

Experiment Number: 05197-09

Test Type: 90-DAY

Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Test Compound: 2-Butoxyethanol (ethylene glycol monobutyl ether)

CAS Number: 111-76-2

Date Report Requested: 10/22/2014

Time Report Requested: 19:25:03

First Dose M/F: NA / NA

Lab: BNW

C Number:

C62077D

Lock Date:

11/19/1992

Cage Range:

All

Date Range:

All

Reasons For Removal:

All

Removal Date Range:

All

Treatment Groups:

All

Study Gender:

Both

PWG Approval Date

NONE

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Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

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Date Report Requested: 10/22/2014

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First Dose M/F: NA / NA

Lab: BNW

F 344/N Rat Male
CONTROL

DAY ON TEST	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
	9	9	9	9	9	9	9	9	9	9
	3	3	3	3	3	3	3	3	3	3
ANIMAL ID	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	1
	1	2	3	4	5	6	7	8	9	0

*TOTALS

Alimentary System

Esophagus	+	+	+	+	+	+	+	+	+	+	10
Intestine Large, Cecum	+	+	+	+	+	+	+	+	+	+	10
Intestine Large, Colon	+	+	+	+	+	+	+	+	+	+	10
Intestine Large, Rectum	+	+	+	+	+	+	+	+	+	+	10
Intestine Small, Duodenum	+	+	+	+	+	+	+	+	+	+	10
Intestine Small, Ileum	+	+	+	+	+	+	+	+	+	+	10
Intestine Small, Jejunum	+	+	+	+	+	+	+	+	+	+	10
Liver	+	+	+	+	+	+	+	+	+	+	10
Mesentery		+									1
Fat, Necrosis		2									1 2.0
Pancreas	+	+	+	+	+	+	+	+	+	+	10
Salivary Glands	+	+	+	+	+	+	+	+	+	+	10
Stomach, Forestomach	+	+	+	+	+	+	+	+	+	+	10
Stomach, Glandular	+	+	+	+	+	+	+	+	+	+	10

Cardiovascular System

Heart	+	+	+	+	+	+	+	+	+	+	10
Cardiomyopathy	1		1	1	1	1	1	1	1	1	9 1.0

Endocrine System

Adrenal Cortex	+	+	+	+	+	+	+	+	+	+	10
Adrenal Medulla	+	+	+	+	+	+	+	+	+	+	10

* ..Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade

+ ..Tissue examined microscopically

X ..Lesion present

I ..Insufficient tissue

M ..Missing tissue

A ..Autolysis precludes evaluation

BLANK ..Not examined microscopically

1-4 ..Lesion qualified as:

1) Minimal 3) Moderate

2) Mild 4) Marked

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Species/Strain: Rat/F 344/N

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CAS Number: 111-76-2

Date Report Requested: 10/22/2014

Time Report Requested: 19:25:03

First Dose M/F: NA / NA

Lab: BNW

**F 344/N Rat Male
CONTROL**

	DAY ON TEST										
	0	0	0	0	0	0	0	0	0	0	
ANIMAL ID	0	0	0	0	0	0	0	0	0	0	*TOTALS
	3	3	3	3	3	3	3	3	3	3	
Islets, Pancreatic	+	+	+	+	+	+	+	+	+	+	10
Parathyroid Gland	+	+	+	+	I	+	+	+	+	M	8
Pituitary Gland	+	+	+	+	+	+	+	+	+	+	10
Thyroid Gland	+	+	+	+	+	+	+	+	+	+	10
General Body System											
NONE											
Genital System											
Epididymis	+	+	+	+	+	+	+	+	+	+	10
Preputial Gland	+	+	+	+	+	+	+	+	+	+	10
Prostate	+	+	+	+	+	+	+	+	+	+	10
Seminal Vesicle	+	+	+	+	+	+	+	+	+	+	10
Testes	+	+	+	+	+	+	+	+	+	+	10
Hematopoietic System											
Bone Marrow	+	+	+	+	+	+	+	+	+	+	10
Lymph Node, Bronchial	+	+	+	I	+	+	M	+	+	+	8
Lymph Node, Mandibular	+	+	+	+	+	+	+	+	+	+	10
Lymph Node, Mediastinal	+	+	+	+	+	+	M	+	+	+	9
Lymph Node, Mesenteric	+	+	+	+	+	+	+	+	+	+	10
Spleen	+	+	+	+	+	+	+	+	+	+	10
Thymus	+	+	+	+	+	+	+	+	+	+	10
Integumentary System											

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+ ..Tissue examined microscopically

X ..Lesion present

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Species/Strain: Rat/F 344/N

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CAS Number: 111-76-2

Date Report Requested: 10/22/2014

Time Report Requested: 19:25:03

First Dose M/F: NA / NA

Lab: BNW

F 344/N Rat Male
CONTROL

DAY ON TEST	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
	9	9	9	9	9	9	9	9	9	9
	3	3	3	3	3	3	3	3	3	3
ANIMAL ID	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	1
	1	2	3	4	5	6	7	8	9	0
	*TOTALS									

Integumentary System

Mammary Gland	M	+	+	M	+	+	+	M	+	M	6
Skin	+	+	+	+	+	+	+	+	+	+	10

Musculoskeletal System

Bone	+	+	+	+	+	+	+	+	+	+	10
------	---	---	---	---	---	---	---	---	---	---	----

Nervous System

Brain	+	+	+	+	+	+	+	+	+	+	10
-------	---	---	---	---	---	---	---	---	---	---	----

Respiratory System

Larynx	+	+	+	+	+	+	+	+	+	+	10
Lung	+	+	+	+	+	+	+	+	+	+	10
Hemorrhage						1					1 1.0
Nose	+	+	+	+	+	+	+	+	+	+	10
Trachea	+	+	+	+	+	+	+	+	+	+	10

Special Senses System

NONE

Urinary System

Kidney	+	+	+	+	+	+	+	+	+	+	10
Nephropathy				1							1 1.0
Renal Tubule, Regeneration	1				1		1			1	4 1.0

* ..Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade

+ ..Tissue examined microscopically

X ..Lesion present

I ..Insufficient tissue

M ..Missing tissue

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Experiment Number: 05197-09
 Test Type: 90-DAY
 Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL
 Test Compound: 2-Butoxyethanol (ethylene glycol monobutyl ether)
 CAS Number: 111-76-2

Date Report Requested: 10/22/2014
 Time Report Requested: 19:25:03
 First Dose M/F: NA / NA
 Lab: BNW

**F 344/N Rat Male
 CONTROL**

DAY ON TEST	0	0	0	0	0	0	0	0	0	0	
	0	0	0	0	0	0	0	0	0	0	
	9	9	9	9	9	9	9	9	9	9	
	3	3	3	3	3	3	3	3	3	3	
ANIMAL ID	0	0	0	0	0	0	0	0	0	0	
	0	0	0	0	0	0	0	0	0	0	
	0	0	0	0	0	0	0	0	0	0	
	0	0	0	0	0	0	0	0	0	1	
	1	2	3	4	5	6	7	8	9	0	*TOTALS
Urinary Bladder	+	+	+	+	+	+	+	+	+	+	10

* ..Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade

+ ..Tissue examined microscopically

X ..Lesion present

I ..Insufficient tissue

M ..Missing tissue

A ..Autolysis precludes evaluation

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1-4 ..Lesion qualified as:

1) Minimal 3) Moderate

2) Mild 4) Marked

Experiment Number: 05197-09

Test Type: 90-DAY

Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Test Compound: 2-Butoxyethanol (ethylene glycol monobutyl ether)

CAS Number: 111-76-2

Date Report Requested: 10/22/2014

Time Report Requested: 19:25:03

First Dose M/F: NA / NA

Lab: BNW

**F 344/N Rat Male
31 PPM**

DAY ON TEST	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
	9	9	9	9	9	9	9	9	9	9
	3	3	3	3	3	3	3	3	3	3
ANIMAL ID	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
	2	2	2	2	2	2	2	2	2	2
	0	0	0	0	0	0	0	0	0	1
	1	2	3	4	5	6	7	8	9	0
	*TOTALS									

Alimentary System

Liver	+	+	+	+	+	+	+	+	+	+	10
Hepatodiaphragmatic Nodule					X	X		X			3
Stomach, Forestomach	+	+	+	+	+	+	+	+	+	+	10

Cardiovascular System

NONE

Endocrine System

NONE

General Body System

NONE

Genital System

NONE

Hematopoietic System

Bone Marrow	+	+	+	+	+	+	+	+	+	+	10
Spleen	+	+	+	+	+	+	+	+	+	+	10
Hematopoietic Cell Proliferation							1				1 1.0

