

TDMS No. 20515 - 01

Test Type: 90-DAY

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: RATS/F344/N Tac

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Metal working fluids (CIMSTAR 3800)

CAS Number: CIMSTAR3800

Date Report Requested: 10/21/2008

Time Report Requested: 07:18:15

First Dose M/F: 06/12/06 / 06/12/06

Lab: BNW

F1_RD

C Number: C20515
Lock Date: 04/04/2007
Cage Range: ALL
Date Range: ALL
Reasons For Removal: ALL
Removal Date Range: ALL
Treatment Groups: Include ALL
Study Gender: Both
TDMSE Version: 2.0.0

DAY ON TEST		0	0	0	0	0	0	0	0	0	0
FISCHER 344-TACONIC RATS		0	0	0	0	0	0	0	0	0	0
MALE		0	0	0	0	0	0	0	0	0	0
ANIMAL ID		0	0	0	0	0	0	0	0	0	0
0 mg/m3		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
Mesentery								+			1
Fat, Necrosis								2			1 2.0
Pancreas	+	+	+	+	+	+	+	+	+	+	10
Atrophy							1				1 1.0
Salivary Glands	+	+	+	+	+	+	+	+	+	+	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

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	
0 mg/m3		1	2	3	4	5	6	7	8	9	0	* TOTALS

Stomach, Forestomach	+	+	+	+	+	+	+	+	+	+	+	10
Stomach, Glandular	+	+	+	+	+	+	+	+	+	+	+	10

CARDIOVASCULAR SYSTEM

Heart	+	+	+	+	+	+	+	+	+	+	10
Cardiomyopathy		1	1	1	1	1	1				6 1.0

ENDOCRINE SYSTEM

Adrenal Cortex	+	+	+	+	+	+	+	+	+	+	10
Adrenal Medulla	+	+	+	+	+	+	+	+	+	+	10
Islets, Pancreatic	+	+	+	+	+	+	+	+	+	+	10
Parathyroid Gland	+	+	+	+	+	+	+	+	+	+	10
Pituitary Gland	+	+	+	+	+	+	+	+	+	+	10
Thyroid Gland	+	+	+	+	+	+	+	+	+	+	10

GENERAL BODY SYSTEM

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 Page 3

DAY ON TEST		0	0	0	0	0	0	0	0	0	0
FISCHER 344-TACONIC RATS		0	0	0	0	0	0	0	0	0	0
MALE		0	0	0	0	0	0	0	0	0	0
ANIMAL ID		0	0	0	0	0	0	0	0	0	0
0 mg/m3		1	2	3	4	5	6	7	8	9	0
* TOTALS											

NONE

GENITAL SYSTEM

Epididymis	+	+	+	+	+	+	+	+	+	+	10
Preputial Gland Inflammation, Chronic Active	+	+	+	+	+	+	+	+	+	+	10 1 1.0
Prostate	+	+	+	+	+	+	+	+	+	+	10
Seminal Vesicle	+	+	+	+	+	+	+	+	+	+	10
Testes	+	+	+	+	+	+	+	+	+	+	10

HEMATOPOIETIC SYSTEM

Bone Marrow	+	+	+	+	+	+	+	+	+	+	10
Lymph Node, Bronchial	M	+	M	+	+	+	+	+	+	+	8
Lymph Node, Mandibular	+	+	+	+	+	+	+	+	+	M	9
Lymph Node, Mediastinal	+	+	+	+	+	+	+	+	+	+	10

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DAY ON TEST		0	0	0	0	0	0	0	0	0	0	
FISCHER 344-TACONIC RATS MALE		0	0	0	0	0	0	0	0	0	0	
ANIMAL ID		0	0	0	0	0	0	0	0	0	0	
0 mg/m3		0	0	0	0	0	0	0	0	0	0	
		1	2	3	4	5	6	7	8	9	0	* TOTALS
Lymph Node, Mesenteric		+	+	+	+	+	+	+	+	+	+	10
Spleen		+	+	+	+	+	+	+	+	+	+	10
Thymus		+	+	+	+	+	+	+	+	+	+	10
INTEGUMENTARY SYSTEM												
Mammary Gland		+	I	M	+	+	+	+	+	M	M	6
Skin		+	+	+	+	+	+	+	+	+	+	10
MUSCULOSKELETAL SYSTEM												
Bone		+	+	+	+	+	+	+	+	+	+	10
NERVOUS SYSTEM												
Brain		+	+	+	+	+	+	+	+	+	+	10
RESPIRATORY SYSTEM												
Larynx		+	+	+	+	+	+	+	+	+	+	10
Inflammation, Chronic Active					1							1 1.0

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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	
<hr/>											
FISCHER 344-TACONIC RATS	0	0	0	0	0	0	0	0	0	0	
MALE	0	0	0	0	0	0	0	0	0	0	
	0	0	0	0	0	0	0	0	0	0	
ANIMAL ID	0	0	0	0	0	0	0	0	0	0	1
0 mg/m3	1	2	3	4	5	6	7	8	9	0	* TOTALS
<hr/>											
Lung	+	+	+	+	+	+	+	+	+	+	10
Inflammation, Chronic Active	1	2	2	2	2	2	1	1	2	2	10 1.7
<hr/>											
Nose	+	+	+	+	+	+	+	+	+	+	10
Olfactory Epithelium, Accumulation, Hyaline Droplet	1										1 1.0
<hr/>											
Trachea	+	+	+	+	+	+	+	+	+	+	10
<hr/>											
SPECIAL SENSES SYSTEM											
<hr/>											
Eye	+	+	+	+	+	+	+	+	+	+	10
<hr/>											
Harderian Gland	+	+	+	+	+	+	+	+	+	+	10
<hr/>											
URINARY SYSTEM											
<hr/>											
Kidney	+	+	+	+	+	+	+	+	+	+	10
Nephropathy	1		1	1	1	1	1	1	1	1	9 1.0
<hr/>											
Urinary Bladder	+	+	+	+	+	+	+	+	+	+	10
<hr/>											

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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	
.....											
FISCHER 344-TACONIC RATS	0	0	0	0	0	0	0	0	0	0	
MALE	0	0	0	0	0	0	0	0	0	0	
ANIMAL ID	2	2	2	2	2	2	2	2	2	2	
25 mg/m3	0	0	0	0	0	0	0	0	0	1	
	1	2	3	4	5	6	7	8	9	0	* TOTALS

