mandibular

AUTO PRECLUDES DIAG.

\* Intestine Small, Ileum

OBSERVATIONS

* Brain	Hemorrhage	Minimal
[ Hemorrhage TGLS = 2-14 ]		
* Kidney	Leukemia Mononuclear	
	Nephropathy	Minimal
* Liver	Hepatodiaphragmatic Nodule	Marked
[ Hepatodiaphragmatic Nodule TGLS = 5-14 ]	Leukemia Mononuclear	
* Lung	Leukemia Mononuclear	
* Lymph Node, Bronchial	Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-15 ]		
* Lymph Node, Mediastinal	Leukemia Mononuclear	
* Mammary Gland	Fibroadenoma	
[ Fibroadenoma TGLS = 6-16 ]		
* Pituitary Gland	Adenoma	
[ Adenoma TGLS = 3-10 ]	Leukemia Mononuclear	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01

**Test Type:** CHRONIC

**Route:** RESPIRATORY EXPOSURE WHOLE BODY

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Methyl isobutyl ketone

**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014

**Time Report Requested:** 22:41:43

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

**Lab:** BNW

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**ANIMAL ID:** 530

**TRT#:** 6

**SEX:** Female

**DAY ON TEST:** 684

**DOSE:** 900 PPM

**DISP:** Natural Death

**HISTO:** 44842

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Leukemia Mononuclear TGLS = 3-10 ]

\* Spleen

Leukemia Mononuclear

[ Leukemia Mononuclear TGLS = 4-15 ]

Tongue

Epithelium

Hyperplasia

Mild

[ Hyperplasia TGLS = 7-14 ]

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PRIMARY CAUSE OF DEATH

- Spleen Leukemia Mononuclear

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 531

TRT#: 6

SEX: Female

DAY ON TEST: 728

DOSE: 900 PPM

DISP: Terminal Sacrifice

HISTO: 44843

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lung	* Lymph Node, Bronchial	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Nose	* Ovary	* Pancreas
* Parathyroid Gland	Peritoneum	Pleura	* Salivary Glands
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	* Uterus
Zymbal's Gland			

**MISSING**

\* Lymph Node, Mandibular

**INSUFFICIENT TISSUE**

\* Eye

**OBSERVATIONS**

* Heart		Cardiomyopathy	Mild
* Kidney	Papilla	Mineralization	Minimal
	Pelvis, Transit Epithe	Mineralization	Minimal
		Nephropathy	Mild
* Liver		Basophilic Focus	
		Clear Cell Focus	
		Hepatodiaphragmatic Nodule	Marked
	[ Hepatodiaphragmatic Nodule TGLS = 4-6 ]		
* Mammary Gland		Fibroadenoma	
	[ Fibroadenoma TGLS = 1-14 ]		
* Pituitary Gland		Hyperplasia	Moderate
	[ Hyperplasia TGLS = 2-10 ]		
* Spleen		Accessory Spleen	
	[ Accessory Spleen TGLS = 3-6 ]		

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Methyl isobutyl ketone  
**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014  
**Time Report Requested:** 22:41:43  
**First Dose M/F:** NA / NA  
**Lab:** BNW

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**ANIMAL ID:** 531

**TRT#:** 6

**SEX:** Female

**DAY ON TEST:** 728

**DOSE:** 900 PPM

**DISP:** Terminal Sacrifice

**HISTO:** 44843

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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: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 532

TRT#: 6

DOSE: 900 PPM

SEX: Female

DISP: Terminal Sacrifice

DAY ON TEST: 729

HISTO: 44844

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Larynx	* Lung
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland
Peritoneum	* Pituitary Gland	Pleura	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder
* Uterus			

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Cortex		Hyperplasia	Mild
* Liver		Basophilic Focus	
* Mammary Gland		Carcinoma	
[ Carcinoma TGLS = 1-14 ]			
Mesentery		Necrosis	Moderate
[ Necrosis TGLS = 3-15 ]			
* Nose	Respirat Epith	Degeneration	Hyaline, Moderate
* Ovary		Cyst	Minimal
[ Cyst TGLS = 2-9 ]			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 533

TRT#: 6

SEX: Female

DAY ON TEST: 582

DOSE: 900 PPM

DISP: Moribund Sacrifice

HISTO: 44845

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Liver	* Lung
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Ovary	* Pancreas	* Parathyroid Gland	Peritoneum
Pleura	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Trachea
* Urinary Bladder	* Uterus		

**MISSING**

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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**OBSERVATIONS**

* Brain	Compression	Marked
	Hemorrhage	Marked
* Kidney	Nephropathy	Moderate
[ Nephropathy TGLS = 4-7 ]		
* Pituitary Gland	Adenoma	
[ Adenoma TGLS = 3-10 ]		
* Thyroid Gland	C Cell	Hyperplasia
		Marked

PRIMARY CAUSE OF DEATH

- Brain Hemorrhage

CONTRIBUTORY CAUSE OF DEATH

- Pituitary Gland Adenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 534

TRT#: 6

SEX: Female

DAY ON TEST: 729

DOSE: 900 PPM

DISP: Terminal Sacrifice

HISTO: 44846

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Liver	* Lung
* Lymph Node, Mesenteric	* Nose	* Ovary	* Pancreas
* Parathyroid Gland	Peritoneum	Pleura	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder
* Uterus			

**MISSING**

* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
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**OBSERVATIONS**

* Adrenal Cortex [ Vacuolization Cytoplasmic TGLS = 6-7 ]	Vacuolization Cytoplasmic	Marked
* Kidney	Nephropathy	Moderate
* Mammary Gland [ Fibroadenoma TGLS = 1,2-14+15 ]	Fibroadenoma	Multiple
Mesentery [ Necrosis TGLS = 3,5-16+17 ]	Necrosis	Moderate
* Pituitary Gland [ Hyperplasia TGLS = 4-10 ]	Hyperplasia	Marked

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 535

TRT#: 6

SEX: Female

DAY ON TEST: 729

DOSE: 900 PPM

DISP: Terminal Sacrifice

HISTO: 44847

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Liver
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Nose	* Ovary
* Pancreas	Peritoneum	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	* Uterus

**MISSING**

* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Parathyroid Gland
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**OBSERVATIONS**

* Kidney		Nephropathy	Minimal
* Lung	Alveolus	Infiltration Cellular Inflammation	Histiocyte, Mild Chronic, Mild
[ Inflammation TGLS = 3-4 ]			
* Mammary Gland		Fibroadenoma	
[ Fibroadenoma TGLS = 1-14 ]			
* Pituitary Gland		Hyperplasia	Marked
[ Hyperplasia TGLS = 2-10 ]			
Pleura		Fibrosis	Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 536

TRT#: 6

SEX: Female

DAY ON TEST: 729

DOSE: 900 PPM

DISP: Terminal Sacrifice

HISTO: 44848

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lung
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Ovary	* Pancreas	* Parathyroid Gland	Peritoneum
Pleura	* Salivary Glands	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder	* Uterus		

**MISSING**

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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**OBSERVATIONS**

* Kidney	Nephropathy	Minimal
* Liver	Clear Cell Focus	
[ Clear Cell Focus TGLS = 1-6 ]		
* Pituitary Gland	Adenoma	
[ Adenoma TGLS = 2-10 ]		
* Spleen	Leukemia Mononuclear	

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 537

TRT#: 6

SEX: Female

DAY ON TEST: 642

DOSE: 900 PPM

DISP: Moribund Sacrifice

HISTO: 44849

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Clitoral Gland	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lung	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Nose	* Pancreas	* Parathyroid Gland
Peritoneum	Pleura	* Salivary Glands	* Skin
* Spleen	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder	* Uterus	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Cortex		Vacuolization Cytoplasmic	Mild
* Brain		Compression	Marked
		Gliosis	Moderate
* Kidney	Pelvis, Transit Epithe	Mineralization	Minimal
		Nephropathy	Mild
* Liver		Vacuolization Cytoplasmic	Marked
		[ Vacuolization Cytoplasmic TGLS = 3-6 ]	
* Ovary		Cyst	Marked
		[ Cyst TGLS = 2-9 ]	
* Pituitary Gland		Adenoma	
		[ Adenoma TGLS = 1-10 ]	
* Stomach, Forestomach		Ulcer	Marked

PRIMARY CAUSE OF DEATH - Pituitary Gland Adenoma  
 CONTRIBUTORY CAUSE OF DEATH - Stomach;Forestomach Ulcer

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 538

TRT#: 6

SEX: Female

DAY ON TEST: 728

DOSE: 900 PPM

DISP: Terminal Sacrifice

HISTO: 44850

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Lung	* Lymph Node, Bronchial
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Nose	* Ovary
* Pancreas	* Parathyroid Gland	Peritoneum	Pleura
* Salivary Glands	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder	* Uterus		

**MISSING**

\* Lymph Node, Mandibular

**OBSERVATIONS**

* Kidney	Pelvis, Transit Epithe	Mineralization Nephropathy	Mild Mild
[ Nephropathy TGLS = 3-7 ]			
* Larynx	Epiglottis	Hyperplasia Inflammation	Mild Suppurative, Mild
	Epiglottis	Metaplasia	Squamous, Minimal
* Liver		Basophilic Focus	
* Mammary Gland		Fibroadenoma	
[ Fibroadenoma TGLS = 1-14 ]			
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 2-10 ]			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 539

TRT#: 6

DOSE: 900 PPM

SEX: Female

DISP: Terminal Sacrifice

DAY ON TEST: 728

HISTO: 44851

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Liver	* Lung
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Ovary	* Pancreas
* Parathyroid Gland	Peritoneum	Pleura	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Cortex		Vacuolization Cytoplasmic	Moderate
* Kidney		Nephropathy	Mild
* Mammary Gland		Fibroadenoma	
[ Fibroadenoma TGLS = 4-14 ]			
Mesentery		Necrosis	Moderate
[ Necrosis TGLS = 5-15 ]			
* Nose	Respirat Epith	Hyperplasia	Moderate
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 1-10 ]			
* Uterus	Endometrium	Hyperplasia	Marked
[ Polyp Stromal TGLS = 2,3-10 ]	Bilateral	Polyp Stromal	

