

Experiment Number: 20515 - 03
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
Metal working fluids (CIMSTAR 3800)
CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
Time Report Requested: 12:32:34
First Dose M/F: 04/14/08 / 04/14/08
Lab: BNW

F2_RE

NTP Study Number: C20515
Lock Date: 01/12/2011
Cage Range: ALL
Date Range: ALL
Reasons For Removal: ALL
Removal Date Range: ALL
Treatment Groups: Include ALL
Study Gender: Both
TDMSE Version: 3.0.2.0_001
PWG Approval Date: 02/21/2013

Experiment Number: 20515 - 03
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (CIMSTAR 3800)
CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
Time Report Requested: 12:32:34
First Dose M/F: 04/14/08 / 04/14/08
Lab: BNW

		DAY ON TEST																									males (cont...)
WISTAR HAN RATS MALE		0718	0715	0770	0773	0779	0783	0785	0790	0795	0797	0803	0805	0810	0812	0818	0820	0825	0827	0833	0835	0840	0842	0848	0850		
Control	ANIMAL ID	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	

ALIMENTARY SYSTEM

Esophagus	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Intestine Large, Cecum	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Intestine Large, Colon	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Intestine Large, Rectum	+	+	+	+	I	+	+	+	+	I	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Intestine Small, Duodenum	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Intestine Small, Ileum	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Intestine Small, Jejunum	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Liver	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Mesentery Mesothelioma Malignant	+								+							+				+				+	
Oral Mucosa																									
Pancreas Adenoma Mesothelioma Malignant	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Salivary Glands Schwannoma Malignant	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Stomach, Forestomach	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue

M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (CIMSTAR 3800)
 CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
 Time Report Requested: 12:32:34
 First Dose M/F: 04/14/08 / 04/14/08
 Lab: BNW

WISTAR HAN RATS MALE	DAY ON TEST																									males (cont...)
	0 7 1 8	0 7 1 5	0 7 0 4	0 7 3 7	0 5 9 0	0 7 3 0	0 7 2 9	0 5 3 5	0 7 1 0	0 7 3 0	0 3 4 5	0 7 3 0	0 6 1 2	0 7 2 9	0 7 3 0	0 7 2 9	0 7 2 9	0 7 0 4	0 7 2 9	0 7 3 0	0 7 2 9	0 7 2 9	0 7 2 9	0 7 2 9		
Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
ANIMAL ID	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	
	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	

Leiomyoma
 Mesothelioma Malignant
 Sarcoma

X

X

Stomach, Glandular
 Sarcoma

+
 X

CARDIOVASCULAR SYSTEM

Blood Vessel

 Heart
 Schwannoma Benign

+
 +
 X

ENDOCRINE SYSTEM

Adrenal Cortex
 Adenoma
 Bilateral, Carcinoma

 Adrenal Medulla
 Pheochromocytoma Benign

 Islets, Pancreatic

 Parathyroid Gland

 Pituitary Gland
 Pars Distalis, Adenoma
 Pars Intermedia, Adenoma

+
 +
 X X X
 X X X
 X X
 X X
 M + + M + + M M +
 +
 X X X X X X X X X
 X X
 X

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue

M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (CIMSTAR 3800)
 CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
 Time Report Requested: 12:32:34
 First Dose M/F: 04/14/08 / 04/14/08
 Lab: BNW

| WISTAR HAN RATS MALE
Control | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | | ANIMAL ID | males
(cont...) | | |
|---------------------------------|-------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----------|--------------------|-----|-----|
| | 078 | 071 | 070 | 073 | 079 | 073 | 072 | 073 | 071 | 073 | 074 | 073 | 071 | 072 | 073 | 073 | 072 | 070 | 074 | 079 | 073 | 072 | 079 | 070 | 071 | | | 072 | 073 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 1 | 1 | 0 | 3 | 9 | 3 | 2 | 3 | 1 | 3 | 4 | 3 | 1 | 2 | 3 | 3 | 2 | 2 | 0 | 2 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| | 8 | 5 | 4 | 0 | 7 | 0 | 9 | 5 | 0 | 0 | 5 | 0 | 0 | 9 | 0 | 0 | 9 | 9 | 4 | 9 | 0 | 9 | 0 | 9 | 0 | 9 | 0 | 9 | 9 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | |

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Thyroid Gland | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| C-cell, Adenoma | | | X | X | | | | | | | | | | | | X | X | | | | | | | | | | | |
| C-cell, Adenoma, Multiple | | | | | | | | | | | | | | | X | | | | | | | | | | | | | |
| Follicular Cell, Adenoma | | | X | | | | | | | | | | | | | | | | | | | | | | | | | |

GENERAL BODY SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Peritoneum | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mesothelioma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

GENITAL SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|--|
| Epididymis | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| Mesothelioma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Preputial Gland | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| Prostate | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| Adenoma, Multiple | | | | | | | | | X | | | | | | | | | | | | | | | | | | | | |
| Mesothelioma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Seminal Vesicle | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| Adenoma | | | | | | | | | X | | | | | | | | | | | | | | | | | | | | |
| Testes | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| Mesothelioma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Interstitial Cell, Adenoma | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

HEMATOPOIETIC SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bone Marrow | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
|-------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue
 M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (CIMSTAR 3800)
 CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
 Time Report Requested: 12:32:34
 First Dose M/F: 04/14/08 / 04/14/08
 Lab: BNW

| WISTAR HAN RATS MALE
Control | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | | males
(cont...) |
|---|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|---|--------------------|
| | 0718 | 0715 | 0703 | 0700 | 0579 | 0773 | 0772 | 0553 | 0771 | 0770 | 0335 | 0773 | 0631 | 0772 | 0773 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | | |
| ANIMAL ID | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | | |
| Hemangiosarcoma | | | | | | | | | | | | | | | | | | | | | | | | | X | |
| Lymph Node | + | + | + | + | | + | | | | | | | + | | | | | | | | + | + | | | + | |
| Lymph Node, Bronchial | + | + | M | + | + | M | + | + | + | M | + | M | + | + | + | + | + | + | + | M | + | + | + | + | M | |
| Lymph Node, Mandibular | + | + | M | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | M | + | + | + | + | + | + | |
| Lymph Node, Mediastinal | + | + | + | + | + | + | + | M | M | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| Lymph Node, Mesenteric
Hemangiosarcoma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | X | |
| Spleen
Mesothelioma Malignant | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| Thymus
Thymoma Benign | + | + | + | + | + | + | + | I | I | M | + | + | + | + | + | + | + | + | + | + | + | + | M | I | I | |
| INTEGUMENTARY SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mammary Gland | M | M | + | M | M | M | M | + | M | M | M | M | M | M | M | + | M | M | M | M | M | M | M | M | M | |
| Skin | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| Basal Cell Carcinoma | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Keratoacanthoma | | | | | | | | | | | | | | | | | | | | | | | | | X | |
| Subcutaneous Tissue, Fibroma | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Subcutaneous Tissue, Fibrosarcoma | | | | X | | | | | | | | | | | | | | | | | | | | | | |
| Subcutaneous Tissue, Lipoma | | | | | | | | | | | | | | | | | | | | | | | | | X | |

MUSCULOSKELETAL SYSTEM

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue

M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (CIMSTAR 3800)
CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
Time Report Requested: 12:32:34
First Dose M/F: 04/14/08 / 04/14/08
Lab: BNW

| WISTAR HAN RATS MALE | | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | males
(cont...) |
|------------------------------|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|--------------------|
| | | 0
7
1
8 | 0
7
1
5 | 0
7
0
4 | 0
7
3
7 | 0
5
9
0 | 0
7
3
7 | 0
7
2
9 | 0
5
3
5 | 0
7
1
0 | 0
7
3
0 | 0
3
4
5 | 0
7
3
0 | 0
6
1
2 | 0
7
2
9 | 0
7
3
0 | 0
7
2
9 | 0
7
0
4 | 0
7
2
9 | 0
7
3
0 | 0
7
2
9 | 0
7
2
9 | 0
7
2
9 | | |
| Control | | ANIMAL ID | | | | | | | | | | | | | | | | | | | | | | | |
| | | 0
0
0
0
1 | 0
0
0
0
2 | 0
0
0
0
3 | 0
0
0
0
4 | 0
0
0
0
5 | 0
0
0
0
6 | 0
0
0
0
7 | 0
0
0
0
8 | 0
0
0
0
9 | 0
0
0
0
0 | 0
0
0
0
1 | 0
0
0
0
1 | 0
0
0
0
1 | 0
0
0
0
1 | 0
0
0
0
1 | 0
0
0
0
1 | 0
0
0
0
1 | 0
0
0
0
1 | 0
0
0
0
1 | 0
0
0
0
1 | 0
0
0
0
1 | 0
0
0
0
1 | 0
0
0
0
1 | |
| Bone | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| Osteosarcoma | | | | | | | | | | | | | X | | | | | | | | | | | | |
| Skeletal Muscle | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mesothelioma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | |
| NERVOUS SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | |
| Brain | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| Glioma | | | X | | | | | | | | | | | X | | | | | | | | | | | |
| Meningioma Malignant | | | | | | | | | | | | | | X | | | | | | | | | | | |
| Peripheral Nerve | | | | + | | + | | | | | | | | | | | | | | | | | + | | |
| Spinal Cord | | | | + | | + | | | | | | | | | | | | | | | | | + | | |
| RESPIRATORY SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | |
| Larynx | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| Lung | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| Alveolar/Bronchiolar Adenoma | | | | | | | | | | | | | | | | | | | | | | | | | |
| Nose | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| Trachea | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| SPECIAL SENSES SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | |
| Eye | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue

M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (CIMSTAR 3800)
CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
Time Report Requested: 12:32:34
First Dose M/F: 04/14/08 / 04/14/08
Lab: BNW

| Wistar Han Rats Male | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | | males
(cont...) | |
|--|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|--------------------|--|
| | 0718 | 0718 | 0718 | 0718 | 0718 | 0718 | 0718 | 0718 | 0718 | 0718 | 0718 | 0718 | 0718 | 0718 | 0718 | 0718 | 0718 | 0718 | 0718 | 0718 | 0718 | 0718 | 0718 | 0718 | | | |
| Control | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| ANIMAL ID | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | | |
| Harderian Gland | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | | |
| Zymbal's Gland
Carcinoma | | | | + | | | | | | | | | | | | | | | | | | | | | | | |
| URINARY SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Kidney
Transitional Epithelium, Papilloma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| Urinary Bladder | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| SYSTEMIC LESIONS | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Multiple Organ
Mesothelioma Malignant | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue

M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (CIMSTAR 3800)
 CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
 Time Report Requested: 12:32:34
 First Dose M/F: 04/14/08 / 04/14/08
 Lab: BNW

| WISTAR HAN RATS MALE
Control | DAY ON TEST | 0627 | 0599 | 0597 | 0730 | 0779 | 0770 | 0679 | 0771 | 0773 | 0474 | 0773 | 0773 | 0773 | 0773 | 0773 | 0773 | 0572 | 0773 | 0772 | 0772 | 0773 | 0670 | 0665 | 0772 | * TOTALS | |
|---------------------------------|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------|-------|
| | ANIMAL ID | 00026 | 00027 | 00028 | 00029 | 00030 | 00031 | 00032 | 00033 | 00034 | 00035 | 00036 | 00037 | 00038 | 00039 | 00040 | 00041 | 00042 | 00043 | 00044 | 00045 | 00046 | 00047 | 00048 | 00049 | | 00050 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |

ALIMENTARY SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|
| Esophagus | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Intestine Large, Cecum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Intestine Large, Colon | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Intestine Large, Rectum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 48 |
| Intestine Small, Duodenum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Intestine Small, Ileum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Intestine Small, Jejunum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Liver | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Mesentery | | | | + | | | | | | | | | | | | | | | | | | | | | | 7 |
| Mesothelioma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Oral Mucosa | | | | | | | | | | + | | | | | | | | | | | | | | | | 1 |
| Pancreas | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Adenoma | | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Mesothelioma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Salivary Glands | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Schwannoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Stomach, Forestomach | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue

M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (CIMSTAR 3800)
 CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
 Time Report Requested: 12:32:34
 First Dose M/F: 04/14/08 / 04/14/08
 Lab: BNW

| WISTAR HAN RATS MALE
Control | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | * TOTALS |
|---|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----|----------|
| | 0627 | 0599 | 0597 | 0730 | 0779 | 0770 | 0631 | 0733 | 0729 | 0494 | 0771 | 0773 | 0773 | 0771 | 0777 | 0773 | 0522 | 0723 | 0729 | 0770 | 0677 | 0663 | 0729 | | |
| ANIMAL ID | 0026 | 0007 | 0008 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | | |
| Leiomyoma | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| Mesothelioma Malignant | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| Sarcoma | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| Stomach, Glandular Sarcoma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| CARDIOVASCULAR SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | |
| Blood Vessel | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Heart Schwannoma Benign | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| ENDOCRINE SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | |
| Adrenal Cortex Adenoma Bilateral, Carcinoma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| | | X | | | | | | | | | | | | | X | | | | | | | | | 2 | |
| | | | | X | | | | | | | | | | | | | | | | | | | | 1 | |
| Adrenal Medulla Pheochromocytoma Benign | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| | | | | | | | | | | | | | | | | | X | | | | | | | 4 | |
| Islets, Pancreatic | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Parathyroid Gland | + | + | + | + | M | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 43 | |
| Pituitary Gland Pars Distalis, Adenoma | + | + | + | + | + | M | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 49 | |
| | X | | | X | | | X | | | | | | X | X | | | X | | | X | X | X | X | 16 | |
| | | | | | | | | | | | | | | | | | | | X | | | | | 2 | |

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue

M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (CIMSTAR 3800)
 CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
 Time Report Requested: 12:32:34
 First Dose M/F: 04/14/08 / 04/14/08
 Lab: BNW

| WISTAR HAN RATS MALE
Control | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | * TOTALS | | |
|---------------------------------|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----------|--|--|
| | 0627 | 0599 | 0597 | 0730 | 0779 | 0770 | 0671 | 0733 | 0729 | 0441 | 0771 | 0773 | 0773 | 0773 | 0773 | 0773 | 0572 | 0773 | 0772 | 0772 | 0773 | 0670 | 0673 | 0772 | | | |
| ANIMAL ID | 0026 | 0007 | 0008 | 0009 | 0000 | 0001 | 0002 | 0003 | 0004 | 0005 | 0006 | 0007 | 0008 | 0009 | 0000 | 0001 | 0002 | 0003 | 0004 | 0005 | 0006 | 0007 | 0008 | 0009 | 0000 | | |
| Thyroid Gland | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| C-cell, Adenoma | | | | | | | | | | | | X | X | | | | | | | | | | | | 6 | | |
| C-cell, Adenoma, Multiple | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | |
| Follicular Cell, Adenoma | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | |
| GENERAL BODY SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Peritoneum | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | |
| Mesothelioma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | |
| GENITAL SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Epididymis | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| Mesothelioma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | |
| Preputial Gland | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| Prostate | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| Adenoma, Multiple | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | |
| Mesothelioma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | |
| Seminal Vesicle | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| Adenoma | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | |
| Testes | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| Mesothelioma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | |
| Interstitial Cell, Adenoma | | | | | | | | | | | | | | | | | | | | | | | | | 2 | | |
| HEMATOPOIETIC SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Bone Marrow | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue

M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (CIMSTAR 3800)
 CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
 Time Report Requested: 12:32:34
 First Dose M/F: 04/14/08 / 04/14/08
 Lab: BNW

| WISTAR HAN RATS MALE
Control | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | * TOTALS | |
|--|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|----------|------|
| | 0627 | 0599 | 0597 | 0730 | 0779 | 0770 | 0631 | 0732 | 0779 | 0441 | 0771 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0572 | 0773 | 0772 | 0772 | 0773 | 0670 | 0665 | | 0722 |
| ANIMAL ID | 00026 | 00007 | 00008 | 00009 | 00000 | 00001 | 00002 | 00003 | 00004 | 00005 | 00006 | 00007 | 00008 | 00009 | 00000 | 00001 | 00002 | 00003 | 00004 | 00005 | 00006 | 00007 | 00008 | 00009 | 00000 | |
| Hemangiosarcoma | | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| Lymph Node | | + | | | | | + | + | | | | | | | | | | | | | | | | | 12 | |
| Lymph Node, Bronchial | | + | + | + | + | + | + | + | + | + | + | M | + | + | M | + | + | + | + | + | + | + | + | + | 42 | |
| Lymph Node, Mandibular | | + | M | + | + | + | + | + | + | + | + | + | + | + | M | + | + | + | + | + | + | + | + | + | 46 | |
| Lymph Node, Mediastinal | | + | + | M | + | + | + | + | + | + | + | + | + | + | M | + | + | + | + | + | + | + | + | + | 46 | |
| Lymph Node, Mesenteric Hemangiosarcoma | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50
3 | |
| Spleen Mesothelioma Malignant | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50
1 | |
| Thymus Thymoma Benign | | + | + | + | I | + | + | + | + | X | M | + | + | + | + | M | + | + | M | + | + | + | + | 40
1 | | |
| INTEGUMENTARY SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mammary Gland | | + | M | + | M | + | M | M | M | M | M | M | M | M | M | M | M | M | M | M | M | M | M | M | 6 | |
| Skin | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Basal Cell Carcinoma | | | | | | | | | | | | | | | | | | | | | | | | 1 | | |
| Keratoacanthoma | | | | | | | | | | | | | | | | | | | | | | | | 1 | | |
| Subcutaneous Tissue, Fibroma | | | | | | | | | | | | | | | | | | | | | | | | 1 | | |
| Subcutaneous Tissue, Fibrosarcoma | | | | | | | | | | | | | | | | | | | | | | | | 1 | | |
| Subcutaneous Tissue, Lipoma | | | | | | | | | | | | | | | | | | | | | | | | 1 | | |
| MUSCULOSKELETAL SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | |

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue

M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (CIMSTAR 3800)
 CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
 Time Report Requested: 12:32:34
 First Dose M/F: 04/14/08 / 04/14/08
 Lab: BNW

| WISTAR HAN RATS MALE | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | * TOTALS | |
|--|-------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------|--|
| | 067 | 059 | 059 | 073 | 072 | 073 | 061 | 073 | 072 | 049 | 073 | 073 | 073 | 073 | 073 | 073 | 073 | 052 | 073 | 072 | 072 | 073 | 066 | 067 | | |
| Control | ANIMAL ID | | | | | | | | | | | | | | | | | | | | | | | | * TOTALS | |
| | 000 | 000 | 000 | 000 | 000 | 000 | 000 | 000 | 000 | 000 | 000 | 000 | 000 | 000 | 000 | 000 | 000 | 000 | 000 | 000 | 000 | 000 | 000 | 000 | | |
| Bone Osteosarcoma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 501 | |
| Skeletal Muscle Mesothelioma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | 11 | |
| NERVOUS SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Brain Glioma Meningioma Malignant | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 5021 | |
| Peripheral Nerve | | + | + | | | | | | | | | | | | | | | | | | | | | | 5 | |
| Spinal Cord | | + | + | | | | | | | | | | | | | | | | | | | | | | 5 | |
| RESPIRATORY SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Larynx | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Lung Alveolar/Bronchiolar Adenoma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 501 | |
| Nose | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Trachea | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| SPECIAL SENSES SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Eye | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue

M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (CIMSTAR 3800)
 CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
 Time Report Requested: 12:32:34
 First Dose M/F: 04/14/08 / 04/14/08
 Lab: BNW

| WISTAR HAN RATS MALE | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | | males
(cont...) | |
|----------------------|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|--------------------|------|
| | 0730 | 0733 | 0734 | 0737 | 0737 | 0737 | 0737 | 0738 | 0737 | 0737 | 0737 | 0737 | 0737 | 0737 | 0737 | 0737 | 0737 | 0736 | 0735 | 0735 | 0734 | 0737 | 0737 | 0736 | 0737 | | 0736 |
| 10 mg/m3 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 |
| | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 |

ALIMENTARY SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Esophagus | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Large, Cecum | + | + | A | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | A | + | + | + | + | + | + | + | + |
| Intestine Large, Colon | + | + | A | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Large, Rectum | + | + | + | + | + | + | + | + | + | + | + | + | + | I | + | + | + | + | A | + | + | + | + | + | + | + | + |
| Intestine Small, Duodenum | + | + | A | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | A | + | + | + | + | + | + | + | + |
| Intestine Small, Ileum | + | + | A | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | A | + | + | + | + | + | + | + | + |
| Intestine Small, Jejunum | + | + | A | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | A | + | + | + | + | + | + | + | + |
| Liver | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Hepatocellular Adenoma | | | | | | | | | | | | | | X | | | | | | | | | | | | | |
| Hepatocellular Carcinoma | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lymphoma Malignant | | | X | | | | | | X | | | | | | | | | | | | | | | | | | |
| Mesentery | | | | | | | | | | | | | | + | | | | + | | | | | | | | + | |
| Pancreas | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Salivary Glands | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Stomach, Forestomach | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue

M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (CIMSTAR 3800)
 CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
 Time Report Requested: 12:32:34
 First Dose M/F: 04/14/08 / 04/14/08
 Lab: BNW

| WISTAR HAN RATS MALE
10 mg/m3 | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | | males
(cont...) |
|----------------------------------|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|--------------------|
| | 0730 | 0734 | 0737 | 0739 | 0742 | 0745 | 0748 | 0751 | 0754 | 0757 | 0760 | 0763 | 0766 | 0769 | 0772 | 0775 | 0778 | 0781 | 0784 | 0787 | 0790 | 0793 | 0796 | 0799 | | |
| ANIMAL ID | 0020 | 0022 | 0023 | 0024 | 0025 | 0026 | 0027 | 0028 | 0029 | 0030 | 0031 | 0032 | 0033 | 0034 | 0035 | 0036 | 0037 | 0038 | 0039 | 0040 | 0041 | 0042 | 0043 | 0044 | 0045 | |

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Thyroid Gland | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | |
| C-cell, Adenoma | | | | | X | X | | | | | | | | | | | | | | | | | | | X |
| Follicular Cell, Carcinoma | | | | | | | | | | | | | | | | | | | | | | | | | |

GENERAL BODY SYSTEM

NONE

GENITAL SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Epididymis | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mesothelioma Malignant | | | | X | | | | | | | | | | | | | | | | | | | | | |
| Preputial Gland | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Prostate | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Adenoma | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | |
| Seminal Vesicle | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Testes | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Mesothelioma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | |
| Interstitial Cell, Adenoma | | | | | | | | | | | | | | | | | | | | | | | | | |

HEMATOPOIETIC SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bone Marrow | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
|-------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue

M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (CIMSTAR 3800)
 CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
 Time Report Requested: 12:32:34
 First Dose M/F: 04/14/08 / 04/14/08
 Lab: BNW

| WISTAR HAN RATS MALE

10 mg/m3 | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | | males
(cont...) | |
|---------------------------------------|-------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------------------|--|
| | 0730 | 0734 | 0737 | 0739 | 0742 | 0745 | 0748 | 0751 | 0754 | 0757 | 0760 | 0763 | 0766 | 0769 | 0772 | 0775 | 0778 | 0781 | 0784 | 0787 | 0790 | 0793 | 0796 | 0799 | | | |
| ANIMAL ID | 002001 | 002002 | 002003 | 002004 | 002005 | 002006 | 002007 | 002008 | 002009 | 002010 | 002011 | 002012 | 002013 | 002014 | 002015 | 002016 | 002017 | 002018 | 002019 | 002020 | 002021 | 002022 | 002023 | 002024 | 002025 | | |
| Lymphoma Malignant | | | | | | | | X | | | | | | | | | | | | | | | | | | | |
| Lymph Node | | | + | | | | | | | | | | | | | | | | | | | | | | | | |
| Axillary, Lymphoma Malignant | | | X | | | | | | | | | | | | | | | | | | | | | | | | |
| Pancreatic, Lymphoma Malignant | | | X | | | | | | | | | | | | | | | | | | | | | | | | |
| Lymph Node, Bronchial | + | + | + | + | + | + | M | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | | |
| Lymphoma Malignant | | | X | | | | | X | | | | | | | | | | | | | | | | | | | |
| Lymph Node, Mandibular | + | + | + | + | + | + | + | + | M | + | + | + | + | + | + | + | + | M | + | M | + | + | + | + | + | | |
| Carcinoma, Metastatic, Zymbal'S Gland | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lymphoma Malignant | | | | | | | | X | | | | | | | | | | | | | | | | | | | |
| Lymph Node, Mediastinal | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | | |
| Lymphoma Malignant | | | X | | | | | X | | | | | | | | | | | | | | | | | | | |
| Lymph Node, Mesenteric | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | | |
| Hemangiosarcoma | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lymphoma Malignant | | | X | | | | | X | | | | | | | | | | | | | | | | | | | |
| Spleen | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | | |
| Lymphoma Malignant | | | X | | | | | X | | | | | | | | | | | | | | | | | | | |
| Thymus | + | + | + | + | + | + | + | + | I | + | + | + | + | + | M | + | + | + | + | + | + | + | + | + | + | | |
| Lymphoma Malignant | | | | | | | | X | | | | | | | | | | | | | | | | | | | |
| INTEGUMENTARY SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mammary Gland | M | + | M | + | M | + | M | M | M | M | M | + | M | M | M | M | M | M | M | M | M | M | M | M | M | | |
| Skin | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | | |

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue

M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (CIMSTAR 3800)
 CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
 Time Report Requested: 12:32:34
 First Dose M/F: 04/14/08 / 04/14/08
 Lab: BNW

| WISTAR HAN RATS MALE | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | ANIMAL ID | males
(cont...) |
|----------------------|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----------|--------------------|
| | 0730 | 0734 | 0737 | 0739 | 0742 | 0745 | 0748 | 0751 | 0754 | 0757 | 0760 | 0763 | 0766 | 0769 | 0772 | 0775 | 0778 | 0781 | 0784 | 0787 | 0790 | 0793 | 0796 | 0799 | | |
| 10 mg/m3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 002001 | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 002002 | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 002003 | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 002004 | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 002005 | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 002006 | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 002007 | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 002008 | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 002009 | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 002010 | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 002011 | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 002012 | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 002013 | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 002014 | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 002015 | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 002016 | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 002017 | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 002018 | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 002019 | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 002020 | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 002021 | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 002022 | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 002023 | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 002024 | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 002025 | |

Sebacous Gland, Adenoma X
 Subcutaneous Tissue, Fibroma X
 Subcutaneous Tissue, Lymphoma Malignant X
 Subcutaneous Tissue, Neural Crest Tumor X
 Subcutaneous Tissue, Schwannoma Malignant X