Integumentary System

NONE

* ..Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade

+ ..Tissue examined microscopically

X ..Lesion present

I ..Insufficient tissue

M ..Missing tissue

A ..Autolysis precludes evaluation

BLANK ..Not examined microscopically

1-4 ..Lesion qualified as:

1) Minimal 3) Moderate

2) Mild 4) Marked

Experiment Number: 05197-09

Test Type: 90-DAY

Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Test Compound: 2-Butoxyethanol (ethylene glycol monobutyl ether)

CAS Number: 111-76-2

Date Report Requested: 10/22/2014

Time Report Requested: 19:25:04

First Dose M/F: NA / NA

Lab: BNW

**F 344/N Rat Male
31 PPM**

DAY ON TEST	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
	9	9	9	9	9	9	9	9	9	9
	3	3	3	3	3	3	3	3	3	3
ANIMAL ID	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
	2	2	2	2	2	2	2	2	2	2
	0	0	0	0	0	0	0	0	0	1
	1	2	3	4	5	6	7	8	9	0
	*TOTALS									

Musculoskeletal System

NONE

Nervous System

NONE

Respiratory System

NONE

Special Senses System

NONE

Urinary System

Kidney

+ + + + + + + + + + 10

* ..Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade

+ ..Tissue examined microscopically

X ..Lesion present

I ..Insufficient tissue

M ..Missing tissue

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1-4 ..Lesion qualified as:

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Experiment Number: 05197-09

Test Type: 90-DAY

Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Test Compound: 2-Butoxyethanol (ethylene glycol monobutyl ether)

CAS Number: 111-76-2

Date Report Requested: 10/22/2014

Time Report Requested: 19:25:04

First Dose M/F: NA / NA

Lab: BNW

**F 344/N Rat Male
62.5 PPM**

| | | | | | | | | | | |
|-------------|---------|---|---|---|---|---|---|---|---|---|
| DAY ON TEST | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 |
| | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| ANIMAL ID | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 |
| | *TOTALS | | | | | | | | | |

Alimentary System

| | | | | | | | | | | | |
|----------------------|---|---|---|---|---|---|---|---|---|---|----|
| Liver | + | + | + | + | + | + | + | + | + | + | 10 |
| Stomach, Forestomach | + | + | + | + | + | + | + | + | + | + | 10 |

Cardiovascular System

NONE

Endocrine System

NONE

General Body System

NONE

Genital System

NONE

Hematopoietic System

| | | | | | | | | | | | |
|-------------|---|---|---|---|---|---|---|---|---|---|----|
| Bone Marrow | + | + | + | + | + | + | + | + | + | + | 10 |
| Spleen | + | + | + | + | + | + | + | + | + | + | 10 |

Integumentary System

NONE

Musculoskeletal System

NONE

* ..Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade

+ ..Tissue examined microscopically

X ..Lesion present

I ..Insufficient tissue

M ..Missing tissue

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1-4 ..Lesion qualified as:

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Experiment Number: 05197-09

Test Type: 90-DAY

Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Test Compound: 2-Butoxyethanol (ethylene glycol monobutyl ether)

CAS Number: 111-76-2

Date Report Requested: 10/22/2014

Time Report Requested: 19:25:04

First Dose M/F: NA / NA

Lab: BNW

**F 344/N Rat Male
62.5 PPM**

| | | | | | | | | | | |
|-------------|---------|---|---|---|---|---|---|---|---|---|
| DAY ON TEST | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 |
| | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| ANIMAL ID | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 |
| | *TOTALS | | | | | | | | | |

Nervous System

NONE

Respiratory System

NONE

Special Senses System

NONE

Urinary System

| | | | | | | | | | | | |
|--------|---|---|---|---|---|---|---|---|---|---|----|
| Kidney | + | + | + | + | + | + | + | + | + | + | 10 |
|--------|---|---|---|---|---|---|---|---|---|---|----|

| | | | | | | | | | | | | |
|----------------------------|---|--|--|--|--|--|--|--|--|--|---|-----|
| Renal Tubule, Regeneration | 1 | | | | | | | | | | 1 | 1.0 |
|----------------------------|---|--|--|--|--|--|--|--|--|--|---|-----|

* ..Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade

+ ..Tissue examined microscopically

X ..Lesion present

I ..Insufficient tissue

M ..Missing tissue

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BLANK ..Not examined microscopically

1-4 ..Lesion qualified as:

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Experiment Number: 05197-09

Test Type: 90-DAY

Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Test Compound: 2-Butoxyethanol (ethylene glycol monobutyl ether)

CAS Number: 111-76-2

Date Report Requested: 10/22/2014

Time Report Requested: 19:25:04

First Dose M/F: NA / NA

Lab: BNW

F 344/N Rat Male
125 PPM

| DAY ON TEST | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
|-------------|---------|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 |
| | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| ANIMAL ID | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 |
| | *TOTALS | | | | | | | | | |

Alimentary System

| | | | | | | | | | | | |
|----------------------------|---|---|---|---|---|---|---|---|---|---|-------|
| Liver | + | + | + | + | + | + | + | + | + | + | 10 |
| Hepatodiaphragmatic Nodule | | | | | | | | X | | | 1 |
| Kupffer Cell, Pigmentation | 1 | 1 | | 1 | | | 1 | 1 | 1 | 1 | 7 1.0 |
| Stomach, Forestomach | + | + | + | + | + | + | + | + | + | + | 10 |

Cardiovascular System

NONE

Endocrine System

NONE

General Body System

NONE

Genital System

| | | | | | | | | | | | |
|-----------------|--|--|--|---|--|--|--|--|--|--|-------|
| Epididymis | | | | + | | | | | | | 1 |
| Granuloma Sperm | | | | 4 | | | | | | | 1 4.0 |

Hematopoietic System

| | | | | | | | | | | | |
|-------------|---|---|---|---|---|---|---|---|---|---|----|
| Bone Marrow | + | + | + | + | + | + | + | + | + | + | 10 |
| Spleen | + | + | + | + | + | + | + | + | + | + | 10 |

Integumentary System

NONE

* ..Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade

+ ..Tissue examined microscopically

X ..Lesion present

I ..Insufficient tissue

M ..Missing tissue

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Experiment Number: 05197-09

Test Type: 90-DAY

Species/Strain: Rat/F 344/N

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Test Compound: 2-Butoxyethanol (ethylene glycol monobutyl ether)

CAS Number: 111-76-2

Date Report Requested: 10/22/2014

Time Report Requested: 19:25:04

First Dose M/F: NA / NA

Lab: BNW

**F 344/N Rat Male
125 PPM**

| | | | | | | | | | | |
|-------------|---------|---|---|---|---|---|---|---|---|---|
| DAY ON TEST | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 |
| | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| ANIMAL ID | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 |
| | *TOTALS | | | | | | | | | |

Musculoskeletal System

NONE

Nervous System

NONE

Respiratory System

Lung

+ 1

Special Senses System

NONE

Urinary System

Kidney

+ + + + + + + + + + 10

Renal Tubule, Regeneration

1 1 1.0

* ..Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade

+ ..Tissue examined microscopically

X ..Lesion present

I ..Insufficient tissue

M ..Missing tissue

A ..Autolysis precludes evaluation

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1-4 ..Lesion qualified as:

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Test Type: 90-DAY

Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Test Compound: 2-Butoxyethanol (ethylene glycol monobutyl ether)

CAS Number: 111-76-2

Date Report Requested: 10/22/2014

Time Report Requested: 19:25:04

First Dose M/F: NA / NA

Lab: BNW

F 344/N Rat Male
250 PPM

| | | | | | | | | | | | |
|-------------|---|---|---|---|---|---|---|---|---|---|---------|
| DAY ON TEST | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | |
| | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | |
| ANIMAL ID | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | *TOTALS |

Alimentary System

| | | | | | | | | | | | | |
|----------------------------|---|---|---|---|---|---|---|---|---|---|----|-----|
| Liver | + | + | + | + | + | + | + | + | + | + | 10 | |
| Kupffer Cell, Pigmentation | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 10 | 1.0 |
| Stomach, Forestomach | + | + | + | + | + | + | + | + | + | + | 10 | |
| Epithelium, Hyperplasia | 1 | 2 | | 2 | | | | | | | 3 | 1.7 |
| Inflammation | 1 | 1 | | | | | | | | | 2 | 1.0 |