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 540

TRT#: 6

SEX: Female

DAY ON TEST: 590

DOSE: 900 PPM

DISP: Moribund Sacrifice

HISTO: 44852

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lung	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Nose	* Ovary	* Pancreas
* Parathyroid Gland	Peritoneum	Pleura	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder
* Uterus			

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Brain	Compression	Marked
	Hemorrhage	Moderate
* Kidney	Nephropathy	Mild
* Liver	Basophilic Focus	
	Clear Cell Focus	
	Hepatodiaphragmatic Nodule	Marked
[ Clear Cell Focus TGLS = 6,7-14 ]		
[ Hepatodiaphragmatic Nodule TGLS = 7-14 ]		
* Mammary Gland	Fibroadenoma	
[ Fibroadenoma TGLS = 1-17 ]		
Mesentery	Necrosis	Moderate
[ Necrosis TGLS = 5-16 ]		
* Pituitary Gland	Adenoma	
[ Adenoma TGLS = 2-10 ]		

PRIMARY CAUSE OF DEATH

- Pituitary Gland Adenoma

CONTRIBUTORY CAUSE OF DEATH

- Brain Hemorrhage

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 541

TRT#: 6

DOSE: 900 PPM

SEX: Female

DISP: Terminal Sacrifice

DAY ON TEST: 727

HISTO: 44853

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Bronchial	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Nose	* Ovary	* Pancreas	* Parathyroid Gland
Peritoneum	* Salivary Glands	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Trachea	* Urinary Bladder
* Uterus			

MISSING

\* Lymph Node, Mandibular

OBSERVATIONS

* Eye [ Cataract TGLS = 2-13 ]	Lens	Cataract	Marked
* Kidney		Nephropathy	Minimal
* Larynx		Foreign Body	Marked
* Liver		Basophilic Focus	
		Clear Cell Focus	
		Leukemia Mononuclear	
	Hepatocyte	Regeneration	Mild
[ Regeneration TGLS = 4-6 ]			
* Lung	Bronchiole	Hyperplasia	Moderate
		Inflammation	Chronic, Mild
* Mammary Gland		Fibroadenoma	
[ Fibroadenoma TGLS = 1-14 ]			
* Pituitary Gland		Cyst	Marked
[ Cyst TGLS = 3-10 ]			
Pleura		Inflammation	Chronic, Minimal
* Spleen		Leukemia Mononuclear	
* Thyroid Gland	C Cell	Adenoma	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Methyl isobutyl ketone  
**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014  
**Time Report Requested:** 22:41:43  
**First Dose M/F:** NA / NA  
**Lab:** BNW

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**ANIMAL ID:** 541

**TRT#:** 6

**SEX:** Female

**DAY ON TEST:** 727

**DOSE:** 900 PPM

**DISP:** Terminal Sacrifice

**HISTO:** 44853

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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: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 542

TRT#: 6

SEX: Female

DAY ON TEST: 636

DOSE: 900 PPM

DISP: Moribund Sacrifice

HISTO: 44854

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Ovary
* Pancreas	* Parathyroid Gland	Peritoneum	Pleura
* Salivary Glands	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder	* Uterus		

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Cortex		Vacuolization Cytoplasmic	Marked
[ Vacuolization Cytoplasmic TGLS = 4-7 ]			
* Heart		Cardiomyopathy	Moderate
* Kidney	Papilla	Mineralization	Minimal
	Pelvis, Transit Epithe	Mineralization	Minimal
		Nephropathy	Marked
[ Nephropathy TGLS = 3-7 ]			
* Liver		Necrosis	Marked
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic, Mild
	Alveolus	Pigmentation	Mild
* Mammary Gland		Fibroadenoma	Multiple
[ Fibroadenoma TGLS = 1,5-14+15+16 ]			
* Nose		Inflammation	Suppurative, Minimal
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 2-10 ]			

PRIMARY CAUSE OF DEATH - Pituitary Gland Adenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 543

TRT#: 6

SEX: Female

DAY ON TEST: 614

DOSE: 900 PPM

DISP: Moribund Sacrifice

HISTO: 44855

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lung	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Nose	* Pancreas	* Parathyroid Gland
Peritoneum	Pleura	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	* Uterus

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Brain	Compression	Marked
* Kidney	Nephropathy	Minimal
* Liver	Basophilic Focus	
	Clear Cell Focus	
[ Clear Cell Focus TGLS = 5-6 ]		
* Mammary Gland	Fibroadenoma	
[ Fibroadenoma TGLS = 2-14 ]		
* Ovary	Cyst	Marked
[ Cyst TGLS = 4-9 ]		
* Pituitary Gland	Adenoma	
[ Adenoma TGLS = 3-10 ]		

PRIMARY CAUSE OF DEATH

- Pituitary Gland Adenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 544

TRT#: 6

SEX: Female

DAY ON TEST: 728

DOSE: 900 PPM

DISP: Terminal Sacrifice

HISTO: 44856

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Larynx	* Lung
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Ovary	* Pancreas
* Parathyroid Gland	Peritoneum	Pleura	* Salivary Glands
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	* Uterus

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Cortex		Vacuolization Cytoplasmic	Moderate
* Liver		Basophilic Focus	
		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 4-6 ]			
* Mammary Gland		Carcinoma	
[ Carcinoma TGLS = 1,2-14 ]			
* Nose	Respirat Epith	Degeneration	Hyaline, Mild
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 3-10 ]			
* Spleen		Leukemia Mononuclear	

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 545

TRT#: 6

SEX: Female

DAY ON TEST: 729

DOSE: 900 PPM

DISP: Terminal Sacrifice

HISTO: 44857

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Larynx	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Ovary	* Pancreas	* Parathyroid Gland
Peripheral Nerve	Peritoneum	* Pituitary Gland	Pleura
* Salivary Glands	Skeletal Muscle	* Skin	Spinal Cord
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	* Uterus

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Medulla [ Pheochromocytoma Malignant TGLS = 1-7 ]		Pheochromocytoma Malignant	
* Liver		Basophilic Focus	
* Lung		Pheochromocytoma Malignant	Metastatic (Adrenal Medulla)
* Mammary Gland [ Fibroadenoma TGLS = 2-14+15+16 ]		Fibroadenoma	
* Nose	Respirat Epith	Degeneration	Hyaline, Mild
	Goblet Cell	Hyperplasia	Mild
	Respirat Epith	Hyperplasia	Mild
		Inflammation	Suppurative, Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 546

TRT#: 6

SEX: Female

DAY ON TEST: 728

DOSE: 900 PPM

DISP: Terminal Sacrifice

HISTO: 44858

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Larynx
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Ovary	* Pancreas	* Parathyroid Gland	Peritoneum
Pleura	* Salivary Glands	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder	* Uterus		

**MISSING**

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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**OBSERVATIONS**

* Liver		Basophilic Focus	
		Leukemia Mononuclear	
* Lung	Bronchiole	Hyperplasia	Mild
* Pituitary Gland		Hyperplasia	Mild
[ Hyperplasia TGLS = 1-10 ]			
* Spleen		Leukemia Mononuclear	

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 547

TRT#: 6

SEX: Female

DAY ON TEST: 513

DOSE: 900 PPM

DISP: Moribund Sacrifice

HISTO: 44859

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Clitoral Gland	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Liver	* Lung	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Nose	* Ovary
* Pancreas	* Parathyroid Gland	Peritoneum	Pleura
* Salivary Glands	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder	* Uterus		

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Cortex	Vacuolization Cytoplasmic	Mild
* Brain	Compression	Marked
* Kidney	Nephropathy	Minimal
Mesentery	Necrosis	Moderate
[ Necrosis TGLS = 2-14 ]		
* Pituitary Gland	Adenoma	
[ Adenoma TGLS = 1-10 ]		

PRIMARY CAUSE OF DEATH

- Pituitary Gland Adenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 548

TRT#: 6

SEX: Female

DAY ON TEST: 489

DOSE: 900 PPM

DISP: Moribund Sacrifice

HISTO: 44860

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* 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	* Larynx	* Liver	* Lung
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Ovary	* Pancreas	* Parathyroid Gland	Peritoneum
* Pituitary Gland	Pleura	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	* Uterus

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Eye	Inflammation	Suppurative, Marked
* Harderian Gland	Sarcoma	
[ Sarcoma TGLS = 2-13 ]		
Skeletal Muscle	Sarcoma	
Note: primary site not known, apparently retroorbital/lingual skeletal muscle.		
[ Sarcoma TGLS = 1-14 ]		

PRIMARY CAUSE OF DEATH

- Harderian Gland Sarcoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 549

TRT#: 6

DOSE: 900 PPM

SEX: Female

DISP: Moribund Sacrifice

DAY ON TEST: 643

HISTO: 44861

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lung
* Lymph Node, Mediastinal	* Nose	* Ovary	* Pancreas
* Parathyroid Gland	Peritoneum	Pleura	* Salivary Glands
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	* Uterus

MISSING

\* Lymph Node, Bronchial

OBSERVATIONS

* Kidney		Leukemia Mononuclear Nephropathy	Minimal
* Liver		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 4-6 ]			
Lymph Node	Pancreatic	Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 7-14 ]			
* Lymph Node, Mandibular		Leukemia Mononuclear	
* Lymph Node, Mesenteric		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 6-8 ]			
* Mammary Gland		Fibroadenoma	
[ Fibroadenoma TGLS = 1-15 ]			
* Pituitary Gland		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 3-10 ]			
* Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 5-14 ]			