MUSCULOSKELETAL SYSTEM

Bone +
 Osteosarcoma X
 Skeletal Muscle
 Sarcoma

NERVOUS SYSTEM

Brain +
 Carcinoma, Metastatic, Zymbal'S Gland
 Glioma X
 Granular Cell Tumor Benign X
 Granular Cell Tumor Malignant
 Lymphoma Malignant X
 Peripheral Nerve + +
 Spinal Cord + +

RESPIRATORY SYSTEM

Larynx +
 Lymphoma Malignant X

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue

M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (CIMSTAR 3800)
 CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
 Time Report Requested: 12:32:34
 First Dose M/F: 04/14/08 / 04/14/08
 Lab: BNW

| WISTAR HAN RATS MALE
10 mg/m3 | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | | males
(cont...) |
|--|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|--------------------|
| | 0730 | 0730 | 0734 | 0737 | 0737 | 0737 | 0737 | 0737 | 0737 | 0737 | 0737 | 0737 | 0737 | 0737 | 0737 | 0737 | 0737 | 0737 | 0737 | 0737 | 0737 | 0737 | 0737 | 0737 | 0737 | |
| ANIMAL ID | 0020 | 0020 | 0020 | 0020 | 0020 | 0020 | 0020 | 0020 | 0020 | 0020 | 0020 | 0020 | 0020 | 0020 | 0020 | 0020 | 0020 | 0020 | 0020 | 0020 | 0020 | 0020 | 0020 | 0020 | 0020 | 0020 |
| Lung | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| Lymphoma Malignant | | | X | | | | | | X | | | | | | | | | | | | | | | | | |
| Osteosarcoma, Metastatic, Bone | | | | | | | | | | | | | | | | | | | X | | | | | | | |
| Osteosarcoma, Metastatic, Uncertain Primary Site | | | | | | | X | | | | | | | | | | | | | | | | | | | |
| Nose | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| Lymphoma Malignant | | | | | | | | | X | | | | | | | | | | | | | | | | | |
| Trachea | + | + | A | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| SPECIAL SENSES SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Eye | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| Lymphoma Malignant | | | | | | | | | X | | | | | | | | | | | | | | | | | |
| Harderian Gland | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| Lymphoma Malignant | | | | | | | | | X | | | | | | | | | | | | | | | | | |
| Zymbal's Gland | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Carcinoma | | | | | | | | | | | | | | | | | | | | | | | | | | |
| URINARY SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Kidney | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| Lymphoma Malignant | | | X | | | | | | X | | | | | | | | | | | | | | | | | |
| Renal Tubule, Adenoma | | | | | | | X | | | | | | | | | | | | | | | | | | | |
| Urinary Bladder | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| Lymphoma Malignant | | | X | | | | | | | | | | | | | | | | | | | | | | | |

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue

M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (CIMSTAR 3800)
 CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
 Time Report Requested: 12:32:34
 First Dose M/F: 04/14/08 / 04/14/08
 Lab: BNW

| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--------------------------------------|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------------------|-------|
| WISTAR HAN RATS MALE

10 mg/m3 | DAY ON TEST | 07030 | 07330 | 05470 | 07329 | 07729 | 07729 | 0286 | 0770 | 0770 | 0770 | 0770 | 0770 | 0770 | 0770 | 0630 | 0562 | 0556 | 0479 | 0770 | 0673 | 0720 | 0663 | 0760 | 0761 | males
(cont...) | |
| | ANIMAL ID | 00201 | 00022 | 00023 | 00024 | 00025 | 00026 | 00027 | 00028 | 00029 | 00030 | 00031 | 00032 | 00033 | 00034 | 00035 | 00036 | 00037 | 00038 | 00039 | 00040 | 00041 | 00042 | 00043 | 00044 | | 00045 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 |

SYSTEMIC LESIONS

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Multiple Organ | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Lymphoma Malignant | | | X | | | | | X | | | | | | | | | | | | | | | | | |
| Mesothelioma Malignant | | | | X | | | | | | | | | | | | | | | | | | | | | |

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue

M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (CIMSTAR 3800)
 CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
 Time Report Requested: 12:32:34
 First Dose M/F: 04/14/08 / 04/14/08
 Lab: BNW

| WISTAR HAN RATS MALE
10 mg/m3 | DAY ON TEST | | ANIMAL ID | | | | | | | | | | | | | | | | | | | | * TOTALS | | |
|----------------------------------|-------------|------|-----------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----------|------|------|
| | 0729 | 0729 | 0730 | 0730 | 0731 | 0731 | 0732 | 0732 | 0733 | 0733 | 0734 | 0734 | 0735 | 0735 | 0736 | 0736 | 0737 | 0737 | 0738 | 0738 | 0739 | 0739 | | 0740 | 0740 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 7 | 4 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 6 | 7 | 6 | 7 | 7 | 7 | 7 | 7 | 5 | 7 | 7 | 6 | | |
| | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 0 | 3 | 0 | 3 | 3 | 2 | 5 | 3 | 3 | 2 | 3 | 3 | 0 | 3 | 2 | 2 | | |
| | 9 | 9 | 0 | 0 | 1 | 0 | 0 | 4 | 0 | 4 | 0 | 7 | 9 | 3 | 0 | 0 | 9 | 1 | 0 | 5 | 0 | 3 | 2 | | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | | |
| | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | | |
| | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | |

ALIMENTARY SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | |
|---------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|
| Esophagus | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Intestine Large, Cecum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 48 |
| Intestine Large, Colon | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 49 |
| Intestine Large, Rectum | + | + | + | + | + | + | + | + | + | + | + | + | I | + | + | + | + | + | + | + | + | + | + | 47 |
| Intestine Small, Duodenum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 48 |
| Intestine Small, Ileum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 48 |
| Intestine Small, Jejunum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 48 |
| Liver | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Hepatocellular Adenoma | | | | | | | | | | | | | | | | | | | | | | | 1 | 1 |
| Hepatocellular Carcinoma | | | | | | | | | | | | | | | | | | | | | | X | | 1 |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | 2 |
| Mesentery | + | | | | + | | | | | | | + | | | | | | | + | | | | | 7 |
| Pancreas | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Salivary Glands | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Stomach, Forestomach | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue

M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (CIMSTAR 3800)
 CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
 Time Report Requested: 12:32:34
 First Dose M/F: 04/14/08 / 04/14/08
 Lab: BNW

| WISTAR HAN RATS MALE
10 mg/m3 | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | * TOTALS |
|----------------------------------|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----------|
| | 0729 | 0439 | 0730 | 0731 | 0732 | 0733 | 0734 | 0735 | 0736 | 0737 | 0738 | 0739 | 0740 | 0741 | 0742 | 0743 | 0744 | 0745 | 0746 | 0747 | 0748 | 0749 | 0750 | 0751 | |
| ANIMAL ID | 0022 | 0022 | 0022 | 0022 | 0023 | 0023 | 0023 | 0023 | 0023 | 0023 | 0023 | 0023 | 0023 | 0023 | 0023 | 0023 | 0023 | 0023 | 0023 | 0023 | 0023 | 0023 | 0023 | 0023 | |
| Stomach, Glandular | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Tooth | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| CARDIOVASCULAR SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | |
| Blood Vessel | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Heart | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| ENDOCRINE SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | |
| Adrenal Cortex | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Carcinoma | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| Adrenal Medulla | + | + | + | + | + | M | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 48 | |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | 2 | |
| Pheochromocytoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| Islets, Pancreatic | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Parathyroid Gland | + | + | + | M | + | + | + | + | + | + | M | + | M | + | + | + | + | + | + | + | M | + | + | 43 | |
| Adenoma | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| Pituitary Gland | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| Pars Distalis, Adenoma | X | | X | | | | | | | | X | X | X | X | | | | | X | | | X | 18 | | |
| Pars Intermedia, Adenoma | | | | | | | | | X | | | | | | | | | | | | | | | 1 | |

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue

M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (CIMSTAR 3800)
 CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
 Time Report Requested: 12:32:34
 First Dose M/F: 04/14/08 / 04/14/08
 Lab: BNW

| WISTAR HAN RATS MALE

10 mg/m3 | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | * TOTALS |
|--------------------------------------|-------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|----------|
| | 0729 | 0439 | 0730 | 0731 | 0732 | 0733 | 0734 | 0735 | 0736 | 0737 | 0738 | 0739 | 0740 | 0741 | 0742 | 0743 | 0744 | 0745 | 0746 | 0747 | 0748 | 0749 | 0750 | | |
| ANIMAL ID | 002266 | 002267 | 002268 | 002269 | 002270 | 002271 | 002272 | 002273 | 002274 | 002275 | 002276 | 002277 | 002278 | 002279 | 002280 | 002281 | 002282 | 002283 | 002284 | 002285 | 002286 | 002287 | 002288 | 002289 | |
| Thyroid Gland | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| C-cell, Adenoma | | | | X | | | | | | | | | X | | | | | | | | | | | 5 | |
| Follicular Cell, Carcinoma | | | | | | | | X | | | | | | | | | | | | | | | | 1 | |
| GENERAL BODY SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | |
| NONE | | | | | | | | | | | | | | | | | | | | | | | | | |
| GENITAL SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | |
| Epididymis | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| Mesothelioma Malignant | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| Preputial Gland | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Prostate | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Adenoma | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| Seminal Vesicle | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Testes | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Mesothelioma Malignant | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| Interstitial Cell, Adenoma | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| HEMATOPOIETIC SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | |
| Bone Marrow | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue

M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (CIMSTAR 3800)
 CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
 Time Report Requested: 12:32:34
 First Dose M/F: 04/14/08 / 04/14/08
 Lab: BNW

| WISTAR HAN RATS MALE
10 mg/m3 | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | * TOTALS | |
|---|-------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|----------|---|
| | 0729 | 0439 | 0730 | 0731 | 0732 | 0733 | 0734 | 0735 | 0736 | 0737 | 0738 | 0739 | 0740 | 0741 | 0742 | 0743 | 0744 | 0745 | 0746 | 0747 | 0748 | 0749 | 0750 | 0751 | | |
| ANIMAL ID | 002226 | 000027 | 000028 | 000029 | 000030 | 000031 | 000032 | 000033 | 000034 | 000035 | 000036 | 000037 | 000038 | 000039 | 000040 | 000041 | 000042 | 000043 | 000044 | 000045 | 000046 | 000047 | 000048 | 000049 | 000050 | |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| Lymph Node | | | + | | | | | | | | | | | | | | | | | | | | | | 5 | |
| Axillary, Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| Pancreatic, Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| Lymph Node, Bronchial
Lymphoma Malignant | + | + | M | M | + | + | + | M | + | + | M | M | + | + | + | M | M | + | + | M | M | + | + | + | 40 | |
| | | | | | | | | | | | | | | | | | | | | | | | | | 2 | |
| Lymph Node, Mandibular
Carcinoma, Metastatic, Zymbal'S Gland
Lymphoma Malignant | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | M | + | + | + | + | 46 | |
| | | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| | | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| Lymph Node, Mediastinal
Lymphoma Malignant | + | M | M | + | + | + | + | + | + | + | + | + | + | + | + | M | + | M | + | + | + | M | + | + | 45 | |
| | | | | | | | | | | | | | | | | | | | | | | | | | 2 | |
| Lymph Node, Mesenteric
Hemangiosarcoma
Lymphoma Malignant | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| | | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| | | | | | | | | | | | | | | | | | | | | | | | | | 2 | |
| Spleen
Lymphoma Malignant | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| | | | | | | | | | | | | | | | | | | | | | | | | | 2 | |
| Thymus
Lymphoma Malignant | M | + | M | I | + | + | I | + | + | + | M | + | + | + | + | + | + | + | + | + | + | + | + | 43 | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| INTEGUMENTARY SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mammary Gland | M | M | M | M | M | M | M | M | M | M | M | M | M | M | M | M | M | M | M | M | M | + | M | M | M | 6 |
| Skin | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue

M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (CIMSTAR 3800)
 CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
 Time Report Requested: 12:32:34
 First Dose M/F: 04/14/08 / 04/14/08
 Lab: BNW

| WISTAR HAN RATS MALE
10 mg/m3 | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | * TOTALS |
|--|-------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|----------|
| | 0729 | 0439 | 0730 | 0731 | 0732 | 0733 | 0734 | 0735 | 0736 | 0737 | 0738 | 0739 | 0740 | 0741 | 0742 | 0743 | 0744 | 0745 | 0746 | 0747 | 0748 | 0749 | 0750 | 0751 | |
| ANIMAL ID | 002226 | 000022 | 000022 | 000022 | 000022 | 000022 | 000022 | 000022 | 000022 | 000022 | 000022 | 000022 | 000022 | 000022 | 000022 | 000022 | 000022 | 000022 | 000022 | 000022 | 000022 | 000022 | 000022 | 000022 | |
| Lung | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | 2 | |
| Osteosarcoma, Metastatic, Bone | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| Osteosarcoma, Metastatic, Uncertain Primary Site | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| Nose | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| Trachea | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 49 | |
| SPECIAL SENSES SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | |
| Eye | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| Harderian Gland | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| Zymbal's Gland | | | | | | | | | | | | | | | | | | | | | | | | 2 | |
| Carcinoma | | | | | | | | | | | | | | | | | | | | | | | | 2 | |
| URINARY SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | |
| Kidney | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | 2 | |
| Renal Tubule, Adenoma | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| Urinary Bladder | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | 1 | |

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue

M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL

Metal working fluids (CIMSTAR 3800)

CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014

Time Report Requested: 12:32:34

First Dose M/F: 04/14/08 / 04/14/08

Lab: BNW

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------------|--|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| DAY ON TEST | | 7 | 4 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 6 | 7 | 6 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 5 | 7 | 7 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| WISTAR HAN RATS MALE | | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 0 | 3 | 0 | 3 | 3 | 2 | 5 | 3 | 3 | 2 | 3 | 3 | 3 | 0 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| 10 mg/m3 | | 9 | 9 | 0 | 0 | 1 | 0 | 0 | 4 | 0 | 4 | 0 | 0 | 9 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 5 | 0 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ANIMAL ID | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| | | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 0 |
| | | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * TOTALS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

SYSTEMIC LESIONS

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|---|
| Multiple Organ | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 |
| Mesothelioma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 |

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue

M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (CIMSTAR 3800)
 CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
 Time Report Requested: 12:32:34
 First Dose M/F: 04/14/08 / 04/14/08
 Lab: BNW

| | | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | | males
(cont...) |
|----------------------|----------|-------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|--------------------|
| WISTAR HAN RATS MALE | 30 mg/m3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | | 7 | 7 | 7 | 7 | 7 | 5 | 7 | 6 | 7 | 7 | 7 | 7 | 7 | 7 | 5 | 7 | 7 | 7 | 7 | 7 | 7 | 6 | 7 | 7 | 7 | |
| | | 3 | 2 | 2 | 3 | 1 | 6 | 0 | 5 | 0 | 0 | 2 | 2 | 2 | 3 | 6 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 2 | |
| | | 1 | 9 | 9 | 1 | 1 | 4 | 4 | 3 | 4 | 4 | 9 | 6 | 9 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 9 | 2 | 2 | 0 | 0 | |
| | | ANIMAL ID | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | |
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | |

ALIMENTARY SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|---------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Esophagus | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Large, Cecum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Large, Colon | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Large, Rectum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Small, Duodenum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Small, Ileum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Small, Jejunum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Liver | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Mesentery | | | | | | | | | | | | | | | | | | | | | | | | | + |
| Oral Mucosa | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pancreas | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Salivary Glands | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Stomach, Forestomach | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Stomach, Glandular | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |

CARDIOVASCULAR SYSTEM

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue

M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (CIMSTAR 3800)
 CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
 Time Report Requested: 12:32:34
 First Dose M/F: 04/14/08 / 04/14/08
 Lab: BNW

| WISTAR HAN RATS MALE | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | | ANIMAL ID | males
(cont...) |
|----------------------|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----------|--------------------|
| | 0731 | 0739 | 0779 | 0773 | 0771 | 0756 | 0770 | 0763 | 0774 | 0774 | 0779 | 0776 | 0779 | 0770 | 0754 | 0770 | 0773 | 0773 | 0773 | 0772 | 0772 | 0762 | 0773 | 0773 | 0779 | | |
| 30 mg/m3 | 0040 | 0044 | 0044 | 0044 | 0044 | 0044 | 0044 | 0044 | 0044 | 0044 | 0044 | 0044 | 0044 | 0044 | 0044 | 0044 | 0044 | 0044 | 0044 | 0044 | 0044 | 0044 | 0044 | 0044 | 0044 | 0044 | males
(cont...) |

| | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|--|
| Blood Vessel | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| Heart Schwannoma Benign | + | + | + | | + | + | + | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |

ENDOCRINE SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|--|
| Adrenal Cortex Adenoma Carcinoma | + | + | + | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| Adrenal Medulla Pheochromocytoma Benign | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| Islets, Pancreatic Adenoma Carcinoma | + | + | + | + | + | + | + | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| Parathyroid Gland | M | + | + | M | + | + | + | + | + | + | + | + | + | + | M | + | + | + | + | + | + | M | + | + | + | |
| Pituitary Gland Pars Distalis, Adenoma Pars Distalis, Carcinoma Pars Intermedia, Adenoma | + | + | + | + | + | + | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| Thyroid Gland C-cell, Adenoma C-cell, Carcinoma Follicular Cell, Carcinoma | + | + | + | | + | + | + | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue
 M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (CIMSTAR 3800)
 CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
 Time Report Requested: 12:32:34
 First Dose M/F: 04/14/08 / 04/14/08
 Lab: BNW

| WISTAR HAN RATS MALE
30 mg/m3 | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | | ANIMAL ID | males
(cont...) |
|----------------------------------|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----------|--------------------|
| | 0731 | 0732 | 0733 | 0734 | 0735 | 0736 | 0737 | 0738 | 0739 | 0740 | 0741 | 0742 | 0743 | 0744 | 0745 | 0746 | 0747 | 0748 | 0749 | 0750 | 0751 | 0752 | 0753 | 0754 | 0755 | | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0040 | |
| | 7 | 7 | 7 | 7 | 7 | 5 | 7 | 6 | 7 | 7 | 7 | 7 | 7 | 7 | 5 | 7 | 7 | 7 | 7 | 7 | 7 | 6 | 7 | 7 | 7 | 0000 | |
| | 3 | 2 | 2 | 3 | 1 | 6 | 0 | 5 | 0 | 0 | 2 | 2 | 2 | 3 | 6 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 0000 | |
| | 1 | 9 | 9 | 1 | 1 | 4 | 4 | 3 | 4 | 4 | 9 | 6 | 9 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 2 | 2 | 0 | 0000 | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0000 | |
| | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 0000 | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 0000 | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 2 | 2 | 2 | 0000 | |

