

**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		1	2	3	4	5	6	7	8	9	0
<b>* TOTALS</b>											

**ALIMENTARY SYSTEM**

Esophagus	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Intestine Large, Cecum	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Intestine Large, Colon	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Intestine Large, Rectum	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Intestine Small, Duodenum	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Intestine Small, Ileum	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Intestine Small, Jejunum	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Liver	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Hepatodiaphragmatic Nodule	X										<b>1</b>
Mesentery									+		<b>1</b>
Fat, Necrosis									2		<b>1 2.0</b>
Pancreas	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Atrophy								1			<b>1 1.0</b>
Salivary Glands	+	+	+	+	+	+	+	+	+	+	<b>10</b>

\* .. 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		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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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
<b>* TOTALS</b>											

NONE

**GENITAL SYSTEM**

Epididymis	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Preputial Gland Inflammation, Chronic Active	+	+	+	+	+	+	+	+	+	+	<b>10</b> <b>1 1.0</b>
Prostate	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Seminal Vesicle	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Testes	+	+	+	+	+	+	+	+	+	+	<b>10</b>

**HEMATOPOIETIC SYSTEM**

Bone Marrow	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Lymph Node, Bronchial	M	+	M	+	+	+	+	+	+	+	<b>8</b>
Lymph Node, Mandibular	+	+	+	+	+	+	+	+	+	M	<b>9</b>
Lymph Node, Mediastinal	+	+	+	+	+	+	+	+	+	+	<b>10</b>

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 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		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
<b>INTEGUMENTARY SYSTEM</b>												
Mammary Gland		+	I	M	+	+	+	+	+	M	M	6
Skin		+	+	+	+	+	+	+	+	+	+	10
<b>MUSCULOSKELETAL SYSTEM</b>												
Bone		+	+	+	+	+	+	+	+	+	+	10
<b>NERVOUS SYSTEM</b>												
Brain		+	+	+	+	+	+	+	+	+	+	10
<b>RESPIRATORY SYSTEM</b>												
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/>											
<b>FISCHER 344-TACONIC RATS</b>	0	0	0	0	0	0	0	0	0	0	
<b>MALE</b>	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
<b>0 mg/m3</b>	1	2	3	4	5	6	7	8	9	0	<b>* TOTALS</b>
<hr/>											
Lung	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Inflammation, Chronic Active	1	2	2	2	2	2	1	1	2	2	<b>10 1.7</b>
<hr/>											
Nose	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Olfactory Epithelium, Accumulation, Hyaline Droplet	1										<b>1 1.0</b>
<hr/>											
Trachea	+	+	+	+	+	+	+	+	+	+	<b>10</b>
<hr/>											
<b>SPECIAL SENSES SYSTEM</b>											
<hr/>											
Eye	+	+	+	+	+	+	+	+	+	+	<b>10</b>
<hr/>											
Harderian Gland	+	+	+	+	+	+	+	+	+	+	<b>10</b>
<hr/>											
<b>URINARY SYSTEM</b>											
<hr/>											
Kidney	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Nephropathy	1		1	1	1	1	1	1	1	1	<b>9 1.0</b>
<hr/>											
Urinary Bladder	+	+	+	+	+	+	+	+	+	+	<b>10</b>
<hr/>											

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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  
MALE**

ANIMAL ID

25 mg/m3

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**

**ALIMENTARY SYSTEM**

Liver  
Hepatodiaphragmatic Nodule

+ +  
X X

2  
2

**CARDIOVASCULAR SYSTEM**

NONE

**ENDOCRINE SYSTEM**

NONE

**GENERAL BODY SYSTEM**

NONE

**GENITAL SYSTEM**

NONE

**HEMATOPOIETIC SYSTEM**

NONE

**INTEGUMENTARY SYSTEM**

NONE

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+ .. Tissue examined microscopically

x .. Lesion present

I .. Insufficient tissue

M .. Missing tissue

A .. Autolysis precludes evaluation

BLANK .. Not examined microscopically

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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