PRIMARY CAUSE OF DEATH - Spleen Leukemia Mononuclear

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 550

TRT#: 6

SEX: Female

DAY ON TEST: 728

DOSE: 900 PPM

DISP: Terminal Sacrifice

HISTO: 44862

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lung
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Ovary	* Pancreas	* Parathyroid Gland	Peritoneum
Pleura	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

**MISSING**

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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**OBSERVATIONS**

* Kidney	Nephropathy	Mild
* Liver	Clear Cell Focus	
* Pituitary Gland	Cyst	Mild
* Uterus	Endometrium Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 701

TRT#: 8

SEX: Female

DAY ON TEST: 726

DOSE: 1800 PPM

DISP: Moribund Sacrifice

HISTO: 44713

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Larynx	* Liver	* Lung	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Nose	* Pancreas	* Parathyroid Gland
Peritoneum	Pleura	* Salivary Glands	* Skin
* Spleen	* Stomach, Glandular	* Thyroid Gland	* Trachea
* Urinary Bladder	* Uterus		

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Thymus
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OBSERVATIONS

* Brain	Compression	Marked
	Hemorrhage	Moderate
* Islets, Pancreatic	Hyperplasia	Marked
* Kidney	Nephropathy	Mild
* Mammary Gland	Fibroadenoma	
[ Fibroadenoma TGLS = 1-14 ]		
* Ovary	Cyst	Marked
[ Cyst TGLS = 4-9 ]		
* Pituitary Gland	Adenoma	
[ Adenoma TGLS = 3-10 ]		
* Stomach, Forestomach	Ulcer	Marked
[ Ulcer TGLS = 5-10 ]		

PRIMARY CAUSE OF DEATH - Stomach, Forestomach Ulcer

CONTRIBUTORY CAUSE OF DEATH - Pituitary Gland Adenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 702

TRT#: 8

SEX: Female

DAY ON TEST: 729

DOSE: 1800 PPM

DISP: Terminal Sacrifice

HISTO: 44714

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex          | * Adrenal Medulla           | Blood Vessel             | * Bone                     |
| * Bone Marrow             | * Brain                     | * Clitoral Gland         | * Esophagus                |
| * Harderian Gland         | * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic      | * Larynx                    | * Lymph Node, Bronchial  | * Lymph Node, Mediastinal  |
| * Lymph Node, Mesenteric  | * Mammary Gland             | * Nose                   | * Ovary                    |
| * Pancreas                | Peritoneum                  | Pleura                   | * Salivary Glands          |
| * Skin                    | * Spleen                    | * Stomach, Forestomach   | * Stomach, Glandular       |
| * Thymus                  | * Thyroid Gland             | * Trachea                | * Urinary Bladder          |
| * Uterus                  |                             |                          |                            |

MISSING

- |                          |                     |
|--------------------------|---------------------|
| * Lymph Node, Mandibular | * Parathyroid Gland |
|--------------------------|---------------------|

OBSERVATIONS

- |                                 |      |                  |                  |
|---------------------------------|------|------------------|------------------|
| * Eye                           | Lens | Cataract         | Mild             |
| * Kidney                        |      | Nephropathy      | Mild             |
| * Liver                         |      | Clear Cell Focus |                  |
| [ Clear Cell Focus TGLS = 2-6 ] |      |                  |                  |
| * Lung                          |      | Inflammation     | Chronic, Minimal |
| * Pituitary Gland               |      | Hyperplasia      | Marked           |
| [ Hyperplasia TGLS = 1-10 ]     |      |                  |                  |

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 703

TRT#: 8

SEX: Female

DAY ON TEST: 728

DOSE: 1800 PPM

DISP: Terminal Sacrifice

HISTO: 44715

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Nose	* Ovary	* Parathyroid Gland
Peritoneum	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Trachea
* Urinary Bladder	* Uterus		

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Kidney [ Nephropathy TGLS = 3-7 ]		Nephropathy	Moderate
* Liver		Basophilic Focus	
* Lung	Bronchiole Alveolus	Hyperplasia Infiltration Cellular Fibroadenoma	Moderate Histiocyte, Minimal Multiple
* Mammary Gland [ Fibroadenoma TGLS = 1,4-14+15 ]			
Mesentery [ Necrosis TGLS = 5-16 ]		Necrosis	Moderate
* Pancreas		Cyst	Moderate
* Pituitary Gland [ Adenoma TGLS = 2-10 ]		Adenoma	
Pleura		Fibrosis	Minimal
* Thyroid Gland	C Cell	Hyperplasia	Minimal

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 704

TRT#: 8

SEX: Female

DAY ON TEST: 728

DOSE: 1800 PPM

DISP: Terminal Sacrifice

HISTO: 44716

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Nose	* Ovary	* Pancreas
* Parathyroid Gland	Peritoneum	* Pituitary Gland	Pleura
* Salivary Glands	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Clitoral Gland		Cyst	Mild
* Kidney		Nephropathy	Minimal
* Liver		Basophilic Focus	
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Minimal
Mesentery		Necrosis	Moderate
[ Necrosis TGLS = 1-14 ]			
* Uterus		Polyp Stromal	
[ Polyp Stromal TGLS = 2-10 ]			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 705

TRT#: 8

SEX: Female

DAY ON TEST: 723

DOSE: 1800 PPM

DISP: Moribund Sacrifice

HISTO: 44717

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Mammary Gland	* Nose
* Pancreas	* Parathyroid Gland	Peripheral Nerve	Peritoneum
Pleura	* Salivary Glands	Skeletal Muscle	* Skin
Spinal Cord	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Trachea	* Urinary Bladder	* Uterus	

MISSING

\* Lymph Node, Mandibular

OBSERVATIONS

* Kidney		Leukemia Mononuclear	
		Nephropathy	Mild
* Larynx		Foreign Body	Marked
		Inflammation	Suppurative, Mild
* Liver		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 8-6 ]			
* Lung		Carcinoma	Metastatic (Thyroid Gland)
		Leukemia Mononuclear	
[ Carcinoma TGLS = 2-4+5 ]			
Lymph Node	Deep Cervical	Carcinoma	Metastatic (Thyroid Gland)
[ Carcinoma TGLS = 4-16 ]			
* Lymph Node, Bronchial		Carcinoma	Metastatic (Thyroid Gland)
[ Carcinoma TGLS = 3-15 ]			
* Lymph Node, Mediastinal		Leukemia Mononuclear	
* Lymph Node, Mesenteric		Leukemia Mononuclear	
* Ovary		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 9-9 ]			
* Pituitary Gland		Adenoma	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Methyl isobutyl ketone  
**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014  
**Time Report Requested:** 22:41:43  
**First Dose M/F:** NA / NA  
**Lab:** BNW

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<b>ANIMAL ID:</b> 705	<b>TRT#:</b> 8	<b>SEX:</b> Female	<b>DAY ON TEST:</b> 723
	<b>DOSE:</b> 1800 PPM	<b>DISP:</b> Moribund Sacrifice	<b>HISTO:</b> 44717

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Adenoma TGLS = 5-10 ]			
* Spleen		Leukemia Mononuclear Necrosis	Marked
[ Leukemia Mononuclear TGLS = 7-14 ]			
[ Necrosis TGLS = 6-14 ]			
* Thyroid Gland	C Cell	Carcinoma	
[ Carcinoma TGLS = 1-3 ]			

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PRIMARY CAUSE OF DEATH	- Spleen	Leukemia Mononuclear
CONTRIBUTORY CAUSE OF DEATH	- Thyroid Gland	C Cell Carcinoma

---

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 706

TRT#: 8

SEX: Female

DAY ON TEST: 728

DOSE: 1800 PPM

DISP: Terminal Sacrifice

HISTO: 44718

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lung	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Ovary	* Pancreas	* Parathyroid Gland
Peripheral Nerve	Peritoneum	Pleura	* Salivary Glands
Skeletal Muscle	* Skin	Spinal Cord	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Brain		Compression	Moderate
[ Compression TGLS = 3-1 ]			
* Kidney		Nephropathy	Minimal
* Liver		Basophilic Focus	
* Mammary Gland		Carcinoma	
[ Carcinoma TGLS = 1-14 ]			
* Nose	Respirat Epith	Degeneration	Hyaline, Moderate
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 2-10 ]			
* Uterus		Polyp Stromal	
[ Polyp Stromal TGLS = 4-10 ]			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 707

TRT#: 8

SEX: Female

DAY ON TEST: 489

DOSE: 1800 PPM

DISP: Moribund Sacrifice

HISTO: 44719

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex          | * Adrenal Medulla           | Blood Vessel             | * Bone                     |
| * Bone Marrow             | * Clitoral Gland            | * Esophagus              | * Eye                      |
| * Harderian Gland         | * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic      | * Kidney                    | * Larynx                 | * Liver                    |
| * Lung                    | * Lymph Node, Mediastinal   | * Lymph Node, Mesenteric | * Mammary Gland            |
| * Ovary                   | * Pancreas                  | * Parathyroid Gland      | Peritoneum                 |
| Pleura                    | * Salivary Glands           | * Skin                   | * Spleen                   |
| * Stomach, Forestomach    | * Stomach, Glandular        | * Thymus                 | * Thyroid Gland            |
| * Trachea                 | * Urinary Bladder           | * Uterus                 |                            |

MISSING

- |                         |                          |
|-------------------------|--------------------------|
| * Lymph Node, Bronchial | * Lymph Node, Mandibular |
|-------------------------|--------------------------|

OBSERVATIONS

- |                         |                |              |               |
|-------------------------|----------------|--------------|---------------|
| * Brain                 |                | Compression  | Marked        |
| * Nose                  | Respirat Epith | Degeneration | Hyaline, Mild |
| * Pituitary Gland       |                | Adenoma      |               |
| [ Adenoma TGLS = 1-10 ] |                |              |               |