ALIMENTARY SYSTEM

Liver	+	+										2
Hepatodiaphragmatic Nodule	X	X										2

CARDIOVASCULAR SYSTEM

NONE

ENDOCRINE SYSTEM

NONE

GENERAL BODY SYSTEM

NONE

GENITAL SYSTEM

NONE

HEMATOPOIETIC SYSTEM

NONE

INTEGUMENTARY SYSTEM

NONE

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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	
.....											
FISCHER 344-TACONIC RATS	0	0	0	0	0	0	0	0	0	0	
MALE	0	0	0	0	0	0	0	0	0	0	
ANIMAL ID	2	2	2	2	2	2	2	2	2	2	
25 mg/m3	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

Larynx	+	+	+	+	+	+	+	+	+	+	10
Inflammation, Chronic Active	1	1	1	1	1	1	1	2	1	1	9 1.1
Metaplasia, Squamous	3	3	4	3	3	3	3	3	3	3	10 3.1
Squamous Epithelium, Hyperplasia		1	1		1	1	1			1	6 1.0
.....											
Lung	+	+	+	+	+	+	+	+	+	+	10
Inflammation, Chronic Active	1	1	1	1	1		1	2	1	1	9 1.1
.....											
Nose	+	+	+	+	+	+	+	+	+	+	10
Foreign Body	X										1
Goblet Cell, Hyperplasia	2	1	2	2	1	1	1	1	1	1	10 1.3
Olfactory Epithelium, Accumulation, Hyaline Droplet	3	3	3	3	3	3	3	3	3	3	10 3.0
Olfactory Epithelium, Inflammation, Suppurative	1	1	1	1	1	1	1	2	1	2	10 1.2
Respiratory Epithelium, Accumulation, Hyaline Droplet	2	3	3	3	3	3	1	3	2	3	10 2.6
Respiratory Epithelium, Inflammation, Suppurative	1	1	1	1	1	1	1	2	1	2	10 1.2

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TDMS No. 20515 - 01

Test Type: 90-DAY

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: RATS/F344/N Tac

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Metal working fluids (CIMSTAR 3800)

CAS Number: CIMSTAR3800

Date Report Requested: 10/21/2008

Time Report Requested: 07:18:15

First Dose M/F: 06/12/06 / 06/12/06

Lab: BNW

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

**FISCHER 344-TACONIC RATS
MALE**

25 mg/m3

ANIMAL ID

0	0	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	2
0	0	0	0	0	0	0	0	0	0	1
1	2	3	4	5	6	7	8	9		0

*** TOTALS**

Trachea

+ + + + + + + + + +

10

SPECIAL SENSES SYSTEM

NONE

URINARY SYSTEM

NONE

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1-4 .. Lesion qualified as:

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2) Mild 4) Marked

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	
.....											
FISCHER 344-TACONIC RATS	0	0	0	0	0	0	0	0	0	0	
MALE	0	0	0	0	0	0	0	0	0	0	
ANIMAL ID	4	4	4	4	4	4	4	4	4	4	
	0	0	0	0	0	0	0	0	0	1	
50 mg/m3	1	2	3	4	5	6	7	8	9	0	* TOTALS

ALIMENTARY SYSTEM

Liver		+									1
Hepatodiaphragmatic Nodule		X									1

CARDIOVASCULAR SYSTEM

NONE

ENDOCRINE SYSTEM

NONE

GENERAL BODY SYSTEM

NONE

GENITAL SYSTEM

NONE

HEMATOPOIETIC SYSTEM

NONE

INTEGUMENTARY SYSTEM

NONE

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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	
.....											
FISCHER 344-TACONIC RATS	0	0	0	0	0	0	0	0	0	0	
MALE	0	0	0	0	0	0	0	0	0	0	
ANIMAL ID	4	4	4	4	4	4	4	4	4	4	
	0	0	0	0	0	0	0	0	0	1	
50 mg/m3	1	2	3	4	5	6	7	8	9	0	* TOTALS

MUSCULOSKELETAL SYSTEM

NONE

NERVOUS SYSTEM

NONE

RESPIRATORY SYSTEM

Larynx	+	+	+	+	+	+	+	+	+	+	10
Inflammation, Chronic Active	1	2	1	1	1	2	1	1	2	1	10 1.3
Metaplasia, Squamous	4	4	4	4	4	4	4	4	4	3	10 3.9
Squamous Epithelium, Hyperplasia		1	1				1	1	1		5 1.0
.....											
Lung	+	+	+	+	+	+	+	+	+	+	10
Inflammation, Chronic Active	1	1	1	1	1	1	3	3	3	1	10 1.6
.....											
Nose	+	+	+	+	+	+	+	+	+	+	10
Goblet Cell, Hyperplasia	2	2	1	2	2	2	1	1	2	1	10 1.6
Olfactory Epithelium, Accumulation, Hyaline Droplet	3	3	3	3	3	3	3	3	3	3	10 3.0
Olfactory Epithelium, Inflammation, Suppurative	1	2	1	1	2	2	1	1	1	1	10 1.3
Respiratory Epithelium, Accumulation, Hyaline Droplet	2	2	1	3	1	1	1	3	3	1	10 1.8
Respiratory Epithelium, Inflammation, Suppurative	1	2	1	1	2	2	1	1	1	1	10 1.3

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Metal working fluids (CIMSTAR 3800)

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Time Report Requested: 07:18:15

First Dose M/F: 06/12/06 / 06/12/06

Lab: BNW

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
.....										
FISCHER 344-TACONIC RATS	0	0	0	0	0	0	0	0	0	0
MALE	0	0	0	0	0	0	0	0	0	0
50 mg/m3	4	4	4	4	4	4	4	4	4	4
ANIMAL ID	0	0	0	0	0	0	0	0	0	1
	1	2	3	4	5	6	7	8	9	0
										* TOTALS
Trachea	+	+	+	+	+	+	+	+	+	+
										10