Cardiovascular System

NONE

Endocrine System

NONE

General Body System

NONE

Genital System

NONE

Hematopoietic System

| | | | | | | | | | | | | |
|------------------|---|---|---|---|---|---|---|---|---|---|----|-----|
| Bone Marrow | + | + | + | + | + | + | + | + | + | + | 10 | |
| Hyperplasia | 1 | 2 | 1 | 2 | 2 | 2 | 1 | 1 | 2 | 3 | 10 | 1.7 |
| Spleen | + | + | + | + | + | + | + | + | + | + | 10 | |
| Accessory Spleen | | | | X | | | | | | | | 1 |

* ..Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade

+ ..Tissue examined microscopically

X ..Lesion present

I ..Insufficient tissue

M ..Missing tissue

A ..Autolysis precludes evaluation

BLANK ..Not examined microscopically

1-4 ..Lesion qualified as:

1) Minimal 3) Moderate

2) Mild 4) Marked

Experiment Number: 05197-09

Test Type: 90-DAY

Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Test Compound: 2-Butoxyethanol (ethylene glycol monobutyl ether)

CAS Number: 111-76-2

Date Report Requested: 10/22/2014

Time Report Requested: 19:25:04

First Dose M/F: NA / NA

Lab: BNW

F 344/N Rat Male
250 PPM

| DAY ON TEST | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
|----------------------------------|----------------|---|---|---|---|---|---|---|---|---|----|-----|
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | | |
| | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | | |
| ANIMAL ID | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | | |
| | *TOTALS | | | | | | | | | | | |
| Hematopoietic Cell Proliferation | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 10 | 1.0 |
| Integumentary System | | | | | | | | | | | | |
| NONE | | | | | | | | | | | | |
| Musculoskeletal System | | | | | | | | | | | | |
| NONE | | | | | | | | | | | | |
| Nervous System | | | | | | | | | | | | |
| NONE | | | | | | | | | | | | |
| Respiratory System | | | | | | | | | | | | |
| NONE | | | | | | | | | | | | |
| Special Senses System | | | | | | | | | | | | |
| NONE | | | | | | | | | | | | |
| Urinary System | | | | | | | | | | | | |
| Kidney | + | + | + | + | + | + | + | + | + | + | 10 | |
| Renal Tubule, Pigmentation | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | 8 | 1.0 |

* ..Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade

+ ..Tissue examined microscopically

X ..Lesion present

I ..Insufficient tissue

M ..Missing tissue

A ..Autolysis precludes evaluation

BLANK ..Not examined microscopically

1-4 ..Lesion qualified as:

1) Minimal 3) Moderate

2) Mild 4) Marked

Experiment Number: 05197-09

Test Type: 90-DAY

Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Test Compound: 2-Butoxyethanol (ethylene glycol monobutyl ether)

CAS Number: 111-76-2

Date Report Requested: 10/22/2014

Time Report Requested: 19:25:04

First Dose M/F: NA / NA

Lab: BNW

F 344/N Rat Male
500 PPM

| DAY ON TEST | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
|-------------|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 |
| | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| ANIMAL ID | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 |

*TOTALS

Alimentary System

| | | | | | | | | | | | |
|----------------------------|---|---|---|---|---|---|---|---|---|---|--------|
| Esophagus | + | + | + | + | + | + | + | + | + | + | 10 |
| Intestine Large, Cecum | + | + | + | + | + | + | + | + | + | + | 10 |
| Intestine Large, Colon | + | + | + | + | + | + | + | + | + | + | 10 |
| Intestine Large, Rectum | + | + | + | + | + | + | + | + | + | + | 10 |
| Intestine Small, Duodenum | + | + | + | + | + | + | + | + | + | + | 10 |
| Intestine Small, Ileum | + | + | + | + | + | + | + | + | + | + | 10 |
| Intestine Small, Jejunum | + | + | + | + | + | + | + | + | + | + | 10 |
| Liver | + | + | + | + | + | + | + | + | + | + | 10 |
| Hepatodiaphragmatic Nodule | | | | | X | | | | | | 1 |
| Kupffer Cell, Pigmentation | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 10 1.0 |
| Pancreas | + | + | + | + | + | + | + | + | + | + | 10 |
| Salivary Glands | + | + | + | + | + | + | + | + | + | + | 10 |
| Stomach, Forestomach | + | + | + | + | + | + | + | + | + | + | 10 |
| Epithelium, Hyperplasia | | | | | 1 | | | | 1 | | 2 1.0 |
| Inflammation | | | | | 1 | | | | 1 | | 2 1.0 |
| Stomach, Glandular | + | + | + | + | + | + | + | + | + | + | 10 |

Cardiovascular System

| | | | | | | | | | | | |
|----------------|---|---|---|---|---|---|---|---|---|---|--------|
| Heart | + | + | + | + | + | + | + | + | + | + | 10 |
| Cardiomyopathy | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 10 1.0 |

Endocrine System

* ..Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade

+ ..Tissue examined microscopically

X ..Lesion present

I ..Insufficient tissue

M ..Missing tissue

A ..Autolysis precludes evaluation

BLANK ..Not examined microscopically

1-4 ..Lesion qualified as:

1) Minimal 3) Moderate

2) Mild 4) Marked

Experiment Number: 05197-09

Test Type: 90-DAY

Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Test Compound: 2-Butoxyethanol (ethylene glycol monobutyl ether)

CAS Number: 111-76-2

Date Report Requested: 10/22/2014

Time Report Requested: 19:25:04

First Dose M/F: NA / NA

Lab: BNW

F 344/N Rat Male
500 PPM

| | DAY ON TEST | | | | | | | | | | |
|-----------------------------|-------------|---|---|---|---|---|---|---|---|---|---------|
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | |
| | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | |
| ANIMAL ID | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | *TOTALS |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 0 | |
| Adrenal Cortex | + | + | + | + | + | + | + | + | + | + | 10 |
| Adrenal Medulla | + | + | + | + | + | + | + | + | + | + | 10 |
| Islets, Pancreatic | + | + | + | + | + | + | + | + | + | + | 10 |
| Parathyroid Gland | + | + | + | + | + | + | + | M | + | + | 9 |
| Pituitary Gland | + | + | + | + | + | + | + | + | + | + | 10 |
| Thyroid Gland | + | + | + | + | + | + | + | + | + | + | 10 |
| General Body System | | | | | | | | | | | |
| NONE | | | | | | | | | | | |
| Genital System | | | | | | | | | | | |
| Epididymis | + | + | + | + | + | + | + | + | + | + | 10 |
| Preputial Gland | + | + | + | + | + | + | + | + | + | + | 10 |
| Prostate | + | + | + | + | + | + | + | + | + | + | 10 |
| Seminal Vesicle | + | + | + | + | + | + | + | + | + | + | 10 |
| Testes | + | + | + | + | + | + | + | + | + | + | 10 |
| Atrophy | | | | | | 2 | | | | | 1 2.0 |
| Hematopoietic System | | | | | | | | | | | |
| Bone Marrow | + | + | + | + | + | + | + | + | + | + | 10 |
| Hyperplasia | 3 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 1 | 10 2.7 |
| Lymph Node, Bronchial | M | M | M | + | M | + | M | M | M | M | 2 |
| Lymph Node, Mandibular | + | + | + | + | M | + | M | M | M | + | 6 |
| Lymph Node, Mediastinal | + | M | + | M | M | + | M | M | M | M | 3 |

* ..Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade

+ ..Tissue examined microscopically

X ..Lesion present

I ..Insufficient tissue

M ..Missing tissue

A ..Autolysis precludes evaluation

BLANK ..Not examined microscopically

1-4 ..Lesion qualified as:

1) Minimal 3) Moderate

2) Mild 4) Marked

Experiment Number: 05197-09

Test Type: 90-DAY

Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Test Compound: 2-Butoxyethanol (ethylene glycol monobutyl ether)

CAS Number: 111-76-2

Date Report Requested: 10/22/2014

Time Report Requested: 19:25:04

First Dose M/F: NA / NA

Lab: BNW

F 344/N Rat Male
500 PPM

| | DAY ON TEST | | | | | | | | | | | |
|----------------------------------|-------------|---|---|---|---|---|---|---|---|---|---------|-----|
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| ANIMAL ID | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | *TOTALS | |
| | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | |
| Lymph Node, Mesenteric | + | + | M | + | + | + | + | + | + | + | 9 | |
| Spleen | + | + | + | + | + | + | + | + | + | + | 10 | |
| Hematopoietic Cell Proliferation | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 10 | 1.0 |
| Thymus | + | + | + | + | + | + | + | + | + | + | 10 | |
| Integumentary System | | | | | | | | | | | | |
| Mammary Gland | M | M | + | + | M | + | M | M | M | + | 4 | |
| Skin | + | + | + | + | + | + | + | + | + | + | 10 | |
| Musculoskeletal System | | | | | | | | | | | | |
| Bone | + | + | + | + | + | + | + | + | + | + | 10 | |
| Nervous System | | | | | | | | | | | | |
| Brain | + | + | + | + | + | + | + | + | + | + | 10 | |
| Respiratory System | | | | | | | | | | | | |
| Larynx | + | + | + | + | + | + | + | + | + | + | 10 | |
| Lung | + | + | + | + | + | + | + | + | + | + | 10 | |
| Nose | + | + | + | + | + | + | + | + | + | + | 10 | |
| Trachea | + | + | + | + | + | + | + | + | + | + | 10 | |
| Special Senses System | | | | | | | | | | | | |
| NONE | | | | | | | | | | | | |
| Urinary System | | | | | | | | | | | | |