PRIMARY CAUSE OF DEATH

- Pituitary Gland Adenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 708

TRT#: 8

DOSE: 1800 PPM

SEX: Female

DISP: Terminal Sacrifice

DAY ON TEST: 729

HISTO: 44720

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Nose	* Ovary	* Pancreas	* Parathyroid Gland
Peripheral Nerve	Peritoneum	* Salivary Glands	Skeletal Muscle
* Skin	Spinal Cord	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Clitoral Gland		Carcinoma	
[ Carcinoma TGLS = 2-16 ]			
* Kidney		Nephropathy	Minimal
* Liver		Basophilic Focus	
		Clear Cell Focus	
* Lung		Carcinoma	Metastatic (Clitoral Gland)
	Alveolar Epith	Hyperplasia	Minimal
	Alveolus	Infiltration Cellular	Histiocyte, Minimal
	Alveolar Epith	Metaplasia	Squamous, Mild
* Mammary Gland		Fibroadenoma	Multiple
[ Fibroadenoma TGLS = 1,5-3+15 ]			
* Pituitary Gland		Adenoma	
		Hemorrhage	Moderate
[ Adenoma TGLS = 4-10 ]			
Pleura		Fibrosis	Minimal
* Uterus		Polyp Stromal	
[ Polyp Stromal TGLS = 3-10 ]			

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Methyl isobutyl ketone  
**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014  
**Time Report Requested:** 22:41:43  
**First Dose M/F:** NA / NA  
**Lab:** BNW

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**ANIMAL ID:** 708

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 729

**DOSE:** 1800 PPM

**DISP:** Terminal Sacrifice

**HISTO:** 44720

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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: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 709

TRT#: 8

SEX: Female

DAY ON TEST: 729

DOSE: 1800 PPM

DISP: Terminal Sacrifice

HISTO: 44721

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                           |                             |                           |
|----------------------------|---------------------------|-----------------------------|---------------------------|
| * Adrenal Cortex           | * Adrenal Medulla         | Blood Vessel                | * Bone                    |
| * Bone Marrow              | * Brain                   | * Clitoral Gland            | * Esophagus               |
| * Eye                      | * Harderian Gland         | * Heart                     | * Intestine Large, Cecum  |
| * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum  |
| * Intestine Small, Jejunum | * Islets, Pancreatic      | * Larynx                    | * Lymph Node, Mediastinal |
| * Lymph Node, Mesenteric   | * Mammary Gland           | * Nose                      | * Ovary                   |
| * Pancreas                 | * Parathyroid Gland       | Peritoneum                  | Pleura                    |
| * Salivary Glands          | * Skin                    | * Spleen                    | * Stomach, Forestomach    |
| * Stomach, Glandular       | * Thymus                  | * Thyroid Gland             | * Trachea                 |
| * Urinary Bladder          | * Uterus                  |                             |                           |

MISSING

- |                         |                          |
|-------------------------|--------------------------|
| * Lymph Node, Bronchial | * Lymph Node, Mandibular |
|-------------------------|--------------------------|

OBSERVATIONS

- |                                      |          |                       |                     |
|--------------------------------------|----------|-----------------------|---------------------|
| * Kidney                             |          | Nephropathy           | Mild                |
| * Liver                              |          | Basophilic Focus      |                     |
| * Lung                               | Alveolus | Infiltration Cellular | Histiocyte, Minimal |
| [ Infiltration Cellular TGLS = 4-5 ] |          |                       |                     |
| Mesentery                            |          | Necrosis              | Moderate            |
| [ Necrosis TGLS = 3-14 ]             |          |                       |                     |
| * Pituitary Gland                    |          | Adenoma               |                     |
| [ Adenoma TGLS = 1,2-10+14 ]         |          |                       |                     |

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 710

TRT#: 8

SEX: Female

DAY ON TEST: 499

DOSE: 1800 PPM

DISP: Moribund Sacrifice

HISTO: 44722

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Nose
* Ovary	* Pancreas	* Parathyroid Gland	Peritoneum
* Pituitary Gland	Pleura	* Salivary Glands	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder	* Uterus	

MISSING

\* Lymph Node, Mandibular

OBSERVATIONS

* Kidney	Papilla	Mineralization	Minimal
		Nephropathy	Minimal
* Liver		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 4-6 ]			
* Lung		Leukemia Mononuclear	
Lymph Node	Axillary	Leukemia Mononuclear	
Note: THORACIC LYMPH NODE MISSING.			
[ Leukemia Mononuclear TGLS = 5-15 ]			
* Lymph Node, Bronchial		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 2-3 ]			
* Lymph Node, Mediastinal		Leukemia Mononuclear	
* Lymph Node, Mesenteric		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 6-16 ]			
* Mammary Gland		Fibroadenoma	
[ Fibroadenoma TGLS = 1-14 ]			
* Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 3-6 ]			

PRIMARY CAUSE OF DEATH

- Spleen Leukemia Mononuclear

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Methyl isobutyl ketone  
**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014  
**Time Report Requested:** 22:41:43  
**First Dose M/F:** NA / NA  
**Lab:** BNW

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**ANIMAL ID:** 710

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 499

**DOSE:** 1800 PPM

**DISP:** Moribund Sacrifice

**HISTO:** 44722

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 711

TRT#: 8

SEX: Female

DAY ON TEST: 695

DOSE: 1800 PPM

DISP: Moribund Sacrifice

HISTO: 44723

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lung
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Ovary	* Pancreas	* Parathyroid Gland	Peritoneum
* Salivary Glands	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Trachea	* Urinary Bladder

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Kidney		Nephropathy	Minimal
* Liver		Necrosis	Mild
		Vacuolization Cytoplasmic	Mild
	[ Vacuolization Cytoplasmic TGLS = 3-6 ]		
* Pituitary Gland		Adenoma	
		Cyst	Marked
	[ Adenoma TGLS = 2-10 ]		
	[ Cyst TGLS = 2-10 ]		
Pleura		Inflammation	Chronic, Minimal
* Thyroid Gland	C Cell	Hyperplasia	Marked
* Uterus		Hemorrhage	Marked
		Sarcoma Stromal	

Note: NO CORRESPONDING LESION FOR TGL - 5.

[ Sarcoma Stromal TGLS = 4-14 ]

PRIMARY CAUSE OF DEATH	- Uterus	Sarcoma Stromal
CONTRIBUTORY CAUSE OF DEATH	- Uterus	Hemorrhage

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 712

TRT#: 8

SEX: Female

DAY ON TEST: 729

DOSE: 1800 PPM

DISP: Terminal Sacrifice

HISTO: 44724

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Ovary	* Pancreas	* Parathyroid Gland
Peritoneum	Pleura	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	* Uterus

**MISSING**

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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**OBSERVATIONS**

* Clitoral Gland [ Hyperplasia TGLS = 2-9 ]		Hyperplasia	Marked
* Kidney		Nephropathy	Moderate
* Liver		Basophilic Focus	
* Lung	Bronchiole	Hyperplasia	Mild
* Nose	Respirat Epith	Degeneration	Hyaline, Mild
* Pituitary Gland [ Adenoma TGLS = 1-10 ]		Adenoma	

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 713

TRT#: 8

SEX: Female

DAY ON TEST: 728

DOSE: 1800 PPM

DISP: Terminal Sacrifice

HISTO: 44725

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lung
* Lymph Node, Bronchial	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Ovary	* Pancreas	* Parathyroid Gland	Peritoneum
* Pituitary Gland	Pleura	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Trachea	* Urinary Bladder	* Uterus	

**MISSING**

\* Lymph Node, Mandibular

**OBSERVATIONS**

* Kidney		Nephropathy	Moderate
* Liver		Clear Cell Focus	
* Nose	Respirat Epith	Degeneration	Hyaline, Minimal
* Thyroid Gland		Cyst	Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 714

TRT#: 8

SEX: Female

DAY ON TEST: 728

DOSE: 1800 PPM

DISP: Terminal Sacrifice

HISTO: 44726

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Liver	* Lung
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Pancreas	* Parathyroid Gland	Peritoneum	Pleura
* Salivary Glands	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Cortex	Vacuolization Cytoplasmic	Minimal
* Kidney	Nephropathy	Mild
* Ovary	Cyst	Moderate
[ Cyst TGLS = 2-9 ]		
* Pituitary Gland	Cyst	Minimal
[ Cyst TGLS = 1-10 ]		
* Spleen	Leukemia Mononuclear	
* Uterus	Polyp Stromal	
[ Polyp Stromal TGLS = 3-10 ]		

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 715

TRT#: 8

SEX: Female

DAY ON TEST: 729

DOSE: 1800 PPM

DISP: Terminal Sacrifice

HISTO: 44727

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lung	* Lymph Node, Bronchial	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Nose	* Ovary	* Pancreas
* Parathyroid Gland	Peritoneum	Pleura	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

\* Lymph Node, Mandibular

OBSERVATIONS

* Adrenal Cortex		Vacuolization Cytoplasmic	Mild
* Clitoral Gland		Carcinoma	
[ Carcinoma TGLS = 3-17 ]			
* Kidney		Nephropathy	Minimal
* Liver		Basophilic Focus	
		Hepatodiaphragmatic Nodule	Marked
		Vacuolization Cytoplasmic	Mild
[ Hepatodiaphragmatic Nodule TGLS = 5-19 ]			
[ Vacuolization Cytoplasmic TGLS = 6-19 ]			
* Mammary Gland		Fibroadenoma	Multiple
[ Fibroadenoma TGLS = 1,2,4-14+15+16 ]			
Mesentery		Necrosis	Moderate
[ Necrosis TGLS = 7-18 ]			
* Pituitary Gland		Hyperplasia	Moderate
* Uterus	Endometrium	Hyperplasia	Minimal
[ Hyperplasia TGLS = 8-10 ]			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 716