Lymphoma Malignant

Lymph Node, Mesenteric
Hemangioma

Spleen

Thymus
Thymoma Benign

INTEGUMENTARY SYSTEM

Mammary Gland

Skin
Basal Cell Carcinoma
Squamous Cell Papilloma
Subcutaneous Tissue, Fibroma

MUSCULOSKELETAL SYSTEM

Bone

Skeletal Muscle
Sarcoma

NERVOUS SYSTEM

Brain
Glioma
Granular Cell Tumor Malignant

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue

M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (CIMSTAR 3800)
 CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
 Time Report Requested: 12:32:34
 First Dose M/F: 04/14/08 / 04/14/08
 Lab: BNW

| WISTAR HAN RATS MALE | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | males
(cont...) | |
|----------------------|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|--------------------|------|
| | 0731 | 0732 | 0733 | 0734 | 0735 | 0736 | 0737 | 0738 | 0739 | 0740 | 0741 | 0742 | 0743 | 0744 | 0745 | 0746 | 0747 | 0748 | 0749 | 0750 | 0751 | 0752 | 0753 | 0754 | | 0755 |
| 30 mg/m3 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | |
| | 4401 | 4402 | 4403 | 4404 | 4405 | 4406 | 4407 | 4408 | 4409 | 4410 | 4411 | 4412 | 4413 | 4414 | 4415 | 4416 | 4417 | 4418 | 4419 | 4420 | 4421 | 4422 | 4423 | 4424 | 4425 | |

Peripheral Nerve

+ M + + + +

Spinal Cord

+ + + + +

RESPIRATORY SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|--------------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Larynx | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Lung
Alveolar/Bronchiolar Adenoma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Nose | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Trachea | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |

SPECIAL SENSES SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ear | | | | | | | | | | | | | | | | | | | | | | | | | |
| Eye | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Harderian Gland
Adenoma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Zymbal's Gland | | | | | | | | | | | | | | | | | | | | | | | | | |

URINARY SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kidney | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Urinary Bladder | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue
 M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (CIMSTAR 3800)
 CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
 Time Report Requested: 12:32:34
 First Dose M/F: 04/14/08 / 04/14/08
 Lab: BNW

| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----------------------------|-------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----------------------------|---|
| WISTAR HAN RATS MALE | 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 | males
(cont...) | |
| | | 7 | 7 | 7 | 7 | 7 | 5 | 7 | 6 | 7 | 7 | 7 | 7 | 7 | 7 | 5 | 7 | 7 | 7 | 7 | 7 | 6 | 7 | 7 | 7 | | |
| | | 3 | 2 | 2 | 3 | 1 | 6 | 0 | 5 | 0 | 0 | 2 | 2 | 2 | 3 | 6 | 3 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 3 | | 2 |
| 30 mg/m3 | ANIMAL ID | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | |

SYSTEMIC LESIONS

| | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|--|
| Multiple Organ | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mesothelioma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | | |

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue
 M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (CIMSTAR 3800)
 CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
 Time Report Requested: 12:32:34
 First Dose M/F: 04/14/08 / 04/14/08
 Lab: BNW

| WISTAR HAN RATS MALE
30 mg/m3 | DAY ON TEST | | | | | | | | | | | | | | | | | | | | * TOTALS | | | | | |
|---|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------|-------|-------|-------|--------------------|------|
| | 0729 | 0730 | 0739 | 0779 | 0770 | 0771 | 0772 | 0773 | 0774 | 0775 | 0776 | 0777 | 0778 | 0779 | 0780 | 0781 | 0782 | 0783 | 0784 | 0785 | | 0786 | 0787 | 0788 | 0789 | 0790 |
| ANIMAL ID | 00426 | 00447 | 00408 | 00409 | 00410 | 00411 | 00412 | 00413 | 00414 | 00415 | 00416 | 00417 | 00418 | 00419 | 00420 | 00421 | 00422 | 00423 | 00424 | 00425 | 00426 | 00427 | 00428 | 00429 | 00430 | |
| Blood Vessel | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Heart
Schwannoma Benign | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50
2 | |
| ENDOCRINE SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Adrenal Cortex
Adenoma
Carcinoma | + | + | + | + | + | + | + | + | + | + | + | A | + | + | + | + | + | + | + | + | + | + | + | + | 49
2
1 | |
| Adrenal Medulla
Pheochromocytoma Benign | + | + | + | + | + | + | + | + | + | + | + | A | + | + | + | + | + | + | + | + | + | + | + | + | 49
1 | |
| Islets, Pancreatic
Adenoma
Carcinoma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | A | + | + | + | + | + | 49
2
1 | |
| Parathyroid Gland | + | + | M | + | + | + | M | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 44 | |
| Pituitary Gland
Pars Distalis, Adenoma
Pars Distalis, Carcinoma
Pars Intermedia, Adenoma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50
11
1
2 | |
| Thyroid Gland
C-cell, Adenoma
C-cell, Carcinoma
Follicular Cell, Carcinoma | + | + | + | + | + | + | + | + | + | + | + | A | + | + | + | + | + | + | + | + | + | + | + | + | 49
3
1
1 | |

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue

M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (CIMSTAR 3800)
 CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
 Time Report Requested: 12:32:34
 First Dose M/F: 04/14/08 / 04/14/08
 Lab: BNW

| WISTAR HAN RATS MALE
30 mg/m3 | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | * TOTALS | | | |
|-----------------------------------|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------|---|---------|---------|
| | 0729 | 0730 | 0779 | 0779 | 0779 | 0779 | 0779 | 0779 | 0779 | 0779 | 0779 | 0779 | 0779 | 0779 | 0779 | 0779 | 0779 | 0779 | 0779 | 0779 | 0779 | 0779 | 0779 | 0779 | | | | |
| ANIMAL ID | 00426 | 00442 | 00442 | 00444 | 00444 | 00444 | 00444 | 00444 | 00444 | 00444 | 00444 | 00444 | 00444 | 00444 | 00444 | 00444 | 00444 | 00444 | 00444 | 00444 | 00444 | 00444 | 00444 | 00444 | | | | |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | X | 1 | | | |
| Lymph Node, Mesenteric Hemangioma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | M | + | + | + | + | + | + | X | 49
1 |
| Spleen | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Thymus Thymoma Benign | M | + | + | + | + | + | + | + | M | + | + | + | + | M | + | + | + | + | I | + | + | M | + | + | + | + | 44
2 | |
| INTEGUMENTARY SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mammary Gland | M | M | M | M | M | M | M | M | M | M | M | M | M | M | M | M | M | M | M | M | M | M | M | M | M | M | M | 3 |
| Skin | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Basal Cell Carcinoma | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Squamous Cell Papilloma | X | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Subcutaneous Tissue, Fibroma | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| MUSCULOSKELETAL SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Bone | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Skeletal Muscle | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Sarcoma | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| NERVOUS SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Brain | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Glioma | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Granular Cell Tumor Malignant | | | | | | | | | | | | | | | | | | | | | | | | | | | X | 1 |

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue

M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (CIMSTAR 3800)
 CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
 Time Report Requested: 12:32:34
 First Dose M/F: 04/14/08 / 04/14/08
 Lab: BNW

| WISTAR HAN RATS MALE
30 mg/m3 | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | * TOTALS | | | | |
|--------------------------------------|-------------|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----------|------|------|------|---------|
| | ANIMAL ID | | 0729 | 0730 | 0739 | 0770 | 0771 | 0772 | 0773 | 0774 | 0775 | 0776 | 0777 | 0778 | 0779 | 0780 | 0781 | 0782 | 0783 | 0784 | 0785 | 0786 | | 0787 | 0788 | 0789 | 0790 |
| Peripheral Nerve | | | | | | | | | | | | | | | | | | | | | | | | | | | 6 |
| Spinal Cord | | | | | | | | | | | | | | | | | | | | | | | | | | | 7 |
| RESPIRATORY SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Larynx | | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Lung
Alveolar/Bronchiolar Adenoma | | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50
1 |
| Nose | | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Trachea | | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| SPECIAL SENSES SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ear | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Eye | | | + | + | + | + | + | + | + | + | + | + | A | + | + | + | + | + | + | A | + | + | + | + | + | + | 48 |
| Harderian Gland
Adenoma | | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50
1 |
| Zymbal's Gland | | | | | | | | | | | | | | | | | | | | | | | | | + | 1 | |
| URINARY SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Kidney | | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | A | + | + | + | + | + | + | 49 |
| Urinary Bladder | | | + | + | + | + | + | + | + | + | + | + | A | + | + | + | + | + | + | A | + | + | + | + | + | + | 48 |