* ..Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade

+ ..Tissue examined microscopically

X ..Lesion present

I ..Insufficient tissue

M ..Missing tissue

A ..Autolysis precludes evaluation

BLANK ..Not examined microscopically

1-4 ..Lesion qualified as:

1) Minimal 3) Moderate

2) Mild 4) Marked

Experiment Number: 05197-09

Test Type: 90-DAY

Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Test Compound: 2-Butoxyethanol (ethylene glycol monobutyl ether)

CAS Number: 111-76-2

Date Report Requested: 10/22/2014

Time Report Requested: 19:25:04

First Dose M/F: NA / NA

Lab: BNW

F 344/N Rat Male
500 PPM

| DAY ON TEST | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | *TOTALS |
|----------------------------|---|---|---|---|---|---|---|---|---|---|---------|
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| ANIMAL ID | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | |
| | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | |
| Kidney | + | + | + | + | + | + | + | + | + | + | 10 |
| Renal Tubule, Pigmentation | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 10 1.0 |
| Urinary Bladder | + | + | + | + | + | + | + | + | + | + | 10 |

END OF MALE DATA

* ..Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade

+ ..Tissue examined microscopically

X ..Lesion present

I ..Insufficient tissue

M ..Missing tissue

A ..Autolysis precludes evaluation

BLANK ..Not examined microscopically

1-4 ..Lesion qualified as:

1) Minimal 3) Moderate

2) Mild 4) Marked

Experiment Number: 05197-09

Test Type: 90-DAY

Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Test Compound: 2-Butoxyethanol (ethylene glycol monobutyl ether)

CAS Number: 111-76-2

Date Report Requested: 10/22/2014

Time Report Requested: 19:25:04

First Dose M/F: NA / NA

Lab: BNW

F 344/N Rat Female CONTROL

| DAY ON TEST | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
|-------------|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 |
| | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| ANIMAL ID | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 |

*TOTALS

Alimentary System

| | | | | | | | | | | | |
|----------------------------|---|---|---|---|---|---|---|---|---|---|----|
| Esophagus | + | + | + | + | M | + | + | + | + | + | 9 |
| Intestine Large, Cecum | + | + | + | + | + | + | + | + | + | + | 10 |
| Intestine Large, Colon | + | + | + | + | + | + | + | + | + | + | 10 |
| Intestine Large, Rectum | + | M | + | + | + | + | + | + | + | + | 9 |
| Intestine Small, Duodenum | + | + | + | + | + | + | + | + | + | + | 10 |
| Intestine Small, Ileum | + | + | + | + | + | + | + | + | + | + | 10 |
| Intestine Small, Jejunum | + | + | + | + | + | + | + | + | + | + | 10 |
| Liver | + | + | + | + | + | + | + | + | + | + | 10 |
| Eosinophilic Focus | | | | X | | | | | | | 1 |
| Hepatodiaphragmatic Nodule | | | | X | | | | | | | 1 |
| Pancreas | + | + | + | + | + | + | + | + | + | + | 10 |
| Salivary Glands | + | + | + | + | + | + | + | + | + | + | 10 |
| Stomach, Forestomach | + | + | + | + | + | + | + | + | + | + | 10 |
| Stomach, Glandular | + | + | + | + | + | + | + | + | + | + | 10 |

Cardiovascular System

| | | | | | | | | | | | |
|----------------|---|---|---|---|---|---|---|---|---|---|-------|
| Heart | + | + | + | + | + | + | + | + | + | + | 10 |
| Cardiomyopathy | 1 | 1 | | 1 | | 1 | 1 | | 1 | 1 | 7 1.0 |

Endocrine System

| | | | | | | | | | | | |
|-----------------|---|---|---|---|---|---|---|---|---|---|----|
| Adrenal Cortex | + | + | + | + | + | + | + | + | + | + | 10 |
| Adrenal Medulla | + | + | + | + | + | + | + | + | + | + | 10 |

* ..Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade

+ ..Tissue examined microscopically

X ..Lesion present

I ..Insufficient tissue

M ..Missing tissue

A ..Autolysis precludes evaluation

BLANK ..Not examined microscopically

1-4 ..Lesion qualified as:

1) Minimal 3) Moderate

2) Mild 4) Marked

Experiment Number: 05197-09

Test Type: 90-DAY

Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Test Compound: 2-Butoxyethanol (ethylene glycol monobutyl ether)

CAS Number: 111-76-2

Date Report Requested: 10/22/2014

Time Report Requested: 19:25:04

First Dose M/F: NA / NA

Lab: BNW

**F 344/N Rat Female
CONTROL**

| | DAY ON TEST | | | | | | | | | | *TOTALS |
|-----------------------------|-------------|---|---|---|---|---|---|---|---|---|---------|
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| ANIMAL ID | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | |
| Islets, Pancreatic | + | + | + | + | + | + | + | + | + | + | 10 |
| Parathyroid Gland | + | + | M | + | M | + | + | M | + | + | 7 |
| Pituitary Gland | + | + | + | + | + | + | + | + | + | + | 10 |
| Thyroid Gland | + | + | + | + | + | + | + | + | + | + | 10 |
| General Body System | | | | | | | | | | | |
| NONE | | | | | | | | | | | |
| Genital System | | | | | | | | | | | |
| Clitoral Gland | + | + | + | + | + | + | + | + | + | + | 10 |
| Ovary | + | + | + | + | + | + | + | + | + | + | 10 |
| Uterus | + | + | + | + | + | + | + | + | + | + | 10 |
| Hematopoietic System | | | | | | | | | | | |
| Bone Marrow | + | + | + | + | + | + | + | + | + | + | 10 |
| Lymph Node, Bronchial | + | + | M | + | M | M | + | + | M | + | 6 |
| Lymph Node, Mandibular | + | + | + | + | + | + | + | + | + | + | 10 |
| Lymph Node, Mediastinal | M | + | + | + | + | + | + | + | + | M | 8 |
| Lymph Node, Mesenteric | + | + | + | + | + | + | + | + | + | + | 10 |
| Spleen | + | + | + | + | + | + | + | + | + | + | 10 |
| Thymus | + | + | + | + | + | + | + | + | + | + | 10 |
| Integumentary System | | | | | | | | | | | |
| Mammary Gland | + | + | + | + | + | + | + | + | + | + | 10 |
| Skin | + | + | + | + | + | + | + | + | + | + | 10 |

* ..Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade

+ ..Tissue examined microscopically

X ..Lesion present

I ..Insufficient tissue

M ..Missing tissue

A ..Autolysis precludes evaluation

BLANK ..Not examined microscopically

1-4 ..Lesion qualified as:

1) Minimal 3) Moderate

2) Mild 4) Marked

Experiment Number: 05197-09

Test Type: 90-DAY

Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Test Compound: 2-Butoxyethanol (ethylene glycol monobutyl ether)

CAS Number: 111-76-2

Date Report Requested: 10/22/2014

Time Report Requested: 19:25:04

First Dose M/F: NA / NA

Lab: BNW

F 344/N Rat Female
CONTROL

| DAY ON TEST | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
|-------------|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 |
| | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| ANIMAL ID | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 |