TRT#: 8

SEX: Female

DAY ON TEST: 729

DOSE: 1800 PPM

DISP: Terminal Sacrifice

HISTO: 44728

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lung
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Ovary	* Pancreas	* Parathyroid Gland	Peritoneum
Pleura	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	Tissue NOS
* Trachea	* Urinary Bladder	* Uterus	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Kidney	Mesenchymal Tumor Malignant	
	Nephropathy	Mild
	Basophilic Focus	
	Clear Cell Focus	
[ Clear Cell Focus TGLS = 2-6 ]		
Mesentery	Necrosis	Moderate
[ Necrosis TGLS = 3-14 ]		
* Pituitary Gland	Hyperplasia	Marked
[ Hyperplasia TGLS = 1-10 ]		
* Thyroid Gland	C Cell	Marked

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 717

TRT#: 8

SEX: Female

DAY ON TEST: 729

DOSE: 1800 PPM

DISP: Terminal Sacrifice

HISTO: 44729

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lung	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Nose	* Ovary
* Pancreas	* Parathyroid Gland	Peritoneum	* Pituitary Gland
Pleura	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Trachea
* Urinary Bladder	* Uterus		

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Cortex		Vacuolization Cytoplasmic	Moderate
* Kidney	Papilla	Mineralization	Minimal
		Nephropathy	Minimal
* Liver		Basophilic Focus	
		Clear Cell Focus	
[ Clear Cell Focus TGLS = 2-6 ]			
Mesentery		Necrosis	Moderate
[ Necrosis TGLS = 1-7 ]			
* Thyroid Gland	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 718

TRT#: 8

SEX: Female

DAY ON TEST: 681

DOSE: 1800 PPM

DISP: Moribund Sacrifice

HISTO: 44730

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lymph Node, Mediastinal	* Mammary Gland
* Ovary	* Pancreas	* Parathyroid Gland	Peripheral Nerve
Peritoneum	Pleura	* Salivary Glands	Skeletal Muscle
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Cortex		Vacuolization Cytoplasmic	Minimal
* Kidney		Infarct	
		Nephropathy	Minimal
[ Infarct TGLS = 5-7 ]			
* Liver		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 4-6 ]			
* Lung		Leukemia Mononuclear	
* Lymph Node, Mesenteric		Leukemia Mononuclear	
* Nose	Respirat Epith	Degeneration	Hyaline, Mild
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 1-10 ]			
Spinal Cord		Cyst Epithelial Inclusion	Moderate
* Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 3-14 ]			
* Uterus		Polyp Stromal	
[ Polyp Stromal TGLS = 2-10 ]			

PRIMARY CAUSE OF DEATH - Spleen Leukemia Mononuclear

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 719

TRT#: 8

SEX: Female

DAY ON TEST: 728

DOSE: 1800 PPM

DISP: Terminal Sacrifice

HISTO: 44731

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lymph Node, Mesenteric	* Nose	* Pancreas
Peripheral Nerve	Peritoneum	Pleura	* Salivary Glands
Skeletal Muscle	* Skin	Spinal Cord	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder	* Uterus	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Parathyroid Gland
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OBSERVATIONS

* Brain		Compression	Marked
[ Compression TGLS = 4-1+14 ]			
* Heart		Cardiomyopathy	Mild
* Kidney		Nephropathy	Moderate
[ Nephropathy TGLS = 5-7 ]			
* Liver		Basophilic Focus	
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic, Minimal
* Mammary Gland		Fibroadenoma	
[ Fibroadenoma TGLS = 2-15 ]			
* Ovary		Cyst	Marked
[ Cyst TGLS = 3-9 ]			
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 1-10 ]			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 720

TRT#: 8

SEX: Female

DAY ON TEST: 729

DOSE: 1800 PPM

DISP: Terminal Sacrifice

HISTO: 44732

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lung	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Nose	* Ovary	* Pancreas
* Parathyroid Gland	Peripheral Nerve	Peritoneum	Pleura
* Salivary Glands	Skeletal Muscle	* Skin	Spinal Cord
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

**MISSING**

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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**OBSERVATIONS**

* Brain	Compression	Moderate
	Hemorrhage	Mild
[ Compression TGLS = 4-14 ]		
* Kidney	Nephropathy	Marked
* Liver	Basophilic Focus	
	Vacuolization Cytoplasmic	Mild
* Mammary Gland	Fibroadenoma	Multiple
[ Fibroadenoma TGLS = 1,2-15+16 ]		
* Pituitary Gland	Adenoma	
[ Adenoma TGLS = 3-10 ]		
* Uterus	Endometrium	Hyperplasia
		Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 721

TRT#: 8

SEX: Female

DAY ON TEST: 398

DOSE: 1800 PPM

DISP: Moribund Sacrifice

HISTO: 44733

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Larynx
* Liver	* Lung	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Nose	* Ovary	* Pancreas
* Parathyroid Gland	Peritoneum	Pleura	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Pituitary Gland	Hyperplasia	Mild
* Uterus	Hemorrhage	Marked
	Polyp Stromal	

[ Polyp Stromal TGLS = 1,2-10+14 ]

PRIMARY CAUSE OF DEATH - Uterus Polyp Stromal

CONTRIBUTORY CAUSE OF DEATH - Uterus Hemorrhage

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 722

TRT#: 8

SEX: Female

DAY ON TEST: 729

DOSE: 1800 PPM

DISP: Terminal Sacrifice

HISTO: 44734

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex           | * Adrenal Medulla         | Blood Vessel                | * Bone                   |
| * Bone Marrow              | * Brain                   | * Clitoral Gland            | * Esophagus              |
| * Eye                      | * Harderian Gland         | * Heart                     | * Intestine Large, Cecum |
| * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Larynx                  | * Lymph Node, Mediastinal   | * Lymph Node, Mesenteric |
| * Nose                     | * Ovary                   | * Pancreas                  | * Parathyroid Gland      |
| Peritoneum                 | Pleura                    | * Salivary Glands           | * Skin                   |
| * Stomach, Forestomach     | * Stomach, Glandular      | * Thymus                    | * Trachea                |
| * Urinary Bladder          |                           |                             |                          |

MISSING

- |                         |                          |
|-------------------------|--------------------------|
| * Lymph Node, Bronchial | * Lymph Node, Mandibular |
|-------------------------|--------------------------|

OBSERVATIONS

- |  |              |  |                     |
|--|--------------|--|---------------------|
| * Islets, Pancreatic<br>[ Adenoma TGLS = 6-6 ]                                     |              | Adenoma  |                     |
| * Kidney   | Renal Tubule | Hyperplasia<br>Nephropathy<br>Basophilic Focus | Moderate<br>Mild    |
| * Liver  |              |  |                     |
| * Lung   | Alveolus     | Infiltration Cellular                          | Histiocyte, Minimal |
| * Mammary Gland<br><br>[ Fibroadenoma TGLS = 2-15 ]<br>[ Galactocele TGLS = 1-14 ] |              | Fibroadenoma<br>Galactocele                    |                     |
| * Pituitary Gland<br>[ Hyperplasia TGLS = 3-10 ]                                   |              | Hyperplasia                                    | Marked              |
| * Spleen   |              | Leukemia Mononuclear                           |                     |
| * Thyroid Gland  | C Cell       | Adenoma  |                     |
| * Uterus<br>[ Polyp Stromal TGLS = 4-10 ]  |              | Polyp Stromal                                  |                     |

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 723

TRT#: 8

SEX: Female

DAY ON TEST: 729

DOSE: 1800 PPM

DISP: Terminal Sacrifice

HISTO: 44735

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lung	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Nose	* Ovary	* Pancreas
* Parathyroid Gland	Peritoneum	Pleura	* Salivary Glands
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Cortex		Vacuolization Cytoplasmic	Minimal
* Kidney	Pelvis, Transit Epithe	Mineralization	Minimal
* Liver		Basophilic Focus	
		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 3-6 ]			
* Mammary Gland		Fibroadenoma	
[ Fibroadenoma TGLS = 1-14 ]			
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 2-10 ]			
* Spleen		Leukemia Mononuclear	
* Uterus		Polyp Stromal	

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 724

TRT#: 8

SEX: Female

DAY ON TEST: 727

DOSE: 1800 PPM

DISP: Terminal Sacrifice

HISTO: 44736

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lymph Node, Bronchial	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Nose	* Ovary	* Pancreas
* Parathyroid Gland	Peritoneum	Pleura	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder
* Uterus			

MISSING

\* Lymph Node, Mandibular

OBSERVATIONS

* Adrenal Medulla		Pheochromocytoma Benign	
* Kidney		Nephropathy	Mild
* Liver		Basophilic Focus	
		Hepatodiaphragmatic Nodule	Marked
	[ Hepatodiaphragmatic Nodule TGLS = 3-14 ]		
* Lung	Alveolar Epith	Hyperplasia	Minimal
* Mammary Gland		Fibroadenoma	
	[ Fibroadenoma TGLS = 1-14 ]		
* Pituitary Gland		Adenoma	
	[ Adenoma TGLS = 4-10 ]		

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 725

TRT#: 8

SEX: Female

DAY ON TEST: 728

DOSE: 1800 PPM

DISP: Terminal Sacrifice

HISTO: 44737

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lung	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Ovary	* Pancreas	* Parathyroid Gland	Peritoneum
Pleura	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder	* Uterus	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Eye [ Cataract TGLS = 1-13 ]	Lens	Cataract	Marked
* Kidney		Nephropathy	Moderate
* Larynx	Epiglottis	Metaplasia	Squamous, Minimal
* Liver		Basophilic Focus	
* Mammary Gland [ Fibroadenoma TGLS = 2,3-15+16 ]		Fibroadenoma	Multiple
Mesentery [ Necrosis TGLS = 4-17 ]		Necrosis	Moderate
* Nose	Respirat Epith	Degeneration	Hyaline, Mild
* Pituitary Gland		Adenoma	