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue

M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (CIMSTAR 3800)
 CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
 Time Report Requested: 12:32:34
 First Dose M/F: 04/14/08 / 04/14/08
 Lab: BNW

| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
|-----------------------------|-------------|-----------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WISTAR HAN RATS MALE | DAY ON TEST | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 6 | 6 | 6 | 7 | |
| | | 2 | 3 | 2 | 2 | 3 | 2 | 3 | 3 | 2 | 2 | 3 | 0 | 2 | 3 | 2 | 3 | 3 | 3 | 3 | 0 | 2 | 2 | 2 | 4 | 8 | 8 | 2 |
| | | 9 | 0 | 9 | 9 | 0 | 9 | 0 | 0 | 9 | 9 | 0 | 0 | 9 | 0 | 9 | 0 | 9 | 1 | 9 | 9 | 9 | 9 | 9 | 6 | 4 | 4 | 2 |
| 30 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 | 0 | 0 | 0 | 0 | 0 |
| | | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| | | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 |
| | | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 0 | 0 |
| | | * TOTALS | | | | | | | | | | | | | | | | | | | | | | | | | | |

SYSTEMIC LESIONS

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|
| Multiple Organ | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Mesothelioma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 |

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue

M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (CIMSTAR 3800)
 CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
 Time Report Requested: 12:32:34
 First Dose M/F: 04/14/08 / 04/14/08
 Lab: BNW

| | | DAY ON TEST | | | | | | | | | | | | | | | | | | | | males
(cont...) | | | | | | |
|-----------------------------|-----------|-------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|--------------------|---|---|---|---|---|---|
| WISTAR HAN RATS MALE | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | | | |
| | | 7 | 7 | 5 | 5 | 7 | 7 | 7 | 7 | 7 | 7 | 2 | 6 | 4 | 7 | 7 | 6 | 7 | 7 | 7 | 6 | | 7 | 7 | 7 | | | |
| 100 mg/m3 | | 0 | 0 | 9 | 0 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 0 | 4 | 7 | 3 | 3 | 7 | 2 | 3 | 2 | 2 | 9 | 0 | | | | |
| | | 4 | 4 | 5 | 4 | 1 | 1 | 0 | 1 | 0 | 9 | 5 | 2 | 6 | 8 | 0 | 1 | 5 | 9 | 0 | 2 | 2 | 5 | 4 | 0 | 3 | 3 | 1 |
| | ANIMAL ID | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | | |

ALIMENTARY SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Esophagus | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Large, Cecum | + | + | + | A | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Large, Colon
Lymphoma Malignant | + | + | + | A | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Large, Rectum | + | + | + | A | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Small, Duodenum | + | + | + | A | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Small, Ileum | + | + | + | A | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Small, Jejunum | + | + | + | A | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Liver
Lymphoma Malignant | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Mesentery
Liposarcoma
Lymphoma Malignant | | + | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pancreas
Carcinoma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Salivary Glands
Sarcoma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Stomach, Forestomach | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue

M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL

Metal working fluids (CIMSTAR 3800)

CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014

Time Report Requested: 12:32:34

First Dose M/F: 04/14/08 / 04/14/08

Lab: BNW

| | | DAY ON TEST | | | | | | | | | | | | | | | | | | | | males
(cont...) |
|--|--|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|--------------------|
| WISTAR HAN RATS MALE | | 0704 | 0704 | 0705 | 0705 | 0707 | 0707 | 0707 | 0707 | 0707 | 0707 | 0707 | 0707 | 0707 | 0707 | 0707 | 0707 | 0707 | 0707 | 0707 | 0707 | |
| 100 mg/m3 | | 0001 | 0002 | 0003 | 0004 | 0005 | 0006 | 0007 | 0008 | 0009 | 0010 | 0011 | 0012 | 0013 | 0014 | 0015 | 0016 | 0017 | 0018 | 0019 | 0020 | 0021 |
| ANIMAL ID | | 0060 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 |
| Lymphoma Malignant | | | X | | | | | | | | | | | | | | | | | | | |
| Stomach, Glandular Lymphoma Malignant | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Tooth | | | | | | | | | | | | | | | | | | | | | | + |
| CARDIOVASCULAR SYSTEM | | | | | | | | | | | | | | | | | | | | | | |
| Blood Vessel Lymphoma Malignant | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Heart | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| ENDOCRINE SYSTEM | | | | | | | | | | | | | | | | | | | | | | |
| Adrenal Cortex Adenoma Carcinoma Lymphoma Malignant | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Adrenal Medulla Lymphoma Malignant Pheochromocytoma Benign | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Islets, Pancreatic Adenoma | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Parathyroid Gland Adenoma | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | M | + | + |

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue

M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (CIMSTAR 3800)
 CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
 Time Report Requested: 12:32:34
 First Dose M/F: 04/14/08 / 04/14/08
 Lab: BNW

| WISTAR HAN RATS MALE

100 mg/m3 | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | ANIMAL ID | males
(cont...) |
|---------------------------------------|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----------|--------------------|
| | 0704 | 0704 | 0705 | 0705 | 0707 | 0707 | 0707 | 0707 | 0707 | 0707 | 0707 | 0707 | 0707 | 0707 | 0707 | 0707 | 0707 | 0707 | 0707 | 0707 | 0707 | 0707 | 0707 | 0707 | | |
| | 004 | 004 | 005 | 005 | 007 | 007 | 007 | 007 | 007 | 007 | 007 | 007 | 007 | 007 | 007 | 007 | 007 | 007 | 007 | 007 | 007 | 007 | 007 | 007 | 0001 | |

| | | | | | | | | | | | | | | | | | | | | | | | | |
|--------------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Pituitary Gland | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Sarcoma, Metastatic, Salivary Glands | | | | | | | | | | | | | | | | | | | | | | | | |
| Pars Distalis, Adenoma | | X | X | X | X | | | X | | | X | | | | | | X | | | | X | X | | |
| Thyroid Gland | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| C-cell, Adenoma | | | | | X | | | | | | X | | | | | | | | | | | | | |
| C-cell, Carcinoma | | | | | | | | | | | | | | | | | X | | | | | | | |
| Follicular Cell, Carcinoma | | | | | | | | | | | | | | | | | | | | | | | | |

GENERAL BODY SYSTEM

NONE

GENITAL SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Coagulating Gland | | | | | | | | | | | | | | | | | | | | | | | | | + |
| Epididymis | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| Mesothelioma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | |
| Preputial Gland | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | | |
| Prostate | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | | |
| Adenoma | | | | | | | | | | | | | | | | | | | | | | | | | |
| Adenoma, Multiple | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lymphoma Malignant | | | X | | | | | | | | X | | | | | | | | | | | | | | |
| Seminal Vesicle | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | | |
| Lymphoma Malignant | | | X | | | | | | | | | | | | | | | | | | | | | | |
| Testes | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | | |

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue

M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (CIMSTAR 3800)
 CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
 Time Report Requested: 12:32:34
 First Dose M/F: 04/14/08 / 04/14/08
 Lab: BNW

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----------------------------|-------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| WISTAR HAN RATS MALE | DAY ON TEST | 07 | 07 | 05 | 05 | 07 | 07 | 07 | 07 | 07 | 07 | 07 | 02 | 06 | 04 | 07 | 07 | 06 | 07 | 07 | 07 | 06 | 07 | 07 | 07 | 07 | 06 | 07 | 07 | 07 | 07 | 07 | 07 |
| | ANIMAL ID | 004 | 004 | 005 | 004 | 001 | 001 | 000 | 001 | 000 | 000 | 000 | 000 | 000 | 000 | 000 | 000 | 000 | 000 | 000 | 000 | 000 | 000 | 000 | 000 | 000 | 000 | 000 | 000 | 000 | 000 | 000 | 000 |