*TOTALS

| | | | | | | | | | | | |
|---------------------------------------------|---|---|---|---|---|---|---|---|---|---|-------|
| Skin | + | + | + | + | + | + | + | + | + | + | 10 |
| Musculoskeletal System | | | | | | | | | | | |
| Bone | + | + | + | + | + | + | + | + | + | + | 10 |
| Fracture | | X | | | | | | | | | 1 |
| Nervous System | | | | | | | | | | | |
| Brain | + | + | + | + | + | + | + | + | + | + | 10 |
| Developmental Malformation | | X | | | | | | | | | 1 |
| Inflammation | | 1 | | | | | | | | | 1 1.0 |
| Mineralization | | 2 | | | | | | | | | 1 2.0 |
| Respiratory System | | | | | | | | | | | |
| Larynx | + | + | + | + | + | + | + | + | + | + | 10 |
| Lung | + | + | + | + | + | + | + | + | + | + | 10 |
| Alveolus, Infiltration Cellular, Histiocyte | | | | 1 | | | | | | | 1 1.0 |
| Nose | + | + | + | + | + | + | + | + | + | + | 10 |
| Inflammation | | | | 1 | | 1 | | | | | 2 1.0 |
| Trachea | + | + | + | + | + | + | + | + | + | + | 10 |
| Special Senses System | | | | | | | | | | | |
| NONE | | | | | | | | | | | |
| Urinary System | | | | | | | | | | | |
| Kidney | + | + | + | + | + | + | + | + | + | + | 10 |

* ..Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade

+ ..Tissue examined microscopically

X ..Lesion present

I ..Insufficient tissue

M ..Missing tissue

A ..Autolysis precludes evaluation

BLANK ..Not examined microscopically

1-4 ..Lesion qualified as:

1) Minimal 3) Moderate

2) Mild 4) Marked

Experiment Number: 05197-09
 Test Type: 90-DAY
 Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL
 Test Compound: 2-Butoxyethanol (ethylene glycol monobutyl ether)
 CAS Number: 111-76-2

Date Report Requested: 10/22/2014
 Time Report Requested: 19:25:04
 First Dose M/F: NA / NA
 Lab: BNW

**F 344/N Rat Female
 CONTROL**

| DAY ON TEST | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
|-----------------|---|---|---|---|---|---|---|---|---|---|----------------|
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | |
| | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | |
| ANIMAL ID | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | *TOTALS |
| Urinary Bladder | + | + | + | + | + | + | + | + | + | + | 10 |

* ..Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade

+ ..Tissue examined microscopically

X ..Lesion present

I ..Insufficient tissue

M ..Missing tissue

A ..Autolysis precludes evaluation

BLANK ..Not examined microscopically

1-4 ..Lesion qualified as:

1) Minimal 3) Moderate

2) Mild 4) Marked

Experiment Number: 05197-09

Test Type: 90-DAY

Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Test Compound: 2-Butoxyethanol (ethylene glycol monobutyl ether)

CAS Number: 111-76-2

Date Report Requested: 10/22/2014

Time Report Requested: 19:25:04

First Dose M/F: NA / NA

Lab: BNW

**F 344/N Rat Female
31 PPM**

| DAY ON TEST | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
|-------------|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 |
| | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| ANIMAL ID | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 |

***TOTALS**

Alimentary System

| | | | | | | | | | | | |
|----------------------------|---|---|---|---|---|---|---|---|---|---|----|
| Liver | + | + | + | + | + | + | + | + | + | + | 10 |
| Hepatodiaphragmatic Nodule | | | | | | | | X | | | 1 |
| Salivary Glands | + | + | + | + | + | + | + | + | + | + | 10 |
| Stomach, Forestomach | + | + | + | + | + | + | + | + | + | + | 10 |
| Stomach, Glandular | | + | | | | | | | | | 1 |

Cardiovascular System

NONE

Endocrine System

NONE

General Body System

NONE

Genital System

| | | | | | | | | | | | |
|-------|---|--|--|---|--|--|--|--|--|--|-------|
| Ovary | + | | | + | | | | | | | 2 |
| Cyst | 2 | | | 2 | | | | | | | 2 2.0 |

Hematopoietic System

| | | | | | | | | | | | |
|-------------|---|---|---|---|---|---|---|---|---|---|----|
| Bone Marrow | + | + | + | + | + | + | + | + | + | + | 10 |
| Spleen | + | + | + | + | + | + | + | + | + | + | 10 |
| Thymus | + | + | + | + | + | + | + | + | + | + | 10 |

* ..Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade

+ ..Tissue examined microscopically

X ..Lesion present

I ..Insufficient tissue

M ..Missing tissue

A ..Autolysis precludes evaluation

BLANK ..Not examined microscopically

1-4 ..Lesion qualified as:

1) Minimal 3) Moderate

2) Mild 4) Marked

Experiment Number: 05197-09

Test Type: 90-DAY

Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Test Compound: 2-Butoxyethanol (ethylene glycol monobutyl ether)

CAS Number: 111-76-2

Date Report Requested: 10/22/2014

Time Report Requested: 19:25:05

First Dose M/F: NA / NA

Lab: BNW

**F 344/N Rat Female
31 PPM**

| | | | | | | | | | | |
|-------------|---------|---|---|---|---|---|---|---|---|---|
| DAY ON TEST | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 |
| | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| ANIMAL ID | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 |
| | *TOTALS | | | | | | | | | |

Integumentary System

NONE

Musculoskeletal System

Bone + + + + + + + + + + 10

Nervous System

NONE

Respiratory System

Nose + + + + + + + + + + 10

Inflammation 1 1 1 1 1 1 1 1 1 3 1.0

Special Senses System

NONE

Urinary System

Kidney + + + + + + + + + + 10

* ..Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade

+ ..Tissue examined microscopically

X ..Lesion present

I ..Insufficient tissue

M ..Missing tissue

A ..Autolysis precludes evaluation

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Experiment Number: 05197-09

Test Type: 90-DAY

Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Test Compound: 2-Butoxyethanol (ethylene glycol monobutyl ether)

CAS Number: 111-76-2

Date Report Requested: 10/22/2014

Time Report Requested: 19:25:05

First Dose M/F: NA / NA

Lab: BNW

F 344/N Rat Female
62.5 PPM

| DAY ON TEST | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
|-------------|---|---|---|---|---|---|---|---|---|---|---------|
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | |
| | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | |
| ANIMAL ID | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | *TOTALS |

Alimentary System

| | | | | | | | | | | | | |
|----------------------------|---|---|---|---|---|---|---|---|---|---|----|-----|
| Liver | + | + | + | + | + | + | + | + | + | + | 10 | |
| Basophilic Focus | | | | | | | | | X | | 1 | |
| Hepatodiaphragmatic Nodule | X | | X | | | | X | | X | | 4 | |
| Kupffer Cell, Pigmentation | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 10 | 1.0 |
| Salivary Glands | + | + | + | + | + | + | + | + | + | + | 10 | |
| Stomach, Forestomach | + | + | + | + | + | + | + | + | + | + | 10 | |
| Inflammation | | | | | | 1 | | | | | 1 | 1.0 |

Cardiovascular System

NONE

Endocrine System

NONE

General Body System

NONE

Genital System

NONE

Hematopoietic System

| | | | | | | | | | | | | |
|-------------|---|---|---|---|---|---|---|---|---|---|----|-----|
| Bone Marrow | + | + | + | + | + | + | + | + | + | + | 10 | |
| Hyperplasia | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | | 1 | 8 | 1.0 |

* ..Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade

+ ..Tissue examined microscopically

X ..Lesion present

I ..Insufficient tissue

M ..Missing tissue

A ..Autolysis precludes evaluation

BLANK ..Not examined microscopically

1-4 ..Lesion qualified as:

1) Minimal 3) Moderate

2) Mild 4) Marked

Experiment Number: 05197-09

Test Type: 90-DAY

Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Test Compound: 2-Butoxyethanol (ethylene glycol monobutyl ether)

CAS Number: 111-76-2

Date Report Requested: 10/22/2014

Time Report Requested: 19:25:05

First Dose M/F: NA / NA

Lab: BNW

F 344/N Rat Female
62.5 PPM

| DAY ON TEST | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | ANIMAL ID | *TOTALS |
|------------------------------------|---|---|---|---|---|---|---|---|---|---|-----------|---------|
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | | |
| | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | | |
| Inflammation, Granulomatous | | | 1 | | 2 | | | | 1 | | 3 | 1.3 |
| Lymph Node | + | | | | | | | | | | 1 | |
| Renal, Inflammation, Granulomatous | 2 | | | | | | | | | | 1 | 2.0 |
| Spleen | + | + | + | + | + | + | + | + | + | + | 10 | |
| Hematopoietic Cell Proliferation | | | | 1 | | | | | | | 1 | 1.0 |
| Thymus | + | + | + | + | + | + | + | + | + | + | 10 | |
| Integumentary System | | | | | | | | | | | | |
| NONE | | | | | | | | | | | | |
| Musculoskeletal System | | | | | | | | | | | | |
| Bone | + | + | + | + | + | + | + | + | + | + | 10 | |
| Nervous System | | | | | | | | | | | | |
| NONE | | | | | | | | | | | | |
| Respiratory System | | | | | | | | | | | | |
| Nose | + | + | + | + | + | + | + | + | + | + | 10 | |
| Inflammation | 1 | | 2 | | | 1 | | | 1 | 1 | 5 | 1.2 |
| Special Senses System | | | | | | | | | | | | |
| NONE | | | | | | | | | | | | |
| Urinary System | | | | | | | | | | | | |
| Kidney | + | + | + | + | + | + | + | + | + | + | 10 | |