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 726

TRT#: 8

SEX: Female

DAY ON TEST: 728

DOSE: 1800 PPM

DISP: Terminal Sacrifice

HISTO: 44738

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Liver
* Lung	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Nose	* Ovary	* Pancreas	* Parathyroid Gland
Peritoneum	Pleura	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

**MISSING**

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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**OBSERVATIONS**

* Kidney	Nephropathy	Minimal
* Pituitary Gland	Adenoma	
[ Adenoma TGLS = 1-10 ]		
* Uterus	Endometrium	Marked

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 727

TRT#: 8

SEX: Female

DAY ON TEST: 729

DOSE: 1800 PPM

DISP: Terminal Sacrifice

HISTO: 44739

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Liver	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Nose	* Ovary
* Pancreas	* Parathyroid Gland	Peritoneum	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Cortex [ Vacuolization Cytoplasmic TGLS = 3-7 ]		Vacuolization Cytoplasmic	Marked
* Kidney	Pelvis, Transit Epithe	Mineralization	Minimal
* Lung	Alveolus	Nephropathy	Moderate
* Pituitary Gland [ Adenoma TGLS = 4-10 ]		Infiltration Cellular	Histiocyte, Minimal
Pleura		Adenoma	
* Uterus [ Polyp Stromal TGLS = 1,2-10+14 ]		Fibrosis	Minimal
		Polyp Stromal	Multiple

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 728

TRT#: 8

SEX: Female

DAY ON TEST: 506

DOSE: 1800 PPM

DISP: Natural Death

HISTO: 44740

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                          |
|---------------------------|-----------------------------|--------------------------|--------------------------|
| * Adrenal Cortex          | * Adrenal Medulla           | Blood Vessel             | * Bone                   |
| * Bone Marrow             | * Brain                     | * Clitoral Gland         | * Esophagus              |
| * Eye                     | * Harderian Gland           | * Heart                  | * Intestine Large, Colon |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Islets, Pancreatic     | * Kidney                 |
| * Larynx                  | * Lymph Node, Mediastinal   | * Lymph Node, Mesenteric | * Mammary Gland          |
| * Nose                    | * Pancreas                  | * Parathyroid Gland      | Peritoneum               |
| * Pituitary Gland         | Pleura                      | * Salivary Glands        | * Stomach, Forestomach   |
| * Stomach, Glandular      | * Thymus                    | * Thyroid Gland          | * Trachea                |
| * Urinary Bladder         | * Uterus                    |                          |                          |

MISSING

- \* Lymph Node, Mandibular

AUTO PRECLUDES DIAG.

- |                          |                          |                            |
|--------------------------|--------------------------|----------------------------|
| * Intestine Large, Cecum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
|--------------------------|--------------------------|----------------------------|

OBSERVATIONS

- |  |                      |                   |
|--|----------------------|-------------------|
| * Liver  | Leukemia Mononuclear |                   |
| * Lung   | Sarcoma              | Metastatic (Skin) |
| [ Sarcoma TGLS = 4,5-4+5 ]   |                      |                   |
| * Lymph Node, Bronchial  | Sarcoma              | Metastatic (Skin) |
| [ Sarcoma TGLS = 3-16 ]  |                      |                   |
| * Ovary  | Thecoma Malignant    |                   |
| Note: Diff dx of this lesion is primary ovarian sarcoma/malignant thecoma metastatic to lungs, sq, tbln. |                      |                   |
| * Skin   | Schwannoma Malignant |                   |
| [ Schwannoma Malignant TGLS = 1-14+15 ]  |                      |                   |
| * Spleen   | Leukemia Mononuclear |                   |

PRIMARY CAUSE OF DEATH

- Skin Schwannoma Malignant

CONTRIBUTORY CAUSE OF DEATH

- Lung Sarcoma Skin

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 729

TRT#: 8

SEX: Female

DAY ON TEST: 729

DOSE: 1800 PPM

DISP: Terminal Sacrifice

HISTO: 44741

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Nose	* Ovary	* Pancreas
* Parathyroid Gland	Peripheral Nerve	Peritoneum	Pleura
* Salivary Glands	Skeletal Muscle	* Skin	Spinal Cord
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Kidney		Nephropathy	Mild
* Liver		Basophilic Focus	
* Lung	Alveolar Epith	Hyperplasia	Mild
	Alveolus	Infiltration Cellular	Histiocyte, Minimal
[ Hyperplasia TGLS = 4-15 ]			
* Mammary Gland		Fibroadenoma	
[ Fibroadenoma TGLS = 5-17 ]			
Mesentery		Necrosis	Moderate
[ Necrosis TGLS = 3-14 ]			
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 1-10 ]			
* Uterus		Polyp Stromal	
[ Polyp Stromal TGLS = 2-15 ]			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 730

TRT#: 8

SEX: Female

DAY ON TEST: 728

DOSE: 1800 PPM

DISP: Terminal Sacrifice

HISTO: 44742

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lung	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Ovary	* Pancreas	* Parathyroid Gland	Peripheral Nerve
Peritoneum	Pleura	* Salivary Glands	Skeletal Muscle
* Skin	Spinal Cord	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder	* Uterus		

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Cortex		Vacuolization Cytoplasmic	Marked
* Clitoral Gland		Carcinoma	
[ Carcinoma TGLS = 3-14 ]			
* Kidney	Papilla	Mineralization	Minimal
		Nephropathy	Minimal
* Liver		Basophilic Focus	
* Mammary Gland		Fibroadenoma	
[ Fibroadenoma TGLS = 1-15 ]			
* Nose	Respirat Epith	Degeneration	Hyaline, Moderate
* Pituitary Gland		Cyst	Marked
[ Cyst TGLS = 2-10 ]			

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 731

TRT#: 8

SEX: Female

DAY ON TEST: 729

DOSE: 1800 PPM

DISP: Terminal Sacrifice

HISTO: 44743

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lymph Node, Mesenteric	* Nose
* Ovary	* Pancreas	* Parathyroid Gland	Peripheral Nerve
Peritoneum	* Pituitary Gland	Pleura	* Salivary Glands
Skeletal Muscle	Spinal Cord	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Eye [ Cataract TGLS = 1-13 ]	Lens	Cataract	Marked
* Kidney	Pelvis, Transit Epithe	Hyperplasia Nephropathy	Minimal Mild
* Liver		Leukemia Mononuclear	
* Lung [ Carcinoma TGLS = 8-5 ]		Carcinoma	Metastatic (Zymbal'S Gland)
* Lymph Node, Mediastinal [ Carcinoma TGLS = 7-3 ]		Carcinoma	Metastatic (Zymbal'S Gland)
* Mammary Gland [ Fibroadenoma TGLS = 2,3-14+15 ]		Fibroadenoma	Multiple
* Skin [ Ulcer TGLS = 4-17 ]		Ulcer	Minimal
* Spleen		Leukemia Mononuclear	
* Uterus		Necrosis	Marked
		Polyp Stromal	
		Thrombosis	Marked
[ Polyp Stromal TGLS = 6-10 ]			

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01

**Test Type:** CHRONIC

**Route:** RESPIRATORY EXPOSURE WHOLE BODY

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Methyl isobutyl ketone

**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014

**Time Report Requested:** 22:41:43

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

**Lab:** BNW

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**ANIMAL ID:** 731

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 729

**DOSE:** 1800 PPM

**DISP:** Terminal Sacrifice

**HISTO:** 44743

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Zymbal's Gland

Carcinoma

[ Carcinoma TGLS = 5-16 ]

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PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 732

TRT#: 8

SEX: Female

DAY ON TEST: 651

DOSE: 1800 PPM

DISP: Moribund Sacrifice

HISTO: 44744

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lung	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Ovary	* Pancreas
* Parathyroid Gland	Peripheral Nerve	Peritoneum	Pleura
* Salivary Glands	Skeletal Muscle	* Skin	Spinal Cord
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Trachea	* Urinary Bladder	* Uterus	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Brain		Compression	Marked
		Hemorrhage	Mild
* Kidney	Renal Tubule	Cyst	
		Nephropathy	Moderate
[ Cyst TGLS = 3-15 ]			
* Liver		Basophilic Focus	
* Nose	Olfactory Epi	Degeneration	Hyaline, Minimal
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 1-10 ]			
* Thyroid Gland	C Cell	Adenoma	
	Follicular Cel	Hyperplasia	Moderate
Tongue	Epithelium	Hyperplasia	Moderate
[ Hyperplasia TGLS = 4-14 ]			

PRIMARY CAUSE OF DEATH

- Pituitary Gland Adenoma

CONTRIBUTORY CAUSE OF DEATH

- Brain Hemorrhage

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 733

TRT#: 8

SEX: Female

DAY ON TEST: 681

DOSE: 1800 PPM

DISP: Moribund Sacrifice

HISTO: 44745

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Nose	* Ovary	* Pancreas
* Parathyroid Gland	Peritoneum	Pleura	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder
* Uterus			

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Kidney		Nephropathy	Minimal
* Liver		Basophilic Focus	
		Clear Cell Focus	
* Lung	Alveolar Epith	Hyperplasia	Mild
	Alveolus	Infiltration Cellular	Histiocyte, Minimal
* Mammary Gland		Fibroadenoma	Multiple
[ Fibroadenoma TGLS = 1,3-14+15+16 ]			
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 2-10 ]			

PRIMARY CAUSE OF DEATH - Mammary Gland Fibroadenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 734