25 mg/m3

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**

**MUSCULOSKELETAL SYSTEM**

NONE

**NERVOUS SYSTEM**

NONE

**RESPIRATORY SYSTEM**

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

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

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

**MUSCULOSKELETAL SYSTEM**

NONE

**NERVOUS SYSTEM**

NONE

**RESPIRATORY SYSTEM**

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

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Test Type: 90-DAY

Metal working fluids (CIMSTAR 3800)

Time Report Requested: 07:18:15

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: CIMSTAR3800

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

Species/Strain: RATS/F344/N Tac

Lab: BNW

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

**SPECIAL SENSES SYSTEM**

NONE

**URINARY SYSTEM**

NONE

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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

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

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

l .. Insufficient tissue

M .. Missing tissue

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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		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
<b>* TOTALS</b>											

**NERVOUS SYSTEM**

NONE

**RESPIRATORY SYSTEM**

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

\* .. 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

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

**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
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		3	3	3	3	3	3	3	3	3	3
.....											
<b>FISCHER 344-TACONIC RATS</b>		0	0	0	0	0	0	0	0	0	0
<b>MALE</b>		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	1
											<b>* TOTALS</b>

**ALIMENTARY SYSTEM**

Liver													
Hepatodiaphragmatic Nodule													
Mesentery													
Fat, Necrosis													

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

**INTEGUMENTARY SYSTEM**

NONE

**MUSCULOSKELETAL SYSTEM**

NONE

**NERVOUS SYSTEM**

NONE

**RESPIRATORY SYSTEM**

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

\* .. 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

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

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

**ALIMENTARY SYSTEM**

Esophagus	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Intestine Large, Cecum	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Intestine Large, Colon	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Intestine Large, Rectum	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Intestine Small, Duodenum	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Intestine Small, Ileum	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Intestine Small, Jejunum	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Liver	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Pancreas	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Salivary Glands	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Stomach, Forestomach	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Stomach, Glandular	+	+	+	+	+	+	+	+	+	+	<b>10</b>

\* .. 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

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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
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
<b>* TOTALS</b>											

**CARDIOVASCULAR SYSTEM**

Heart	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Cardiomyopathy		1		1		1		1	1	1	<b>6 1.0</b>

**ENDOCRINE SYSTEM**

Adrenal Cortex	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Adrenal Medulla	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Islets, Pancreatic	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Parathyroid Gland	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Pituitary Gland	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Thyroid Gland	+	+	+	+	+	+	+	+	+	+	<b>10</b>

**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

Page 20

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 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

\* .. 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
	3	3	3	3	3	3	3	3	3	3
.....										
<b>FISCHER 344-TACONIC RATS</b>	0	0	0	0	0	0	0	0	0	0
<b>MALE</b>	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
<b>400 mg/m3</b>	1	2	3	4	5	6	7	8	9	0
										<b>* TOTALS</b>

**INTEGUMENTARY SYSTEM**

Mammary Gland	M	+	M	+	+	M	M	M	+	+	<b>5</b>
Skin	+	+	+	+	+	+	+	+	+	+	<b>10</b>

**MUSCULOSKELETAL SYSTEM**

Bone	+	+	+	+	+	+	+	+	+	+	<b>10</b>
------	---	---	---	---	---	---	---	---	---	---	-----------

**NERVOUS SYSTEM**

Brain	+	+	+	+	+	+	+	+	+	+	<b>10</b>
-------	---	---	---	---	---	---	---	---	---	---	-----------