* ..Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade

+ ..Tissue examined microscopically

X ..Lesion present

I ..Insufficient tissue

M ..Missing tissue

A ..Autolysis precludes evaluation

BLANK ..Not examined microscopically

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1) Minimal 3) Moderate

2) Mild 4) Marked

Experiment Number: 05197-09

Test Type: 90-DAY

Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Test Compound: 2-Butoxyethanol (ethylene glycol monobutyl ether)

CAS Number: 111-76-2

Date Report Requested: 10/22/2014

Time Report Requested: 19:25:05

First Dose M/F: NA / NA

Lab: BNW

F 344/N Rat Female
125 PPM

| DAY ON TEST | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
|-------------|---------|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 |
| | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| ANIMAL ID | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 |
| | *TOTALS | | | | | | | | | |

Alimentary System

| | | | | | | | | | | | |
|----------------------------|---|---|---|---|---|---|---|---|---|---|--------|
| Liver | + | + | + | + | + | + | + | + | + | + | 10 |
| Hepatodiaphragmatic Nodule | | | | | | | | X | | | 1 |
| Kupffer Cell, Pigmentation | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 10 1.0 |
| Salivary Glands | + | + | + | + | + | + | + | + | + | + | 10 |
| Stomach, Forestomach | + | + | + | + | + | + | + | + | + | + | 10 |

Cardiovascular System

NONE

Endocrine System

NONE

General Body System

NONE

Genital System

NONE

Hematopoietic System

| | | | | | | | | | | | |
|------------------------------------|---|---|---|---|---|---|---|---|---|---|--------|
| Bone Marrow | + | + | + | + | + | + | + | + | + | + | 10 |
| Hyperplasia | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 10 2.0 |
| Lymph Node | | | | | | | | | | + | 1 |
| Renal, Inflammation, Granulomatous | | | | | | | | | | 2 | 1 2.0 |

* ..Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade

+ ..Tissue examined microscopically

X ..Lesion present

I ..Insufficient tissue

M ..Missing tissue

A ..Autolysis precludes evaluation

BLANK ..Not examined microscopically

1-4 ..Lesion qualified as:

1) Minimal 3) Moderate

2) Mild 4) Marked

Experiment Number: 05197-09

Test Type: 90-DAY

Species/Strain: Rat/F 344/N

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Test Compound: 2-Butoxyethanol (ethylene glycol monobutyl ether)

CAS Number: 111-76-2

Date Report Requested: 10/22/2014

Time Report Requested: 19:25:05

First Dose M/F: NA / NA

Lab: BNW

F 344/N Rat Female
125 PPM

| | DAY ON TEST | | | | | | | | | | | |
|----------------------------------|-------------|---|---|---|---|---|---|---|---|---|---------|-----|
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| ANIMAL ID | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | *TOTALS | |
| | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | | |
| Spleen | + | + | + | + | + | + | + | + | + | + | 10 | |
| Hematopoietic Cell Proliferation | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 10 | 1.0 |
| Thymus | + | + | + | + | + | + | + | + | + | + | 10 | |
| Integumentary System | | | | | | | | | | | | |
| NONE | | | | | | | | | | | | |
| Musculoskeletal System | | | | | | | | | | | | |
| Bone | + | + | + | + | + | + | + | + | + | + | 10 | |
| Nervous System | | | | | | | | | | | | |
| NONE | | | | | | | | | | | | |
| Respiratory System | | | | | | | | | | | | |
| Nose | + | + | + | + | + | + | + | + | + | + | 10 | |
| Inflammation | | | | 2 | | 1 | | | | | 2 | 1.5 |
| Special Senses System | | | | | | | | | | | | |
| NONE | | | | | | | | | | | | |
| Urinary System | | | | | | | | | | | | |
| Kidney | + | + | + | + | + | + | + | + | + | + | 10 | |
| Renal Tubule, Pigmentation | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 10 | 1.0 |

* ..Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade

+ ..Tissue examined microscopically

X ..Lesion present

I ..Insufficient tissue

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CAS Number: 111-76-2

Date Report Requested: 10/22/2014

Time Report Requested: 19:25:05

First Dose M/F: NA / NA

Lab: BNW

F 344/N Rat Female
250 PPM

| DAY ON TEST | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
|-------------|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 9 | 9 | 9 | 9 | 9 | 9 | 5 | 9 | 9 | 9 |
| | 3 | 3 | 3 | 3 | 3 | 3 | 0 | 3 | 3 | 3 |
| ANIMAL ID | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 |

*TOTALS

Alimentary System

| | | | | | | | | | | | |
|----------------------------|---|---|---|---|---|---|---|---|---|---|--------|
| Esophagus | + | + | + | + | + | + | + | + | + | + | 10 |
| Intestine Large, Cecum | + | + | + | + | + | + | + | + | + | + | 10 |
| Intestine Large, Colon | + | + | + | + | + | + | + | + | + | + | 10 |
| Intestine Large, Rectum | + | + | + | + | + | + | + | + | + | + | 10 |
| Intestine Small, Duodenum | + | + | + | + | + | + | + | + | + | + | 10 |
| Intestine Small, Ileum | + | + | + | + | + | + | + | + | + | + | 10 |
| Intestine Small, Jejunum | + | + | + | + | + | + | + | + | + | + | 10 |
| Liver | + | + | + | + | + | + | + | + | + | + | 10 |
| Kupffer Cell, Pigmentation | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 10 1.0 |
| Necrosis | | | | | | | 1 | | | | 1 1.0 |
| Pancreas | + | + | + | + | + | + | + | + | + | + | 10 |
| Salivary Glands | + | + | + | + | + | + | + | + | + | + | 10 |
| Stomach, Forestomach | + | + | + | + | + | + | + | + | + | + | 10 |
| Epithelium, Hyperplasia | | | | | | | | | 1 | | 1 1.0 |
| Stomach, Glandular | + | + | + | + | + | + | + | + | + | + | 10 |

Cardiovascular System

| | | | | | | | | | | | |
|----------------|---|---|---|---|---|---|---|---|---|---|-------|
| Heart | + | + | + | + | + | + | + | + | + | + | 10 |
| Angiectasis | | | | 2 | | | | | | | 1 2.0 |
| Cardiomyopathy | 1 | 1 | 1 | 1 | 1 | 1 | | 1 | 1 | | 8 1.0 |

Endocrine System

* ..Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade

+ ..Tissue examined microscopically

X ..Lesion present

I ..Insufficient tissue

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2) Mild 4) Marked

Experiment Number: 05197-09

Test Type: 90-DAY

Species/Strain: Rat/F 344/N

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Test Compound: 2-Butoxyethanol (ethylene glycol monobutyl ether)

CAS Number: 111-76-2

Date Report Requested: 10/22/2014

Time Report Requested: 19:25:05

First Dose M/F: NA / NA

Lab: BNW

F 344/N Rat Female
250 PPM

| DAY ON TEST | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | *TOTALS |
|-----------------------------|---|---|---|---|---|---|---|---|---|---|---------|
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| ANIMAL ID | 9 | 9 | 9 | 9 | 9 | 9 | 5 | 9 | 9 | 9 | |
| | 3 | 3 | 3 | 3 | 3 | 3 | 0 | 3 | 3 | 3 | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | |
| Adrenal Cortex | + | + | + | + | + | + | + | + | + | + | 10 |
| Adrenal Medulla | + | + | + | + | + | + | + | + | + | + | 10 |
| Islets, Pancreatic | + | + | + | + | + | + | + | + | + | + | 10 |
| Parathyroid Gland | + | + | + | + | + | + | + | + | + | M | 9 |
| Pituitary Gland | + | + | + | + | + | + | + | + | + | + | 10 |
| Thyroid Gland | + | + | + | + | + | + | + | + | + | + | 10 |
| C Cell, Hyperplasia | | | | | | | | 1 | | | 1 1.0 |
| General Body System | | | | | | | | | | | |
| NONE | | | | | | | | | | | |
| Genital System | | | | | | | | | | | |
| Clitoral Gland | + | + | + | + | + | + | + | + | + | + | 10 |
| Ovary | + | + | + | + | + | + | + | + | + | + | 10 |
| Cyst | | | | | | | 2 | | | | 1 2.0 |
| Uterus | + | + | + | + | + | + | + | + | + | + | 10 |
| Hematopoietic System | | | | | | | | | | | |
| Bone Marrow | + | + | + | + | + | + | + | + | + | + | 10 |
| Hyperplasia | 3 | 2 | 3 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 10 2.5 |
| Lymph Node, Bronchial | M | + | M | M | M | + | M | M | + | + | 4 |
| Lymph Node, Mandibular | + | + | + | + | + | + | + | + | + | + | 10 |
| Lymph Node, Mediastinal | M | M | + | M | M | M | M | M | M | M | 1 |
| Lymph Node, Mesenteric | + | + | + | + | + | + | + | + | + | + | 10 |