TRT#: 8

SEX: Female

DAY ON TEST: 364

DOSE: 1800 PPM

DISP: Moribund Sacrifice

HISTO: 44746

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Larynx
* Lung	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Nose	* Ovary	* Pancreas	* Parathyroid Gland
Peritoneum	* Pituitary Gland	Pleura	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Kidney		
Note: NO CORRESPONDING LESION FOR TGLS = 3.		
* Liver	Hepatodiaphragmatic Nodule	Marked
[ Hepatodiaphragmatic Nodule TGLS = 5-14 ]		
Mesentery	Necrosis	Moderate
[ Necrosis TGLS = 4-14 ]		
* Uterus	Carcinoma	
[ Carcinoma TGLS = 2-10 ]		

PRIMARY CAUSE OF DEATH

- Uterus Carcinoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 735

TRT#: 8

SEX: Female

DAY ON TEST: 727

DOSE: 1800 PPM

DISP: Terminal Sacrifice

HISTO: 44747

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Liver
* Lung	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Nose
* Ovary	* Pancreas	* Parathyroid Gland	Peritoneum
Pleura	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder	* Uterus	

**MISSING**

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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**OBSERVATIONS**

* Kidney	Nephropathy	Mild
* Mammary Gland	Fibroadenoma	
[ Fibroadenoma TGLS = 1-14 ]		
Mesentery	Necrosis	Moderate
[ Necrosis TGLS = 2-15 ]		
* Pituitary Gland	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 736

TRT#: 8

SEX: Female

DAY ON TEST: 728

DOSE: 1800 PPM

DISP: Terminal Sacrifice

HISTO: 44748

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Liver
* Lung	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Nose
* Ovary	* Pancreas	* Parathyroid Gland	Peritoneum
Pleura	* Salivary Glands	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder	* Uterus		

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Kidney	Nephropathy	Moderate
* Mammary Gland	Carcinoma	
	Fibroadenoma	Multiple
[ Carcinoma TGLS = 3-15 ]		
[ Fibroadenoma TGLS = 1,4-14+16 ]		
* Pituitary Gland	Adenoma	
[ Adenoma TGLS = 2-10 ]		
* Spleen	Leukemia Mononuclear	

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 737

TRT#: 8

SEX: Female

DAY ON TEST: 691

DOSE: 1800 PPM

DISP: Moribund Sacrifice

HISTO: 44749

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Brain
* Clitoral Gland	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Ovary	* Pancreas	* Parathyroid Gland	Peritoneum
Pleura	* Salivary Glands	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder	* Uterus		

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Cortex		Vacuolization Cytoplasmic	Minimal
* Bone Marrow		Myelofibrosis	Moderate
* Kidney		Nephropathy	Minimal
* Liver		Eosinophilic Focus	
		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 3-6 ]			
* Lung	Alveolar Epith	Hyperplasia	Minimal
		Inflammation	Chronic, Mild
		Leukemia Mononuclear	
[ Inflammation TGLS = 4,5-14+4 ]			
Lymph Node	Pancreatic	Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 2-15 ]			
* Lymph Node, Mediastinal		Leukemia Mononuclear	
* Pituitary Gland		Hyperplasia	Minimal
* Spleen		Leukemia Mononuclear	
[ Leukemia Mononuclear TGLS = 1-15 ]			

PRIMARY CAUSE OF DEATH - Spleen Leukemia Mononuclear

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 738

TRT#: 8

SEX: Female

DAY ON TEST: 454

DOSE: 1800 PPM

DISP: Natural Death

HISTO: 44750

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Larynx
* Lung	* Lymph Node, Mediastinal	* Mammary Gland	* Nose
* Ovary	* Pancreas	* Parathyroid Gland	Peritoneum
* Pituitary Gland	* Salivary Glands	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Trachea	* Urinary Bladder
* Uterus			

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Liver		Histiocytic Sarcoma	
		Necrosis	Mild
		Vacuolization Cytoplasmic	Mild
[ Histiocytic Sarcoma TGLS = 2-6 ]			
* Lymph Node, Mesenteric		Histiocytic Sarcoma	
Mesentery		Histiocytic Sarcoma	
[ Histiocytic Sarcoma TGLS = 3-14+15+16 ]			
Pleura		Fibrosis	Minimal
* Spleen		Histiocytic Sarcoma	
[ Histiocytic Sarcoma TGLS = 1-6 ]			
* Thyroid Gland	C Cell	Hyperplasia	Minimal

PRIMARY CAUSE OF DEATH - Mesentery Histiocytic Sarcoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 739

TRT#: 8

SEX: Female

DAY ON TEST: 728

DOSE: 1800 PPM

DISP: Terminal Sacrifice

HISTO: 44751

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lung
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Ovary	* Pancreas	* Parathyroid Gland	Peripheral Nerve
Peritoneum	Pleura	* Salivary Glands	Skeletal Muscle
Spinal Cord	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Kidney	Mesenchymal Tumor Malignant Nephropathy	Mild
[ Mesenchymal Tumor Malignant TGLS = 3-7 ]		
* Liver	Clear Cell Focus Necrosis	Moderate
Mesentery		
[ Necrosis TGLS = 2-15 ]		
* Pituitary Gland	Adenoma	
[ Adenoma TGLS = 1-10 ]		
* Skin	Cyst Epithelial Inclusion Ulcer	Marked Moderate
[ Cyst Epithelial Inclusion TGLS = 6-16 ]		
[ Ulcer TGLS = 5-15 ]		
* Uterus	Polyp Stromal	
[ Polyp Stromal TGLS = 4-14 ]		

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 740

TRT#: 8

SEX: Female

DAY ON TEST: 729

DOSE: 1800 PPM

DISP: Terminal Sacrifice

HISTO: 44752

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Blood Vessel	* Bone	* Bone Marrow	* Brain
* Clitoral Gland	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lung	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Nose	* Pancreas	* Parathyroid Gland
Peritoneum	Pleura	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

**MISSING**

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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**OBSERVATIONS**

* Adrenal Cortex	Vacuolization Cytoplasmic	Minimal
* Adrenal Medulla	Pheochromocytoma Benign	
* Kidney	Nephropathy	Mild
* Liver	Basophilic Focus	
* Ovary	Cyst	Marked
[ Cyst TGLS = 2-9 ]		
* Pituitary Gland	Adenoma	
[ Adenoma TGLS = 3-10 ]		
* Uterus	Hemangioma	
[ Hemangioma TGLS = 1-10 ]		

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 741

TRT#: 8

SEX: Female

DAY ON TEST: 728

DOSE: 1800 PPM

DISP: Terminal Sacrifice

HISTO: 44753

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Liver
* Lung	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Nose
* Ovary	* Pancreas	* Parathyroid Gland	Peritoneum
Pleura	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
Tissue NOS	* Trachea	* Urinary Bladder	* Uterus

**MISSING**

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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**OBSERVATIONS**

* Kidney	Nephropathy	Mild
* Mammary Gland	Fibroadenoma	
[ Fibroadenoma TGLS = 2-14 ]		
Mesentery	Necrosis	Moderate
[ Necrosis TGLS = 3-15 ]		
* Pituitary Gland	Adenoma	
[ Adenoma TGLS = 1-10 ]		

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 742

TRT#: 8

SEX: Female

DAY ON TEST: 548

DOSE: 1800 PPM

DISP: Moribund Sacrifice

HISTO: 44754

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Nose	* Ovary	* Pancreas	* Parathyroid Gland
Peripheral Nerve	Peritoneum	Pleura	* Salivary Glands
Skeletal Muscle	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder
* Uterus			

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Medulla		Leukemia Mononuclear Necrosis	Marked
* Kidney		Leukemia Mononuclear Nephropathy	Minimal
[ Leukemia Mononuclear TGLS = 2-7 ]			
* Larynx		Foreign Body Inflammation	Marked Suppurative, Mild
	Epiglottis	Metaplasia	Squamous, Mild
* Liver		Leukemia Mononuclear Necrosis	Mild
* Lung		Leukemia Mononuclear	
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 1-10 ]			
Spinal Cord		Hemorrhage	Mild
* Spleen		Leukemia Mononuclear	

PRIMARY CAUSE OF DEATH

- Spleen Leukemia Mononuclear

CONTRIBUTORY CAUSE OF DEATH

- Adrenal Medulla Necrosis; Pituitary Gland Adenoma

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
**Test Compound:** Methyl isobutyl ketone  
**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014  
**Time Report Requested:** 22:41:43  
**First Dose M/F:** NA / NA  
**Lab:** BNW

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**ANIMAL ID:** 742

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 548

**DOSE:** 1800 PPM

**DISP:** Moribund Sacrifice

**HISTO:** 44754

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* PROTOCOL REQUIRED TISSUE



Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 743

TRT#: 8

SEX: Female

DAY ON TEST: 729

DOSE: 1800 PPM

DISP: Terminal Sacrifice

HISTO: 44755

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lung	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Nose	* Ovary	* Pancreas
* Parathyroid Gland	Peritoneum	Pleura	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder
* Uterus			

**MISSING**

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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**OBSERVATIONS**

* Heart	Cardiomyopathy	Mild
* Intestine Large, Colon [ Adenoma TGLS = 3-14 ]	Adenoma	
* Kidney	Nephropathy	Minimal
* Liver [ Hepatodiaphragmatic Nodule TGLS = 2-6 ]	Hepatodiaphragmatic Nodule	Marked
* Pituitary Gland [ Adenoma TGLS = 1-10 ]	Adenoma	

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 744

TRT#: 8

SEX: Female

DAY ON TEST: 667

DOSE: 1800 PPM

DISP: Moribund Sacrifice

HISTO: 44756

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lung	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Nose	* Ovary
* Pancreas	* Parathyroid Gland	Peripheral Nerve	Peritoneum
Pleura	* Salivary Glands	Skeletal Muscle	* Skin
Spinal Cord	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Brain		Compression	Marked
		Hemorrhage	Moderate
		Necrosis	Marked
* Kidney		Nephropathy	Mild
* Liver		Eosinophilic Focus	
Mesentery		Necrosis	Mild
[ Necrosis TGLS = 2-16 ]			
* Pituitary Gland		Adenoma	
		Hemorrhage	Moderate
[ Adenoma TGLS = 1-10 ]			
* Uterus	Myometrium	Hyperplasia	Moderate
[ Hyperplasia TGLS = 3-14 ]			
Vagina	Muscularis	Hyperplasia	Marked
[ Hyperplasia TGLS = 4-15 ]			

PRIMARY CAUSE OF DEATH - Pituitary Gland Adenoma

CONTRIBUTORY CAUSE OF DEATH - Brain Hemorrhage

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 745

TRT#: 8

SEX: Female

DAY ON TEST: 637

DOSE: 1800 PPM

DISP: Natural Death

HISTO: 44757

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Clitoral Gland	* Esophagus	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Liver	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Ovary	* Pancreas	* Parathyroid Gland
Peripheral Nerve	Peritoneum	Pleura	* Salivary Glands
Skeletal Muscle	* Skin	Spinal Cord	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder	* Uterus	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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AUTO PRECLUDES DIAG.