**RESPIRATORY SYSTEM**

Larynx	+	+	+	+	+	+	+	+	+	+	<b>10</b>	
Inflammation, Chronic Active	1	3	3	2	3	3	1	3	3	3		<b>10 2.5</b>
Metaplasia, Squamous	4	4	4	4	4	4	4	4	4	4		<b>10 4.0</b>
Squamous Epithelium, Hyperplasia	1	2	2	1	2	2	1	2	2	2		<b>10 1.7</b>
Lung	+	+	+	+	+	+	+	+	+	+	<b>10</b>	
Inflammation, Chronic Active	1	1	1	2	1	2	1	1	2	1		<b>10 1.3</b>
Alveolus, Infiltration Cellular, Histiocyte	1	1	1	1	1	1	1	1	1	1		<b>10 1.0</b>

\* .. 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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1-4 .. 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	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
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

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
--------	---	---	---	---	---	---	---	---	---	---	----

\* .. 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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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		0	0	0	0	0	0	0	0	0	1	
		1	2	3	4	5	6	7	8	9	0	<b>* TOTALS</b>
Nephropathy		1		1		1	1	1		1	1	<b>7 1.0</b>
Urinary Bladder		+	+	+	+	+	+	+	+	+	+	<b>10</b>

\*\*\* 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



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
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
<b>* TOTALS</b>											

**ALIMENTARY SYSTEM**

Esophagus	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Intestine Large, Cecum	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Intestine Large, Colon	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Intestine Large, Rectum	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Intestine Small, Duodenum	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Intestine Small, Ileum	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Intestine Small, Jejunum	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Liver	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Inflammation, Granulomatous	1				1				1		<b>3 1.0</b>
Oral Mucosa					+						<b>1</b>
Inflammation, Acute					2						<b>1 2.0</b>
Pancreas	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Salivary Glands	+	+	+	+	+	+	+	+	+	+	<b>10</b>

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

Stomach, Forestomach	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Stomach, Glandular	+	+	+	+	+	+	+	+	+	+	<b>10</b>

**CARDIOVASCULAR SYSTEM**

Heart	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Cardiomyopathy							1				<b>1 1.0</b>

**ENDOCRINE SYSTEM**

Adrenal Cortex	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Adrenal Medulla	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Islets, Pancreatic	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Parathyroid Gland	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Pituitary Gland	+	+	+	M	+	+	+	+	+	+	<b>9</b>
Thyroid Gland	+	+	+	+	+	+	+	+	+	+	<b>10</b>

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

**GENITAL SYSTEM**

Clitoral Gland	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Ovary	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Cyst		2							2		<b>2 2.0</b>
Uterus	+	+	+	+	+	+	+	+	+	+	<b>10</b>

**HEMATOPOIETIC SYSTEM**

Bone Marrow	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Lymph Node, Bronchial	+	+	+	M	+	+	+	+	M	+	<b>8</b>
Lymph Node, Mandibular	+	+	I	+	+	+	+	+	+	+	<b>9</b>
Lymph Node, Mediastinal	+	+	+	+	+	M	+	M	+	+	<b>8</b>
Lymph Node, Mesenteric	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Spleen	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Thymus	+	+	+	+	+	+	+	+	+	+	<b>10</b>

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

**INTEGUMENTARY SYSTEM**

Mammary Gland	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Skin	+	+	+	+	+	+	+	+	+	+	<b>10</b>

**MUSCULOSKELETAL SYSTEM**

Bone	+	+	+	+	+	+	+	+	+	+	<b>10</b>
------	---	---	---	---	---	---	---	---	---	---	-----------

**NERVOUS SYSTEM**

Brain	+	+	+	+	+	+	+	+	+	+	<b>10</b>
-------	---	---	---	---	---	---	---	---	---	---	-----------

**RESPIRATORY SYSTEM**

Larynx	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Lung	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Inflammation, Chronic Active	2	2	2	2	1	2	2	1	1	1	<b>10 1.6</b>
Nose	+	+	+	+	+	+	+	+	+	+	<b>10</b>