* ..Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade

+ ..Tissue examined microscopically

X ..Lesion present

I ..Insufficient tissue

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BLANK ..Not examined microscopically

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Experiment Number: 05197-09

Test Type: 90-DAY

Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Test Compound: 2-Butoxyethanol (ethylene glycol monobutyl ether)

CAS Number: 111-76-2

Date Report Requested: 10/22/2014

Time Report Requested: 19:25:05

First Dose M/F: NA / NA

Lab: BNW

F 344/N Rat Female
250 PPM

| DAY ON TEST | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
|-------------|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 9 | 9 | 9 | 9 | 9 | 9 | 5 | 9 | 9 | 9 |
| | 3 | 3 | 3 | 3 | 3 | 3 | 0 | 3 | 3 | 3 |
| ANIMAL ID | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 |

*TOTALS

| | | | | | | | | | | | | | |
|--------------------------------------|---|---|---|---|---|---|---|---|---|---|----|-----|--|
| Spleen | + | + | + | + | + | + | + | + | + | + | 10 | | |
| Hematopoietic Cell Proliferation | 1 | 1 | 1 | | 1 | 1 | | 1 | 1 | 1 | 8 | 1.0 | |
| Thymus | + | + | + | + | + | + | + | + | + | + | 10 | | |
| Integumentary System | | | | | | | | | | | | | |
| Mammary Gland | + | + | + | + | + | + | + | + | + | + | 10 | | |
| Skin | + | + | + | + | + | + | + | + | + | + | 10 | | |
| Musculoskeletal System | | | | | | | | | | | | | |
| Bone | + | + | + | + | + | + | + | + | + | + | 10 | | |
| Nervous System | | | | | | | | | | | | | |
| Brain | + | + | + | + | + | + | + | + | + | + | 10 | | |
| Respiratory System | | | | | | | | | | | | | |
| Larynx | + | + | + | + | + | + | + | + | + | + | 10 | | |
| Inflammation | | | | | | | 2 | | | | 1 | 2.0 | |
| Metaplasia, Squamous | | | | | | | 2 | 1 | | | 2 | 1.5 | |
| Lung | + | + | + | + | + | + | + | + | + | + | 10 | | |
| Foreign Body | | | | | | | X | | | | 1 | | |
| Inflammation, Granulomatous, Focal | | | | | | | 2 | | | | 1 | 2.0 | |
| Nose | + | + | + | + | + | + | + | + | + | + | 10 | | |
| Inflammation | 2 | 1 | 3 | 1 | | | 2 | 1 | 2 | 1 | 8 | 1.6 | |
| Respirat Epith, Metaplasia, Squamous | | | | | | | 3 | | | | 1 | 3.0 | |
| Trachea | + | + | + | + | + | + | + | + | + | + | 10 | | |

* ..Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade

+ ..Tissue examined microscopically

X ..Lesion present

I ..Insufficient tissue

M ..Missing tissue

A ..Autolysis precludes evaluation

BLANK ..Not examined microscopically

1-4 ..Lesion qualified as:

1) Minimal 3) Moderate

2) Mild 4) Marked

Experiment Number: 05197-09

Test Type: 90-DAY

Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Test Compound: 2-Butoxyethanol (ethylene glycol monobutyl ether)

CAS Number: 111-76-2

Date Report Requested: 10/22/2014

Time Report Requested: 19:25:05

First Dose M/F: NA / NA

Lab: BNW

**F 344/N Rat Female
250 PPM**

| | | | | | | | | | | |
|-------------|---|---|---|---|---|---|---|---|---|---|
| DAY ON TEST | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 9 | 9 | 9 | 9 | 9 | 9 | 5 | 9 | 9 | 9 |
| | 3 | 3 | 3 | 3 | 3 | 3 | 0 | 3 | 3 | 3 |
| ANIMAL ID | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 |

*TOTALS

Special Senses System

NONE

Urinary System

| | | | | | | | | | | | |
|----------------------------|---|---|---|---|---|---|---|---|---|---|--------|
| Kidney | + | + | + | + | + | + | + | + | + | + | 10 |
| Renal Tubule, Pigmentation | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 10 1.0 |
| Renal Tubule, Regeneration | | | | | | | 1 | | | | 1 1.0 |
| Urinary Bladder | + | + | + | + | + | + | M | + | + | + | 9 |

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X ..Lesion present

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CAS Number: 111-76-2

Date Report Requested: 10/22/2014

Time Report Requested: 19:25:05

First Dose M/F: NA / NA

Lab: BNW

F 344/N Rat Female
500 PPM

| DAY ON TEST | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
|-------------|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 9 | 9 | 0 | 0 | 0 | 3 | 9 | 0 | 9 | 9 |
| | 3 | 3 | 4 | 4 | 4 | 2 | 3 | 4 | 3 | 3 |
| ANIMAL ID | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 |

*TOTALS

Alimentary System

| | | | | | | | | | | | |
|-----------------------------|---|---|---|---|---|---|---|---|---|---|-------|
| Esophagus | + | + | + | + | + | + | + | + | + | + | 10 |
| Intestine Large, Cecum | + | + | + | + | + | + | + | + | + | + | 10 |
| Intestine Large, Colon | + | + | + | + | + | + | + | + | + | + | 10 |
| Intestine Large, Rectum | + | + | + | + | + | M | + | + | + | + | 9 |
| Intestine Small, Duodenum | + | + | + | + | + | + | + | + | + | + | 10 |
| Intestine Small, Ileum | + | + | + | + | + | + | + | + | + | + | 10 |
| Intestine Small, Jejunum | + | + | + | + | + | + | + | + | + | + | 10 |
| Liver | + | + | + | + | + | + | + | + | + | + | 10 |
| Centrilobular, Degeneration | | | 1 | 1 | 3 | | | 3 | | | 4 2.0 |
| Hepatodiaphragmatic Nodule | | | | | | X | | | X | | 2 |
| Kupffer Cell, Pigmentation | 1 | 1 | | | | 1 | 1 | | 1 | 1 | 6 1.0 |
| Necrosis | | | 2 | 1 | 2 | | | 3 | | | 4 2.0 |
| Vein, Thrombosis | | | 1 | | 1 | | | 1 | | | 3 1.0 |
| Pancreas | + | + | + | + | + | + | + | + | + | + | 10 |
| Atrophy | | | 1 | | | | | | | | 1 1.0 |
| Salivary Glands | + | + | + | M | + | + | + | + | + | + | 9 |
| Necrosis | | | | | 2 | | | 2 | | | 2 2.0 |
| Stomach, Forestomach | + | + | + | + | + | + | + | + | + | + | 10 |
| Epithelium, Hyperplasia | 1 | | 1 | | | | | | | | 2 1.0 |
| Inflammation | | | 1 | | 2 | | | 2 | | | 3 1.7 |
| Necrosis | | | | | 1 | | | 2 | | | 2 1.5 |

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Experiment Number: 05197-09

Test Type: 90-DAY

Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Test Compound: 2-Butoxyethanol (ethylene glycol monobutyl ether)

CAS Number: 111-76-2

Date Report Requested: 10/22/2014

Time Report Requested: 19:25:05

First Dose M/F: NA / NA

Lab: BNW

F 344/N Rat Female
500 PPM

| DAY ON TEST | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
|-------------|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 9 | 9 | 0 | 0 | 0 | 3 | 9 | 0 | 9 | 9 |
| | 3 | 3 | 4 | 4 | 4 | 2 | 3 | 4 | 3 | 3 |
| ANIMAL ID | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 |