SPECIAL SENSES SYSTEM

NONE

URINARY SYSTEM

NONE

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	0	0	0	0	0	0	0	0	0	0	
DAY ON TEST	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	
.....											
FISCHER 344-TACONIC RATS	0	0	0	0	0	0	0	0	0	0	
MALE	0	0	0	0	0	0	0	0	0	0	
	6	6	6	6	6	6	6	6	6	6	
ANIMAL ID	0	0	0	0	0	0	0	0	0	1	
100 mg/m3	1	2	3	4	5	6	7	8	9	0	* TOTALS

ALIMENTARY SYSTEM

NONE

CARDIOVASCULAR SYSTEM

NONE

ENDOCRINE SYSTEM

NONE

GENERAL BODY SYSTEM

NONE

GENITAL SYSTEM

NONE

HEMATOPOIETIC SYSTEM

NONE

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

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DAY ON TEST		0	0	0	0	0	0	0	0	0	0
FISCHER 344-TACONIC RATS		0	0	0	0	0	0	0	0	0	0
MALE		0	0	0	0	0	0	0	0	0	0
ANIMAL ID		6	6	6	6	6	6	6	6	6	6
100 mg/m3		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

Larynx	+	+	+	+	+	+	+	+	+	+	10
Inflammation, Chronic Active	1	1	1	2	2	2	1	1	2	2	10 1.5
Metaplasia, Squamous	4	4	4	4	4	4	4	4	4	4	10 4.0
Squamous Epithelium, Hyperplasia	1	1	1	2	1	2	1	1	1	2	10 1.3
Lung	+	+	+	+	+	+	+	+	+	+	10
Inflammation, Chronic Active	1	1	1	1	1	2	1	1	2	2	10 1.3
Metaplasia, Osseous				1							1 1.0
Nose	+	+	+	+	+	+	+	+	+	+	10
Goblet Cell, Hyperplasia	1	2	2	1	2	2	2	1	2	2	10 1.7
Olfactory Epithelium, Accumulation, Hyaline Droplet	3	3	3	3	3	3	3	3	3	3	10 3.0
Olfactory Epithelium, Inflammation, Suppurative	1	1	2	1	2	1	1	1	1	2	10 1.3
Respiratory Epithelium, Accumulation, Hyaline Droplet	3	2	2	2	3	3	2	3	2	2	10 2.4
Respiratory Epithelium, Inflammation, Suppurative	1	1	2	1	2	1	1	1	1	2	10 1.3
Trachea	+	+	+	+	+	+	+	+	+	+	10

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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

**FISCHER 344-TACONIC RATS
MALE**

ANIMAL ID

100 mg/m3

0	0	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	6
0	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

NONE

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

+ .. Tissue examined microscopically

x .. Lesion present

l .. 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

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

**FISCHER 344-TACONIC RATS
MALE**

ANIMAL ID

200 mg/m3

	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**

INTEGUMENTARY SYSTEM

NONE

MUSCULOSKELETAL SYSTEM

NONE

NERVOUS SYSTEM

NONE

RESPIRATORY SYSTEM

Larynx	+	+	+	+	+	+	+	+	+	+	10
Inflammation, Chronic Active	1	2	2	2	3	2	3	2	2	1	10 2.0
Metaplasia, Squamous	4	4	4	4	4	4	4	4	4	4	10 4.0
Squamous Epithelium, Hyperplasia	1	2	1	2	2	2	1	2	2	1	10 1.6
Lung	+	+	+	+	+	+	+	+	+	+	10
Inflammation, Chronic Active	1	2	2	1	1	2	1	1	1	1	10 1.3
Metaplasia, Osseous					1						1 1.0
Alveolus, Infiltration Cellular, Histiocyte	1				1	1	1	1	1	1	7 1.0
Nose	+	+	+	+	+	+	+	+	+	+	10
Goblet Cell, Hyperplasia	1	2	2	1	2	2	2	2	2	2	10 1.8
Olfactory Epithelium, Accumulation, Hyaline Droplet	3	3	3	3	3	3	3	3	3	3	10 3.0
Olfactory Epithelium, Inflammation,	2	1	1	2	2	2	1	2	2	1	10 1.6

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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

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	
.....											
FISCHER 344-TACONIC RATS	0	0	0	0	0	0	0	0	0	0	
MALE	0	0	0	0	0	0	0	0	0	0	
ANIMAL ID	8	8	8	8	8	8	8	8	8	8	
200 mg/m3	0	0	0	0	0	0	0	0	0	0	
	1	2	3	4	5	6	7	8	9	0	* TOTALS
Suppurative Respiratory Epithelium, Accumulation, Hyaline Droplet	3	3	3	3	3	2	3	3	2	3	10 2.8
Respiratory Epithelium, Inflammation, Suppurative	2	1	1	2	2	2	1	2	2	1	10 1.6
.....											
Trachea	+	+	+	+	+	+	+	+	+	+	10

SPECIAL SENSES SYSTEM

NONE

URINARY 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

DAY ON TEST		0	0	0	0	0	0	0	0	0	0
FISCHER 344-TACONIC RATS		0	0	0	0	0	0	0	0	0	0
MALE		1	1	1	1	1	1	1	1	1	1
ANIMAL ID		0	0	0	0	0	0	0	0	0	0
400 mg/m3		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
Pancreas	+	+	+	+	+	+	+	+	+	+	10
Salivary Glands	+	+	+	+	+	+	+	+	+	+	10
Stomach, Forestomach	+	+	+	+	+	+	+	+	+	+	10
Stomach, Glandular	+	+	+	+	+	+	+	+	+	+	10

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

+ .. Tissue examined microscopically

x .. Lesion present

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1-4 .. Lesion qualified as:

1) Minimal 3) Moderate

2) Mild 4) Marked

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
.....										
FISCHER 344-TACONIC RATS	0	0	0	0	0	0	0	0	0	0
MALE	1	1	1	1	1	1	1	1	1	1
	0	0	0	0	0	0	0	0	0	0
ANIMAL ID	0	0	0	0	0	0	0	0	0	1
400 mg/m3	1	2	3	4	5	6	7	8	9	0
										* TOTALS