\* .. 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	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
<b>SPECIAL SENSES SYSTEM</b>												
Eye		+	+	+	+	+	+	+	+	+	+	10
Harderian Gland		+	+	+	+	+	+	+	+	+	+	10
<b>URINARY SYSTEM</b>												
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	
.....											
<b>FISCHER 344-TACONIC RATS</b>	0	0	0	0	0	0	0	0	0	0	
<b>FEMALE</b>	0	0	0	0	0	0	0	0	0	0	
ANIMAL ID	3	3	3	3	3	3	3	3	3	3	
<b>25 mg/m3</b>	0	0	0	0	0	0	0	0	0	1	
	1	2	3	4	5	6	7	8	9	0	<b>* TOTALS</b>

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

**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

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

Trachea	+	+	+	+	+	+	+	+	+	+	<b>10</b>
---------	---	---	---	---	---	---	---	---	---	---	-----------

**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



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

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

**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
.....												
Lung	+	+	+	+	+	+	+	+	+	+	10	
Inflammation, Chronic Active	1	2	2	2	1	1	2	2	1	1		10 1.5
.....												
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
.....												
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

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  
FEMALE

ANIMAL ID

50 mg/m3

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

**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

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

**INTEGUMENTARY SYSTEM**

NONE

**MUSCULOSKELETAL SYSTEM**

NONE

**NERVOUS SYSTEM**

NONE

**RESPIRATORY SYSTEM**

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

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

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

NONE

**MUSCULOSKELETAL SYSTEM**

NONE

**NERVOUS SYSTEM**

NONE

**RESPIRATORY SYSTEM**

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

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

SPECIAL SENSES SYSTEM

NONE

URINARY SYSTEM

NONE

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

+ .. Tissue examined microscopically

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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 FEMALE	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
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								X			1
Inflammation, Granulomatous	1	2	1		1			1		1	6 1.2
Pancreas	+	+	+	+	+	+	+	+	+	+	10
Salivary Glands	+	+	+	+	+	+	+	+	+	+	10
Stomach, Forestomach	+	+	+	+	+	+	+	+	+	+	10

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x .. Lesion present

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

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

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

**GENITAL SYSTEM**

Clitoral Gland	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Ovary	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Uterus	+	+	+	+	+	+	+	+	+	+	<b>10</b>

**HEMATOPOIETIC SYSTEM**

Bone Marrow	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Lymph Node, Bronchial	+	M	+	+	+	M	+	+	+	+	<b>8</b>
Lymph Node, Mandibular	M	+	+	+	+	+	+	+	+	+	<b>9</b>
Lymph Node, Mediastinal	M	+	+	+	+	+	+	+	+	+	<b>9</b>
Lymph Node, Mesenteric	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Spleen	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Thymus	+	+	+	+	+	+	+	+	+	+	<b>10</b>

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

**INTEGUMENTARY SYSTEM**

Mammary Gland	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Skin	+	+	+	+	+	+	+	+	+	+	<b>10</b>

**MUSCULOSKELETAL SYSTEM**

Bone	+	+	+	+	+	+	+	+	+	+	<b>10</b>
------	---	---	---	---	---	---	---	---	---	---	-----------

**NERVOUS SYSTEM**

Brain	+	+	+	+	+	+	+	+	+	+	<b>10</b>
-------	---	---	---	---	---	---	---	---	---	---	-----------

**RESPIRATORY SYSTEM**

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

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

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

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 BLANK .. Not examined microscopically  
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 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
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
<b>FISCHER 344-TACONIC RATS</b>		0	0	0	0	0	0	0	0	0	0
<b>FEMALE</b>		1	1	1	1	1	1	1	1	1	1
<b>ANIMAL ID</b>		1	1	1	1	1	1	1	1	1	1
<b>400 mg/m3</b>		0	0	0	0	0	0	0	0	0	1
<b>Urinary Bladder</b>		1	2	3	4	5	6	7	8	9	0
<b>* TOTALS</b>											
<b>10</b>											

\*\*\* END OF REPORT \*\*\*

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

+ .. Tissue examined microscopically

x .. Lesion present

l .. Insufficient tissue

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1-4 .. Lesion qualified as:

1) Minimal 3) Moderate

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