*TOTALS

| | | | | | | | | | | | | | |
|------------------------------|---|---|---|---|---|---|---|---|---|----|-----|---|-----|
| Ulcer | | | | | 2 | | 2 | | | 2 | 2.0 | | |
| Stomach, Glandular | + | + | + | + | + | + | + | + | + | 10 | | | |
| Tooth, Incisor | | | | + | + | + | | + | | 4 | | | |
| Odontoblast, Degeneration | | | | 2 | 2 | 2 | | 2 | | 4 | 2.0 | | |
| Pulp, Thrombosis | | | | 2 | 2 | 2 | | 2 | | 4 | 2.0 | | |
| Cardiovascular System | | | | | | | | | | | | | |
| Heart | + | + | + | + | + | + | + | + | + | 10 | | | |
| Atrium, Thrombosis | | | | | | | | 2 | | 1 | 2.0 | | |
| Cardiomyopathy | | | 1 | | 2 | 1 | 1 | 1 | 2 | 1 | 1 | 8 | 1.3 |
| Endocrine System | | | | | | | | | | | | | |
| Adrenal Cortex | + | + | + | + | + | + | + | + | + | 10 | | | |
| Vacuolization Cytoplasmic | | | | | 1 | | | | | 1 | 1.0 | | |
| Adrenal Medulla | + | + | + | M | M | + | + | + | + | 8 | | | |
| Islets, Pancreatic | + | + | + | + | + | + | + | + | + | 10 | | | |
| Parathyroid Gland | + | + | + | + | + | M | + | M | + | 8 | | | |
| Pituitary Gland | + | + | + | + | + | + | + | + | + | 10 | | | |
| Thyroid Gland | + | + | + | + | + | + | + | + | + | 10 | | | |
| General Body System | | | | | | | | | | | | | |
| NONE | | | | | | | | | | | | | |
| Genital System | | | | | | | | | | | | | |
| Clitoral Gland | + | + | + | + | + | + | + | + | + | 10 | | | |

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+ ..Tissue examined microscopically

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I ..Insufficient tissue

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Experiment Number: 05197-09

Test Type: 90-DAY

Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Test Compound: 2-Butoxyethanol (ethylene glycol monobutyl ether)

CAS Number: 111-76-2

Date Report Requested: 10/22/2014

Time Report Requested: 19:25:05

First Dose M/F: NA / NA

Lab: BNW

F 344/N Rat Female
500 PPM

| DAY ON TEST | ANIMAL ID | | | | | | | | | | *TOTALS | |
|----------------------------------|-----------|---|---|---|---|---|---|---|---|---|---------|--------|
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | 9 | 9 | 0 | 0 | 0 | 3 | 9 | 0 | 9 | 9 | | |
| | 3 | 3 | 4 | 4 | 4 | 2 | 3 | 4 | 3 | 3 | | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | |
| | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | | |
| Clitoral Gland | + | + | + | + | + | + | + | + | + | + | 10 | |
| Ovary | + | + | + | + | + | + | + | + | + | + | 10 | |
| Cyst | | | | | | | | | | 1 | | 1 1.0 |
| Uterus | + | + | + | + | + | + | + | + | + | + | 10 | |
| Hematopoietic System | | | | | | | | | | | | |
| Bone Marrow | + | + | + | + | + | + | + | + | + | + | 10 | |
| Hyperplasia | 3 | 3 | | | | 2 | 3 | | 3 | 3 | | 6 2.8 |
| Tail, Vertebra, Inflammation | 2 | 2 | | | | | | | | | | 2 2.0 |
| Tail, Vertebra, Necrosis | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | | 10 2.0 |
| Lymph Node, Bronchial | M | + | M | M | M | + | M | M | M | + | 3 | |
| Lymph Node, Mandibular | M | + | + | M | + | + | + | + | + | + | 8 | |
| Lymph Node, Mediastinal | + | + | + | M | M | + | + | M | + | + | 7 | |
| Lymph Node, Mesenteric | + | + | + | + | + | + | + | + | + | + | 10 | |
| Spleen | + | + | + | + | + | + | + | + | + | + | 10 | |
| Atrophy | | | | | 2 | | | | | | | 1 2.0 |
| Hematopoietic Cell Proliferation | 1 | 1 | 2 | | | 1 | 2 | | 2 | 1 | | 7 1.4 |
| Thymus | + | + | + | + | + | + | + | + | + | + | 10 | |
| Atrophy | | | 1 | 2 | 3 | | | 4 | | | | 4 2.5 |
| Integumentary System | | | | | | | | | | | | |
| Mammary Gland | + | + | + | + | + | + | + | + | + | + | 10 | |
| Skin | + | + | + | + | + | + | + | + | + | + | 10 | |
| Tail, Necrosis | | | | 4 | | | | | | | | 1 4.0 |

* ..Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade

+ ..Tissue examined microscopically

X ..Lesion present

I ..Insufficient tissue

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Experiment Number: 05197-09

Test Type: 90-DAY

Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Test Compound: 2-Butoxyethanol (ethylene glycol monobutyl ether)

CAS Number: 111-76-2

Date Report Requested: 10/22/2014

Time Report Requested: 19:25:05

First Dose M/F: NA / NA

Lab: BNW

F 344/N Rat Female
500 PPM

| DAY ON TEST | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
|-------------|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 9 | 9 | 0 | 0 | 0 | 3 | 9 | 0 | 9 | 9 |
| | 3 | 3 | 4 | 4 | 4 | 2 | 3 | 4 | 3 | 3 |
| ANIMAL ID | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 |

*TOTALS

Musculoskeletal System

| | | | | | | | | | | | |
|--------------------------------|---|---|---|---|---|---|---|---|---|---|--------|
| Bone | + | + | + | + | + | + | + | + | + | + | 9 |
| Bone, Femur | | | | + | + | | | | | | 2 |
| Thrombosis | | | | 1 | 1 | | | | | | 2 1.0 |
| Bone, Vertebra | + | + | + | + | + | + | + | + | + | + | 10 |
| Blood Vessel, Tail, Thrombosis | | | 2 | 2 | 2 | | | 2 | | | 4 2.0 |
| Tail, Infarct | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 10 3.0 |

Nervous System

| | | | | | | | | | | | |
|-------|---|---|---|---|---|---|---|---|---|---|----|
| Brain | + | + | + | + | + | + | + | + | + | + | 10 |
|-------|---|---|---|---|---|---|---|---|---|---|----|

Respiratory System

| | | | | | | | | | | | |
|---------------------------------------------|---|---|---|---|---|---|---|---|---|---|-------|
| Larynx | + | + | + | + | + | + | + | + | + | + | 10 |
| Lung | + | + | + | + | + | + | + | + | + | + | 10 |
| Alveolus, Infiltration Cellular, Histiocyte | | | | | | | | | | 1 | 1 1.0 |
| Thrombosis | | | | 1 | 1 | | | 1 | | | 3 1.0 |
| Nose | + | + | + | + | + | + | + | + | + | + | 10 |
| Inflammation | | | 1 | | | 1 | | | 2 | 2 | 4 1.5 |
| Respirat Epith, Metaplasia, Squamous | | | | | | 2 | | | | | 1 2.0 |
| Thrombosis | | | | 2 | 2 | | | 2 | | | 3 2.0 |
| Trachea | + | + | + | + | + | + | + | + | + | + | 10 |

Special Senses System

NONE

* ..Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade

+ ..Tissue examined microscopically

X ..Lesion present

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2) Mild 4) Marked

Experiment Number: 05197-09

Test Type: 90-DAY

Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Test Compound: 2-Butoxyethanol (ethylene glycol monobutyl ether)

CAS Number: 111-76-2

Date Report Requested: 10/22/2014

Time Report Requested: 19:25:06

First Dose M/F: NA / NA

Lab: BNW

**F 344/N Rat Female
500 PPM**

| | | | | | | | | | | | |
|-------------|---|---|---|---|---|---|---|---|---|---|---------|
| DAY ON TEST | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 9 | 9 | 0 | 0 | 0 | 3 | 9 | 0 | 9 | 9 | |
| | 3 | 3 | 4 | 4 | 4 | 2 | 3 | 4 | 3 | 3 | |
| ANIMAL ID | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | |
| | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | *TOTALS |

NONE

Urinary System

| | | | | | | | | | | | |
|----------------------------|---|---|---|---|---|---|---|---|---|---|-------|
| Kidney | + | + | + | + | + | + | + | + | + | + | 10 |
| Renal Tubule, Degeneration | | | 2 | 2 | 2 | | | 2 | | | 4 2.0 |
| Renal Tubule, Pigmentation | 1 | 1 | | 1 | | 1 | 1 | | 1 | 1 | 7 1.0 |
| Urinary Bladder | + | + | 1 | + | + | + | + | + | + | + | 9 |

**** END OF REPORT ****

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