CARDIOVASCULAR SYSTEM

Heart	+	+	+	+	+	+	+	+	+	+	10
Cardiomyopathy		1		1		1		1	1	1	6 1.0

ENDOCRINE SYSTEM

Adrenal Cortex	+	+	+	+	+	+	+	+	+	+	10
Adrenal Medulla	+	+	+	+	+	+	+	+	+	+	10
Islets, Pancreatic	+	+	+	+	+	+	+	+	+	+	10
Parathyroid Gland	+	+	+	+	+	+	+	+	+	+	10
Pituitary Gland	+	+	+	+	+	+	+	+	+	+	10
Thyroid Gland	+	+	+	+	+	+	+	+	+	+	10

GENERAL BODY SYSTEM

NONE

GENITAL 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

DAY ON TEST		0	0	0	0	0	0	0	0	0	0	
FISCHER 344-TACONIC RATS MALE		0	0	0	0	0	0	0	0	0	0	
ANIMAL ID		1	1	1	1	1	1	1	1	1	1	
400 mg/m3		0	0	0	0	0	0	0	0	0	0	
		1	2	3	4	5	6	7	8	9	0	* TOTALS
Epididymis		+	+	+	+	+	+	+	+	+	+	10
Preputial Gland Inflammation, Chronic Active		+	+	+	+	+	+	+	+	+	+	10
			1				1					2 1.0
Prostate		+	+	+	+	+	+	+	+	+	+	10
Seminal Vesicle		+	+	+	+	+	+	+	+	+	+	10
Testes		+	+	+	+	+	+	+	+	+	+	10

HEMATOPOIETIC SYSTEM

Bone Marrow		+	+	+	+	+	+	+	+	+	+	10
Lymph Node, Bronchial		+	+	+	+	M	+	+	M	+	+	8
Lymph Node, Mandibular		+	+	+	+	+	+	+	+	+	+	10
Lymph Node, Mediastinal		+	+	+	+	+	+	+	+	+	+	10
Lymph Node, Mesenteric		+	+	+	+	+	+	+	+	+	+	10
Spleen		+	+	+	+	+	+	+	+	+	+	10
Thymus		+	+	+	+	+	+	+	+	+	+	10

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1-4 .. Lesion qualified as:

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2) Mild 4) Marked

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
.....										
FISCHER 344-TACONIC RATS	0	0	0	0	0	0	0	0	0	0
MALE	1	1	1	1	1	1	1	1	1	1
	0	0	0	0	0	0	0	0	0	0
ANIMAL ID	0	0	0	0	0	0	0	0	0	1
400 mg/m3	1	2	3	4	5	6	7	8	9	0
										* TOTALS

INTEGUMENTARY SYSTEM

Mammary Gland	M	+	M	+	+	M	M	M	+	+	5
Skin	+	+	+	+	+	+	+	+	+	+	10

MUSCULOSKELETAL SYSTEM

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

NERVOUS SYSTEM

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

RESPIRATORY SYSTEM

Larynx	+	+	+	+	+	+	+	+	+	+	10	
Inflammation, Chronic Active	1	3	3	2	3	3	1	3	3	3		10 2.5
Metaplasia, Squamous	4	4	4	4	4	4	4	4	4	4		10 4.0
Squamous Epithelium, Hyperplasia	1	2	2	1	2	2	1	2	2	2		10 1.7
Lung	+	+	+	+	+	+	+	+	+	+	10	
Inflammation, Chronic Active	1	1	1	2	1	2	1	1	2	1		10 1.3
Alveolus, Infiltration Cellular, Histiocyte	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

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1-4 .. Lesion qualified as:

1) Minimal 3) Moderate

2) Mild 4) Marked

DAY ON TEST	0	0	0	0	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	9	9
	3	3	3	3	3	3	3	3	3	3	3	3

FISCHER 344-TACONIC RATS MALE	ANIMAL ID	0	0	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	1
		0	0	0	0	0	0	0	0	0	0	0
		0	0	0	0	0	0	0	0	0	0	1
400 mg/m3		1	2	3	4	5	6	7	8	9	0	

* TOTALS

Nose	+	+	+	+	+	+	+	+	+	+	+	10
Foreign Body			X									1
Goblet Cell, Hyperplasia	2	2	2	2	2	2	2	2	1	2		10 1.9
Olfactory Epithelium, Accumulation, Hyaline Droplet	3	3	3	3	3	3	3	3	3	3		10 3.0
Olfactory Epithelium, Inflammation, Suppurative	2	2	1	2	2	1	1	2	2	2		10 1.7
Olfactory Epithelium, Necrosis			1									1 1.0
Respiratory Epithelium, Accumulation, Hyaline Droplet	3	3	2	3	3	3	2	3	3	3		10 2.8
Respiratory Epithelium, Hyperplasia			1									1 1.0
Respiratory Epithelium, Inflammation, Suppurative	2	2	1	2	2	1	1	2	2	2		10 1.7
Trachea	+	+	+	+	+	+	+	+	+	+	+	10
Metaplasia, Squamous			1									1 1.0

SPECIAL SENSES SYSTEM

Eye	+	+	+	+	+	+	+	+	+	+	+	10
Harderian Gland	+	+	+	+	+	+	+	+	+	+	+	10

URINARY SYSTEM

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

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 + .. Tissue examined microscopically
 x .. Lesion present
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 1-4 .. Lesion qualified as:
 1) Minimal 3) Moderate
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TDMS No. 20515 - 01

Test Type: 90-DAY

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: RATS/F344/N Tac

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Metal working fluids (CIMSTAR 3800)

CAS Number: CIMSTAR3800

Date Report Requested: 10/21/2008

Time Report Requested: 07:18:15

First Dose M/F: 06/12/06 / 06/12/06

Lab: BNW

DAY ON TEST		0	0	0	0	0	0	0	0	0	0	
FISCHER 344-TACONIC RATS		0	0	0	0	0	0	0	0	0	0	
MALE		1	1	1	1	1	1	1	1	1	1	
400 mg/m3		0	0	0	0	0	0	0	0	0	0	
ANIMAL ID		0	0	0	0	0	0	0	0	0	1	
		1	2	3	4	5	6	7	8	9	0	* TOTALS
Nephropathy		1		1		1	1	1		1	1	7 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

l .. Insufficient tissue

M .. Missing tissue

A .. Autolysis precludes evaluation

BLANK .. Not examined microscopically

Page 24

1-4 .. Lesion qualified as:

1) Minimal 3) Moderate

2) Mild 4) Marked

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
	4	4	4	4	4	4	4	4	4	4
.....										
FISCHER 344-TACONIC RATS	0	0	0	0	0	0	0	0	0	0
FEMALE	0	0	0	0	0	0	0	0	0	0
ANIMAL ID	1	1	1	1	1	1	1	1	1	1
0 mg/m3	0	0	0	0	0	0	0	0	0	0
	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
Inflammation, Granulomatous	1				1				1		3 1.0
Oral Mucosa					+						1
Inflammation, Acute					2						1 2.0
Pancreas	+	+	+	+	+	+	+	+	+	+	10
Salivary Glands	+	+	+	+	+	+	+	+	+	+	10

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+ .. 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:

1) Minimal 3) Moderate

2) Mild 4) Marked

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
	4	4	4	4	4	4	4	4	4	4
FISCHER 344-TACONIC RATS	0	0	0	0	0	0	0	0	0	0
FEMALE	0	0	0	0	0	0	0	0	0	0
ANIMAL ID	1	1	1	1	1	1	1	1	1	1
0 mg/m3	0	0	0	0	0	0	0	0	0	0
	1	2	3	4	5	6	7	8	9	0
	* TOTALS									

Stomach, Forestomach	+	+	+	+	+	+	+	+	+	+	10
Stomach, Glandular	+	+	+	+	+	+	+	+	+	+	10

CARDIOVASCULAR SYSTEM

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

ENDOCRINE SYSTEM

Adrenal Cortex	+	+	+	+	+	+	+	+	+	+	10
Adrenal Medulla	+	+	+	+	+	+	+	+	+	+	10
Islets, Pancreatic	+	+	+	+	+	+	+	+	+	+	10
Parathyroid Gland	+	+	+	+	+	+	+	+	+	+	10
Pituitary Gland	+	+	+	M	+	+	+	+	+	+	9
Thyroid Gland	+	+	+	+	+	+	+	+	+	+	10

GENERAL BODY 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

DAY ON TEST		0	0	0	0	0	0	0	0	0	0
DAY ON TEST		0	0	0	0	0	0	0	0	0	0
DAY ON TEST		9	9	9	9	9	9	9	9	9	9
DAY ON TEST		4	4	4	4	4	4	4	4	4	4
FISCHER 344-TACONIC RATS		0	0	0	0	0	0	0	0	0	0
FEMALE		0	0	0	0	0	0	0	0	0	0
ANIMAL ID		1	1	1	1	1	1	1	1	1	1
0 mg/m3		0	0	0	0	0	0	0	0	0	1
		1	2	3	4	5	6	7	8	9	0
* TOTALS											

GENITAL SYSTEM

Clitoral Gland	+	+	+	+	+	+	+	+	+	+	10
Ovary	+	+	+	+	+	+	+	+	+	+	10
Cyst		2							2		2 2.0
Uterus	+	+	+	+	+	+	+	+	+	+	10

HEMATOPOIETIC SYSTEM

Bone Marrow	+	+	+	+	+	+	+	+	+	+	10
Lymph Node, Bronchial	+	+	+	M	+	+	+	+	M	+	8
Lymph Node, Mandibular	+	+	I	+	+	+	+	+	+	+	9
Lymph Node, Mediastinal	+	+	+	+	+	M	+	M	+	+	8
Lymph Node, Mesenteric	+	+	+	+	+	+	+	+	+	+	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

Page 27

1-4 .. Lesion qualified as:

1) Minimal 3) Moderate

2) Mild 4) Marked

DAY ON TEST		0	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	9
4		4	4	4	4	4	4	4	4	4	4
FISCHER 344-TACONIC RATS		0	0	0	0	0	0	0	0	0	0
FEMALE		0	0	0	0	0	0	0	0	0	0
ANIMAL ID		1	1	1	1	1	1	1	1	1	1
0 mg/m3		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	+	+	+	+	+	+	+	+	+	+	10
Skin	+	+	+	+	+	+	+	+	+	+	10

MUSCULOSKELETAL SYSTEM

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

NERVOUS SYSTEM

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

RESPIRATORY SYSTEM

Larynx	+	+	+	+	+	+	+	+	+	+	10
Lung	+	+	+	+	+	+	+	+	+	+	10
Inflammation, Chronic Active	2	2	2	2	1	2	2	1	1	1	10 1.6
Nose	+	+	+	+	+	+	+	+	+	+	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

Page 28

1-4 .. Lesion qualified as:

1) Minimal 3) Moderate

2) Mild 4) Marked

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	
FISCHER 344-TACONIC RATS		0	0	0	0	0	0	0	0	0	0	
FEMALE		0	0	0	0	0	0	0	0	0	0	
0 mg/m3		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	* TOTALS
Trachea		+	+	+	+	+	+	+	+	+	+	10
SPECIAL SENSES SYSTEM												
Eye		+	+	+	+	+	+	+	+	+	+	10
Harderian Gland		+	+	+	+	+	+	+	+	+	+	10
URINARY SYSTEM												
Kidney		+	+	+	+	+	+	+	+	+	+	10
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

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	
	4	4	4	4	4	4	4	4	4	4	
.....											
FISCHER 344-TACONIC RATS	0	0	0	0	0	0	0	0	0	0	
FEMALE	0	0	0	0	0	0	0	0	0	0	
ANIMAL ID	3	3	3	3	3	3	3	3	3	3	
	0	0	0	0	0	0	0	0	0	1	
25 mg/m3	1	2	3	4	5	6	7	8	9	0	* TOTALS

ALIMENTARY SYSTEM

Liver	+	+									4
Hepatodiaphragmatic Nodule	X	X					X	X			4

CARDIOVASCULAR SYSTEM

NONE

ENDOCRINE SYSTEM

NONE

GENERAL BODY SYSTEM

NONE

GENITAL SYSTEM

NONE

HEMATOPOIETIC SYSTEM

NONE

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

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
	4	4	4	4	4	4	4	4	4	4
.....										
FISCHER 344-TACONIC RATS	0	0	0	0	0	0	0	0	0	0
FEMALE	0	0	0	0	0	0	0	0	0	0
ANIMAL ID	3	3	3	3	3	3	3	3	3	3
25 mg/m3	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