* Eye
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OBSERVATIONS

* Brain		Hemorrhage	Marked
		Necrosis	Marked
* Kidney		Nephropathy	Mild
* Lung		Hemorrhage	Mild
	Alveolus	Infiltration Cellular	Histiocyte, Minimal
	[ Infiltration Cellular TGLS = 2-15 ]		
* Nose	Olfactory Epi	Degeneration	Hyaline, Mild
* Pituitary Gland		Adenoma	
		Hemorrhage	Marked
	[ Hemorrhage TGLS = 1-10 ]		

PRIMARY CAUSE OF DEATH - Pituitary Gland Hemorrhage

CONTRIBUTORY CAUSE OF DEATH - Brain Necrosis

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 746

TRT#: 8

SEX: Female

DAY ON TEST: 729

DOSE: 1800 PPM

DISP: Terminal Sacrifice

HISTO: 44758

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lung
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland
Peritoneum	Pleura	* Salivary Glands	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Trachea
* Urinary Bladder			

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Kidney		Nephropathy	Moderate
* Liver		Leukemia Mononuclear	
	Hepatocyte	Regeneration	Marked
[ Regeneration TGLS = 5-6 ]			
* Mammary Gland		Carcinoma	
Note: mammary ca adjacent to clitoral gland on slide 9			
Mesentery		Necrosis	Moderate
[ Necrosis TGLS = 4-14 ]			
* Nose	Respirat Epith	Degeneration	Hyaline, Mild
	Goblet Cell	Foreign Body	Moderate
		Hyperplasia	Mild
* Ovary		Granulosa Cell Tumor Benign	
* Pituitary Gland		Adenoma	
[ Adenoma TGLS = 2-10 ]			
* Spleen		Accessory Spleen	
		Leukemia Mononuclear	
[ Accessory Spleen TGLS = 3-6 ]			
[ Leukemia Mononuclear TGLS = 3-6 ]			

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01

**Test Type:** CHRONIC

**Route:** RESPIRATORY EXPOSURE WHOLE BODY

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Methyl isobutyl ketone

**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014

**Time Report Requested:** 22:41:43

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

**Lab:** BNW

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**ANIMAL ID:** 746

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 729

**DOSE:** 1800 PPM

**DISP:** Terminal Sacrifice

**HISTO:** 44758

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* Thyroid Gland

C Cell

Carcinoma

[ Carcinoma TGLS = 1-3 ]

\* Uterus

Polyp Stromal

[ Polyp Stromal TGLS = 6-10 ]

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PRIMARY CAUSE OF DEATH

-

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\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 747

TRT#: 8

SEX: Female

DAY ON TEST: 729

DOSE: 1800 PPM

DISP: Terminal Sacrifice

HISTO: 44759

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex          | * Adrenal Medulla           | Blood Vessel             | * Bone                     |
| * Bone Marrow             | * Brain                     | * Clitoral Gland         | * Esophagus                |
| * Harderian Gland         | * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic      | * Larynx                    | * Liver                  | * Lymph Node, Mediastinal  |
| * Lymph Node, Mesenteric  | * Nose                      | * Ovary                  | * Pancreas                 |
| * Parathyroid Gland       | Peritoneum                  | * Salivary Glands        | * Skin                     |
| * Stomach, Forestomach    | * Stomach, Glandular        | * Thymus                 | * Thyroid Gland            |
| * Trachea                 | * Urinary Bladder           | * Uterus                 |                            |

MISSING

- |                         |                          |
|-------------------------|--------------------------|
| * Lymph Node, Bronchial | * Lymph Node, Mandibular |
|-------------------------|--------------------------|

OBSERVATIONS

- |                             |            |                      |                  |
|-----------------------------|------------|----------------------|------------------|
| * Eye                       | Lens       | Cataract             | Mild             |
| * Kidney                    |            | Nephropathy          | Mild             |
| * Lung                      |            | Inflammation         | Chronic, Minimal |
| * Mammary Gland             |            | Carcinoma            |                  |
| [ Carcinoma TGLS = 1-14 ]   |            |                      |                  |
| * Pituitary Gland           |            | Adenoma              |                  |
| [ Adenoma TGLS = 2-10 ]     |            |                      |                  |
| Pleura                      |            | Fibrosis             | Minimal          |
| * Spleen                    |            | Leukemia Mononuclear |                  |
| Tongue                      | Epithelium | Hyperplasia          | Mild             |
| [ Hyperplasia TGLS = 3-14 ] |            |                      |                  |

PRIMARY CAUSE OF DEATH

-

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 748

TRT#: 8

SEX: Female

DAY ON TEST: 692

DOSE: 1800 PPM

DISP: Moribund Sacrifice

HISTO: 44760

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lymph Node, Mesenteric
* Mammary Gland	* Ovary	* Pancreas	* Parathyroid Gland
Peritoneum	Pleura	* Salivary Glands	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder	* Uterus	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Kidney		Nephropathy	Minimal
* Liver		Hepatodiaphragmatic Nodule	Marked
		Leukemia Mononuclear	
	[ Hepatodiaphragmatic Nodule TGLS = 4-15 ]		
	[ Leukemia Mononuclear TGLS = 5,6,7-6 ]		
* Lung	Interstitium	Fibrosis	Minimal
	Alveolar Epith	Hyperplasia	Minimal
	Bronchiole	Hyperplasia	Mild
	Alveolus	Infiltration Cellular	Histiocyte, Mild
		Leukemia Mononuclear	
	[ Fibrosis TGLS = 2-14 ]		
* Lymph Node, Mediastinal		Leukemia Mononuclear	
	[ Leukemia Mononuclear TGLS = 1-3 ]		
* Nose	Respirat Epith	Degeneration	Hyaline, Mild
* Pituitary Gland		Hyperplasia	Marked
	[ Hyperplasia TGLS = 3-10 ]		
* Spleen		Leukemia Mononuclear	
	[ Leukemia Mononuclear TGLS = 8-15 ]		

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 97006-01

**Test Type:** CHRONIC

**Route:** RESPIRATORY EXPOSURE WHOLE BODY

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

**Test Compound:** Methyl isobutyl ketone

**CAS Number:** 108-10-1

**Date Report Requested:** 10/16/2014

**Time Report Requested:** 22:41:43

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

**Lab:** BNW

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**ANIMAL ID:** 748

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 692

**DOSE:** 1800 PPM

**DISP:** Moribund Sacrifice

**HISTO:** 44760

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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PRIMARY CAUSE OF DEATH

- Spleen Leukemia Mononuclear

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\* PROTOCOL REQUIRED TISSUE



Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 749

TRT#: 8

SEX: Female

DAY ON TEST: 695

DOSE: 1800 PPM

DISP: Moribund Sacrifice

HISTO: 44761

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lymph Node, Mandibular
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Ovary	* Pancreas	* Parathyroid Gland	Peritoneum
Pleura	* Salivary Glands	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder	* Uterus		

MISSING

\* Lymph Node, Bronchial

OBSERVATIONS

* Kidney		Nephropathy	Minimal
* Liver		Leukemia Mononuclear	
	Hepatocyte	Regeneration	Marked
	[ Regeneration TGLS = 3,4,5-6+14+15 ]		
* Lung		Leukemia Mononuclear	
* Pituitary Gland		Hyperplasia	Marked
	[ Hyperplasia TGLS = 6-10 ]		
* Spleen		Leukemia Mononuclear	
	[ Leukemia Mononuclear TGLS = 2-16 ]		

PRIMARY CAUSE OF DEATH

- Spleen Leukemia Mononuclear

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 97006-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Methyl isobutyl ketone

CAS Number: 108-10-1

Date Report Requested: 10/16/2014

Time Report Requested: 22:41:43

First Dose M/F: NA / NA

Lab: BNW

ANIMAL ID: 750

TRT#: 8

SEX: Female

DAY ON TEST: 729

DOSE: 1800 PPM

DISP: Terminal Sacrifice

HISTO: 44762

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Liver
* Lung	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Nose	* Ovary	* Pancreas	* Parathyroid Gland
Peritoneum	Pleura	* Salivary Glands	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Kidney	Nephropathy	Mild
* Pituitary Gland	Hyperplasia	Marked
[ Hyperplasia TGLS = 1-10 ]		
* Spleen	Leukemia Mononuclear	
* Uterus	Polyp Stromal	

PRIMARY CAUSE OF DEATH

-

\*\* END OF REPORT \*\*

\* PROTOCOL REQUIRED TISSUE