Larynx	+	+	+	+	+	+	+	+	+	+	10	
Inflammation, Chronic Active	1	1	1	1	1	1	1	1	1	1		10 1.0
Metaplasia, Squamous	2	3	3	3	3	3	3	3	3	3		10 2.9
Squamous Epithelium, Hyperplasia		1	1	2	1	1	1	1	1	1		9 1.1
.....												
Lung	+	+	+	+	+	+	+	+	+	+	10	
Inflammation, Chronic Active	1	1	1	1	1	1	1	2	1	1		10 1.1
Metaplasia, Osseous									1			1 1.0
.....												
Nose	+	+	+	+	+	+	+	+	+	+	10	
Goblet Cell, Hyperplasia	2	2		1	2	2	1	1	1			8 1.5
Olfactory Epithelium, Accumulation, Hyaline Droplet	3	3	1	3	3	3	3	3	3	3		10 2.8
Olfactory Epithelium, Inflammation, Suppurative	1	1	1	1		1	1	1	1	1		9 1.0
Respiratory Epithelium, Accumulation, Hyaline Droplet	3	3	3	3	1	1	3	3	3	3		10 2.6
Respiratory Epithelium, Inflammation, Suppurative	1	1	1	1		1	1	1	1	1		9 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

TDMS No. 20515 - 01

Test Type: 90-DAY

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: RATS/F344/N Tac

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Metal working fluids (CIMSTAR 3800)

CAS Number: CIMSTAR3800

Date Report Requested: 10/21/2008

Time Report Requested: 07:18:15

First Dose M/F: 06/12/06 / 06/12/06

Lab: BNW

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	
	4	4	4	4	4	4	4	4	4	4	
.....											
FISCHER 344-TACONIC RATS	0	0	0	0	0	0	0	0	0	0	
FEMALE	0	0	0	0	0	0	0	0	0	0	
ANIMAL ID	3	3	3	3	3	3	3	3	3	3	
25 mg/m3	0	0	0	0	0	0	0	0	0	1	
	1	2	3	4	5	6	7	8	9	0	* TOTALS

Trachea	+	+	+	+	+	+	+	+	+	+	10
---------	---	---	---	---	---	---	---	---	---	---	-----------

SPECIAL SENSES SYSTEM

NONE

URINARY 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
Page 32

	0	0	0	0	0	0	0	0	0	0	
DAY ON TEST	0	0	0	0	0	0	0	0	0	0	
	9	9	9	9	9	9	9	9	9	9	
	4	4	4	4	4	4	4	4	4	4	
.....											
FISCHER 344-TACONIC RATS	0	0	0	0	0	0	0	0	0	0	
FEMALE	0	0	0	0	0	0	0	0	0	0	
ANIMAL ID	5	5	5	5	5	5	5	5	5	5	
50 mg/m3	0	0	0	0	0	0	0	0	0	1	
	1	2	3	4	5	6	7	8	9	0	* TOTALS

ALIMENTARY SYSTEM

NONE

CARDIOVASCULAR SYSTEM

NONE

ENDOCRINE SYSTEM

NONE

GENERAL BODY SYSTEM

NONE

GENITAL SYSTEM

NONE

HEMATOPOIETIC SYSTEM

NONE

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

A .. Autolysis precludes evaluation

BLANK .. Not examined microscopically

1-4 .. Lesion qualified as:

1) Minimal 3) Moderate

2) Mild 4) Marked

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
	4	4	4	4	4	4	4	4	4	4
<hr/>										
FISCHER 344-TACONIC RATS	0	0	0	0	0	0	0	0	0	0
FEMALE	0	0	0	0	0	0	0	0	0	0
ANIMAL ID	5	5	5	5	5	5	5	5	5	5
50 mg/m3	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

Larynx	+	+	+	+	+	+	+	+	+	+	10	
Inflammation, Chronic Active	1	1	1	1	1	2	1	1	1	1		10 1.1
Metaplasia, Squamous	3	3	4	3	4	3	4	3	4	3		10 3.4
Squamous Epithelium, Hyperplasia		1	1		1	1	1	1	1			7 1.0
<hr/>												
Lung	+	+	+	+	+	+	+	+	+	+	10	
Inflammation, Chronic Active	1	2	2	2	1	1	2	2	1	1		10 1.5
<hr/>												
Nose	+	+	+	+	+	+	+	+	+	+	10	
Goblet Cell, Hyperplasia	2	2	2	2	1	1	2	1	1	1		10 1.5
Olfactory Epithelium, Accumulation, Hyaline Droplet	3	3	3	3	3	3	3	3	3	3		10 3.0
Olfactory Epithelium, Inflammation, Suppurative	1	1	1	1	1	1	1	2	1	1		10 1.1
Respiratory Epithelium, Accumulation, Hyaline Droplet	3	3	3	2	3	3	3	3	2	3		10 2.8
Respiratory Epithelium, Inflammation, Suppurative	1	1	1	1	1	1	1	2	1	1		10 1.1
<hr/>												
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

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	
	4	4	4	4	4	4	4	4	4	4	
.....											
FISCHER 344-TACONIC RATS	0	0	0	0	0	0	0	0	0	0	
FEMALE	0	0	0	0	0	0	0	0	0	0	
ANIMAL ID	5	5	5	5	5	5	5	5	5	5	
50 mg/m3	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

NONE

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

+ .. Tissue examined microscopically

x .. Lesion present

l .. 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

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	
	4	4	4	4	4	4	4	4	4	4	
.....											
FISCHER 344-TACONIC RATS	0	0	0	0	0	0	0	0	0	0	
FEMALE	0	0	0	0	0	0	0	0	0	0	
ANIMAL ID	7	7	7	7	7	7	7	7	7	7	
100 mg/m3	0	0	0	0	0	0	0	0	0	1	
	1	2	3	4	5	6	7	8	9	0	* TOTALS

ALIMENTARY SYSTEM

Liver	+			+			+				3
Hepatodiaphragmatic Nodule	X			X			X				3
Mesentery								+			1
Fat, Hemorrhage								2			1 2.0

CARDIOVASCULAR SYSTEM

NONE

ENDOCRINE SYSTEM

NONE

GENERAL BODY SYSTEM

NONE

GENITAL SYSTEM

NONE

HEMATOPOIETIC 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

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	
	4	4	4	4	4	4	4	4	4	4	
.....											
FISCHER 344-TACONIC RATS	0	0	0	0	0	0	0	0	0	0	
FEMALE	0	0	0	0	0	0	0	0	0	0	
ANIMAL ID	7	7	7	7	7	7	7	7	7	7	
	0	0	0	0	0	0	0	0	0	1	
100 mg/m3	1	2	3	4	5	6	7	8	9	0	* TOTALS

INTEGUMENTARY SYSTEM

NONE

MUSCULOSKELETAL SYSTEM

NONE

NERVOUS SYSTEM

NONE

RESPIRATORY SYSTEM

Larynx	+	+	+	+	+	+	+	+	+	+	10	
Inflammation, Chronic Active	1	2	2	1	2	1	2	2	1	2		10 1.6
Metaplasia, Squamous	4	4	4	4	4	4	4	4	4	4		10 4.0
Squamous Epithelium, Hyperplasia	2	2	2	1	1	1	1	2	1	1		10 1.4
.....												
Lung	+	+	+	+	+	+	+	+	+	+	10	
Inflammation, Chronic Active	1		1	1	1	2	1	2	1	1		9 1.2
Arteriole, Inflammation, Chronic Active			1									1 1.0
Bronchiole, Hyperplasia			2									1 2.0
Perivascular, Inflammation, Chronic Active			1									1 1.0
.....												
Nose	+	+	+	+	+	+	+	+	+	+	10	
Goblet Cell, Hyperplasia	2		1	2	1	2	2	1	2	1		9 1.6
Olfactory Epithelium, Accumulation, Hyaline Droplet	3	2	3	3	3	3	3	3	3	3		10 2.9

* .. 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

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	
	4	4	4	4	4	4	4	4	4	4	
<hr/>											
FISCHER 344-TACONIC RATS	0	0	0	0	0	0	0	0	0	0	
FEMALE	0	0	0	0	0	0	0	0	0	0	
ANIMAL ID	7	7	7	7	7	7	7	7	7	7	
100 mg/m3	0	0	0	0	0	0	0	0	0	0	
	1	2	3	4	5	6	7	8	9	0	* TOTALS
Olfactory Epithelium, Inflammation, Suppurative	1	1	1	1	1	2	1	1	2	2	10 1.3
Respiratory Epithelium, Accumulation, Hyaline Droplet	3	2	3	3	3	2	3	2	2	3	10 2.6
Respiratory Epithelium, Inflammation, Suppurative	1	1	1	1	1	2	1	1	2	2	10 1.3
<hr/>											
Trachea	+	+	+	+	+	+	+	+	+	+	10

SPECIAL SENSES SYSTEM

NONE

URINARY 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

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
	4	4	4	4	4	4	4	4	4	4
.....										
FISCHER 344-TACONIC RATS	0	0	0	0	0	0	0	0	0	0
FEMALE	0	0	0	0	0	0	0	0	0	0
	9	9	9	9	9	9	9	9	9	9
ANIMAL ID	0	0	0	0	0	0	0	0	0	1
200 mg/m3	1	2	3	4	5	6	7	8	9	0
										* TOTALS

NONE

MUSCULOSKELETAL SYSTEM

NONE

NERVOUS SYSTEM

NONE

RESPIRATORY SYSTEM

Larynx	+	+	+	+	+	+	+	+	+	+	10
Inflammation, Chronic Active	2	2	1	2	1	3	1	1	2	2	10 1.7
Metaplasia, Squamous	4	4	4	4	4	4	4	4	4	4	10 4.0
Squamous Epithelium, Hyperplasia	2	1	2	1	1	2	1	1	1		9 1.3
.....											
Lung	+	+	+	+	+	+	+	+	+	+	10
Inflammation, Chronic Active	1	1	1	1	1	2	1	2	1	2	10 1.3
Alveolus, Infiltration Cellular, Histiocyte	1	1	1	1	1	1	1	1	1	1	10 1.0
.....											
Nose	+	+	+	+	+	+	+	+	+	+	10
Goblet Cell, Hyperplasia	2	2	1	1	2	1	2	2	2	2	10 1.7
Olfactory Epithelium, Accumulation, Hyaline Droplet	3	3	3	3	3	3	3	3	3	3	10 3.0
Olfactory Epithelium, Inflammation, Suppurative	2	1	1	2	1	2	2	1	2	2	10 1.6
Respiratory Epithelium, Accumulation, Hyaline Droplet	3	3	3	3	3	3	3	2	3	2	10 2.8

* .. 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

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
	4	4	4	4	4	4	4	4	4	4
.....										
FISCHER 344-TACONIC RATS	0	0	0	0	0	0	0	0	0	0
FEMALE	0	0	0	0	0	0	0	0	0	0
	9	9	9	9	9	9	9	9	9	9
ANIMAL ID	0	0	0	0	0	0	0	0	0	1
200 mg/m3	1	2	3	4	5	6	7	8	9	0
										* TOTALS
Respiratory Epithelium, Inflammation, Suppurative	2	1	1	2	1	2	2	1	2	2
										10 1.6
.....										
Trachea	+	+	+	+	+	+	+	+	+	+
										10

SPECIAL SENSES SYSTEM

NONE

URINARY 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

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
	4	4	4	4	4	4	4	4	4	4
FISCHER 344-TACONIC RATS	0	0	0	0	0	0	0	0	0	0
FEMALE	1	1	1	1	1	1	1	1	1	1
	1	1	1	1	1	1	1	1	1	1
ANIMAL ID	0	0	0	0	0	0	0	0	0	1
400 mg/m3	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 Inflammation, Granulomatous	1	2	1		1			X	1	1	1 6 1.2
Pancreas	+	+	+	+	+	+	+	+	+	+	10
Salivary Glands	+	+	+	+	+	+	+	+	+	+	10
Stomach, Forestomach	+	+	+	+	+	+	+	+	+	+	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

Page 42

1-4 .. Lesion qualified as:

1) Minimal 3) Moderate

2) Mild 4) Marked

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
	4	4	4	4	4	4	4	4	4	4
FISCHER 344-TACONIC RATS	0	0	0	0	0	0	0	0	0	0
FEMALE	1	1	1	1	1	1	1	1	1	1
	1	1	1	1	1	1	1	1	1	1
ANIMAL ID	0	0	0	0	0	0	0	0	0	1
400 mg/m3	1	2	3	4	5	6	7	8	9	0
										* TOTALS

Stomach, Glandular + + + + + + + + + + **10**

CARDIOVASCULAR SYSTEM

Heart + + + + + + + + + + **10**
 Cardiomyopathy 1 1 **2 1.0**

ENDOCRINE SYSTEM

Adrenal Cortex + + + + + + + + + + **10**
 Adrenal Medulla + + + + + + + + + + **10**
 Islets, Pancreatic + + + + + + + + + + **10**
 Parathyroid Gland + + + + + + + + + + **10**
 Pituitary Gland + + + + + + + + + + **10**
 Thyroid Gland + + + + + + + + + + **10**

GENERAL BODY 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
 Page 43

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
	4	4	4	4	4	4	4	4	4	4
<hr/>										
FISCHER 344-TACONIC RATS	0	0	0	0	0	0	0	0	0	0
FEMALE	1	1	1	1	1	1	1	1	1	1
	1	1	1	1	1	1	1	1	1	1
ANIMAL ID	0	0	0	0	0	0	0	0	0	1
400 mg/m3	1	2	3	4	5	6	7	8	9	0
										* TOTALS

GENITAL SYSTEM

Clitoral Gland	+	+	+	+	+	+	+	+	+	+	10
Ovary	+	+	+	+	+	+	+	+	+	+	10
Uterus	+	+	+	+	+	+	+	+	+	+	10

HEMATOPOIETIC SYSTEM

Bone Marrow	+	+	+	+	+	+	+	+	+	+	10
Lymph Node, Bronchial	+	M	+	+	+	M	+	+	+	+	8
Lymph Node, Mandibular	M	+	+	+	+	+	+	+	+	+	9
Lymph Node, Mediastinal	M	+	+	+	+	+	+	+	+	+	9
Lymph Node, Mesenteric	+	+	+	+	+	+	+	+	+	+	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

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	
	4	4	4	4	4	4	4	4	4	4	
.....											
FISCHER 344-TACONIC RATS	0	0	0	0	0	0	0	0	0	0	
FEMALE	1	1	1	1	1	1	1	1	1	1	
	1	1	1	1	1	1	1	1	1	1	
ANIMAL ID	0	0	0	0	0	0	0	0	0	1	
400 mg/m3	1	2	3	4	5	6	7	8	9	0	* TOTALS

INTEGUMENTARY SYSTEM

Mammary Gland	+	+	+	+	+	+	+	+	+	+	10
Skin	+	+	+	+	+	+	+	+	+	+	10

MUSCULOSKELETAL SYSTEM

Bone	+	+	+	+	+	+	+	+	+	+	10
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NERVOUS SYSTEM

Brain	+	+	+	+	+	+	+	+	+	+	10
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RESPIRATORY SYSTEM

Larynx	+	+	+	+	+	+	+	+	+	+	10
Inflammation, Chronic Active	3	3	3	3	2	2	1	1	2	2	10 2.2
Metaplasia, Squamous	4	4	4	4	4	4	4	4	4	4	10 4.0
Squamous Epithelium, Hyperplasia	2	2	1	2	1	2	2	2	2	1	10 1.7
Lung	+	+	+	+	+	+	+	+	+	+	10
Inflammation, Chronic Active	1	1	2	1	1	2	2	1	1	1	10 1.3
Alveolus, Infiltration Cellular, Histiocyte	1	1	1	1	1	1	1	1	1	1	10 1.0

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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	
	4	4	4	4	4	4	4	4	4	4	
<hr/>											
FISCHER 344-TACONIC RATS	0	0	0	0	0	0	0	0	0	0	
FEMALE	1	1	1	1	1	1	1	1	1	1	
	1	1	1	1	1	1	1	1	1	1	
ANIMAL ID	0	0	0	0	0	0	0	0	0	0	
400 mg/m3	1	2	3	4	5	6	7	8	9	0	* TOTALS
<hr/>											
Nose	+	+	+	+	+	+	+	+	+	+	10
Goblet Cell, Hyperplasia	2	1	2	2	2	1	2	2	2	2	10 1.8
Olfactory Epithelium, Accumulation, Hyaline Droplet	3	3	3	3	3	3	3	3	3	3	10 3.0
Olfactory Epithelium, Inflammation, Suppurative	1	2	1	2	1	2	1	1	2	1	10 1.4
Respiratory Epithelium, Accumulation, Hyaline Droplet	3	3	2	3	3	2	3	2	3	3	10 2.7
Respiratory Epithelium, Inflammation, Suppurative	1	2	1	2	1	2	1	1	2	1	10 1.4
Respiratory Epithelium, Metaplasia, Squamous							1				1 1.0
<hr/>											
Trachea	+	+	+	+	+	+	+	+	+	+	10
<hr/>											
SPECIAL SENSES SYSTEM											
<hr/>											
Eye	+	+	+	+	+	+	+	+	+	+	10
<hr/>											
Harderian Gland	+	+	+	+	+	+	+	+	+	+	10
<hr/>											
URINARY SYSTEM											
<hr/>											
Kidney	+	+	+	+	+	+	+	+	+	+	10
Pelvis, Inflammation, Acute					1						1 1.0
Transitional Epithelium, Hyperplasia					2						1 2.0
<hr/>											

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TDMS No. 20515 - 01

Test Type: 90-DAY

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: RATS/F344/N Tac

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Metal working fluids (CIMSTAR 3800)

CAS Number: CIMSTAR3800

Date Report Requested: 10/21/2008

Time Report Requested: 07:18:15

First Dose M/F: 06/12/06 / 06/12/06

Lab: BNW

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	
		4	4	4	4	4	4	4	4	4	4	
FISCHER 344-TACONIC RATS		0	0	0	0	0	0	0	0	0	0	
FEMALE		1	1	1	1	1	1	1	1	1	1	
		1	1	1	1	1	1	1	1	1	1	
ANIMAL ID		0	0	0	0	0	0	0	0	0	1	
400 mg/m3		1	2	3	4	5	6	7	8	9	0	* TOTALS
Urinary Bladder		+	+	+	+	+	+	+	+	+	+	10

*** END OF REPORT ***

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