Mesothelioma Malignant
 Interstitial Cell, Adenoma

X

HEMATOPOIETIC SYSTEM

Bone Marrow
 Lymphoma Malignant

+
 X

Lymph Node
 Renal, Lymphoma Malignant

+
 X

Lymph Node, Bronchial
 Lymphoma Malignant

+ + M + + + + + M M + + M M M M M M + + + M + + +
 X

Lymph Node, Mandibular
 Lymphoma Malignant

+ + + + M + + + M + + + M + + + + + + + + + + + +
 X

Lymph Node, Mediastinal
 Lymphoma Malignant

+
 X

Lymph Node, Mesenteric
 Hemangiosarcoma
 Lymphoma Malignant

+
 X

Spleen
 Hemangiosarcoma
 Lymphoma Malignant
 Sarcoma

+
 X
 X

Thymus
 Lymphoma Malignant

+ + + M + + + + I + + + + + I + + M + + + + + + +
 X

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue

M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (CIMSTAR 3800)
 CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
 Time Report Requested: 12:32:34
 First Dose M/F: 04/14/08 / 04/14/08
 Lab: BNW

| WISTAR HAN RATS MALE | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | | males
(cont...) |
|----------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--------------------|
| | 07
04 | 07
04 | 05
05 | 05
04 | 07
03 | 07
03 | 07
03 | 07
03 | 07
03 | 07
02 | 07
02 | 07
06 | 07
04 | 07
07 | 07
03 | 07
03 | 07
06 | 07
07 | 07
02 | 07
02 | 07
09 | 07
05 | 07
04 | 07
00 | 07
03 | |
| 100 mg/m3 | 00
60
1 | 00
66
0 | 00
66
0 | 00
66
0 | 00
66
0 | 00
66
0 | 00
66
0 | 00
66
0 | 00
66
0 | 00
66
0 | 00
66
0 | 00
66
0 | 00
66
0 | 00
66
0 | 00
66
0 | 00
66
0 | 00
66
0 | 00
66
0 | 00
66
0 | 00
66
0 | 00
66
0 | 00
66
0 | 00
66
0 | 00
66
0 | 00
66
0 | 00
66
0 |
| ANIMAL ID | 12
34
56
78
90
12
34
56
78
90 | 12
34
56
78
90
12
34
56
78
90 | 12
34
56
78
90
12
34
56
78
90 | 12
34
56
78
90
12
34
56
78
90 | 12
34
56
78
90
12
34
56
78
90 | 12
34
56
78
90
12
34
56
78
90 | 12
34
56
78
90
12
34
56
78
90 | 12
34
56
78
90
12
34
56
78
90 | 12
34
56
78
90
12
34
56
78
90 | 12
34
56
78
90
12
34
56
78
90 | 12
34
56
78
90
12
34
56
78
90 | 12
34
56
78
90
12
34
56
78
90 | 12
34
56
78
90
12
34
56
78
90 | 12
34
56
78
90
12
34
56
78
90 | 12
34
56
78
90
12
34
56
78
90 | 12
34
56
78
90
12
34
56
78
90 | 12
34
56
78
90
12
34
56
78
90 | 12
34
56
78
90
12
34
56
78
90 | 12
34
56
78
90
12
34
56
78
90 | 12
34
56
78
90
12
34
56
78
90 | 12
34
56
78
90
12
34
56
78
90 | 12
34
56
78
90
12
34
56
78
90 | 12
34
56
78
90
12
34
56
78
90 | 12
34
56
78
90
12
34
56
78
90 | 12
34
56
78
90
12
34
56
78
90 | |

Thymoma Benign
 Thymoma Malignant

INTEGUMENTARY SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Mammary Gland | + M | | | | | | | | | | | | | | | | | | | | | | | | |
| Skin | + | | | | | | | | | | | | | | | | | | | | | | | | |
| Subcutaneous Tissue, Fibroma | | | | | | | | | | | | | | | | | | | | | | | | | |
| Subcutaneous Tissue, Hemangiopericytoma | X | | | | | | | | | | | | | | | | | | | | | | | | |
| Subcutaneous Tissue, Hemangiosarcoma | | | | | | | | | | | | | | | | | | | | | | | | | |
| Subcutaneous Tissue, Lipoma | X | | | | | | | | | | | | | | | | | | | | | | | | |
| Subcutaneous Tissue, Liposarcoma | | | | | | | | | | | | | | | | | | | | | | | | | |

MUSCULOSKELETAL SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|--------------------------------------|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Bone | + | | | | | | | | | | | | | | | | | | | | | | | | |
| Osteosarcoma | X X | | | | | | | | | | | | | | | | | | | | | | | | |
| Sarcoma, Metastatic, Salivary Glands | | | | | | | | | | | | | | | | | | | | | | | | | |

NERVOUS SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|--------------------------------------|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Brain | + | | | | | | | | | | | | | | | | | | | | | | | | |
| Granular Cell Tumor Benign | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sarcoma, Metastatic, Salivary Glands | | | | | | | | | | | | | | | | | | | | | | | | | |
| Peripheral Nerve | + + + | | | | | | | | | | | | | | | | | | | | | | | | |
| Spinal Cord | + + + | | | | | | | | | | | | | | | | | | | | | | | | |

RESPIRATORY SYSTEM

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue

M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
Metal working fluids (CIMSTAR 3800)
CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
Time Report Requested: 12:32:34
First Dose M/F: 04/14/08 / 04/14/08
Lab: BNW

| WISTAR HAN RATS MALE

100 mg/m3 | DAY ON TEST | | | | | | | | | | | | | | | | | | | | ANIMAL ID | males
(cont...) | |
|--|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|-----------|--------------------|------------------|
| | 0
7
0
4 | 0
7
0
4 | 0
5
9
5 | 0
5
0
4 | 0
7
3
1 | 0
7
3
1 | 0
7
3
1 | 0
7
3
0 | 0
7
3
0 | 0
7
3
0 | 0
7
2
5 | 0
6
0
2 | 0
4
7
6 | 0
7
3
0 | 0
7
3
1 | 0
6
7
5 | 0
7
3
0 | 0
7
2
9 | 0
7
2
9 | 0
6
9
5 | | | 0
7
0
4 |
| Larynx
Sarcoma, Metastatic, Salivary Glands | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Lung
Lymphoma Malignant
Osteosarcoma, Metastatic, Bone
Sarcoma, Metastatic, Salivary Glands | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Nose
Sarcoma, Metastatic, Salivary Glands | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Trachea
Sarcoma, Metastatic, Salivary Glands | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| SPECIAL SENSES SYSTEM | | | | | | | | | | | | | | | | | | | | | | | |
| Eye | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Harderian Gland
Sarcoma, Metastatic, Salivary Glands | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| URINARY SYSTEM | | | | | | | | | | | | | | | | | | | | | | | |
| Kidney
Lipoma
Lymphoma Malignant | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Urinary Bladder
Lymphoma Malignant | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |

* .. Total animals with tissue examined microscopically; Total animals with tumor
+ .. Tissue examined microscopically
X .. Lesion present
I .. Insufficient tissue

M .. Missing tissue
A .. Autolysis precludes evaluation
BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (CIMSTAR 3800)
 CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
 Time Report Requested: 12:32:34
 First Dose M/F: 04/14/08 / 04/14/08
 Lab: BNW

| | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---------------------------------------|-------------|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|--------------------|
| WISTAR HAN RATS MALE

100 mg/m3 | DAY ON TEST | 0704 | 0704 | 0505 | 0505 | 0707 | 0707 | 0707 | 0707 | 0707 | 0707 | 0202 | 0606 | 0404 | 0707 | 0707 | 0606 | 0707 | 0707 | 0606 | 0707 | 0606 | 0707 | 0707 | 0707 | males
(cont...) |
| | ANIMAL ID | 0060 | 0060 | 0060 | 0060 | 0060 | 0060 | 0060 | 0060 | 0060 | 0060 | 0060 | 0060 | 0060 | 0060 | 0060 | 0060 | 0060 | 0060 | 0060 | 0060 | 0060 | 0060 | 0060 | 0060 | |
| | | 12345678901234567890123456789012345 | | | | | | | | | | | | | | | | | | | | | | | | |

SYSTEMIC LESIONS

| | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|--|
| Multiple Organ | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mesothelioma Malignant | | X | | | | | | | | | | | | | | | | | | | | | | | | |

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue

M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (CIMSTAR 3800)
 CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
 Time Report Requested: 12:32:34
 First Dose M/F: 04/14/08 / 04/14/08
 Lab: BNW

| WISTAR HAN RATS MALE
100 mg/m3 | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | * TOTALS | |
|--|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|-------------------|--|
| | 0729 | 0611 | 0713 | 0722 | 0729 | 0730 | 0732 | 0739 | 0739 | 0749 | 0755 | 0771 | 0773 | 0777 | 0783 | 0785 | 0789 | 0790 | 0792 | 0793 | 0797 | 0799 | 0800 | 0802 | | |
| ANIMAL ID | 00626 | 00662 | 00662 | 00662 | 00663 | 00663 | 00663 | 00663 | 00663 | 00664 | 00665 | 00667 | 00668 | 00669 | 00670 | 00671 | 00672 | 00673 | 00674 | 00675 | 00676 | 00677 | 00678 | 00679 | | |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| Stomach, Glandular
Lymphoma Malignant | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50
1 | |
| Tooth | | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| CARDIOVASCULAR SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Blood Vessel
Lymphoma Malignant | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50
1 | |
| Heart | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| ENDOCRINE SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Adrenal Cortex
Adenoma
Carcinoma
Lymphoma Malignant | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50
1
1
1 | |
| Adrenal Medulla
Lymphoma Malignant
Pheochromocytoma Benign | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50
1
5 | |
| Islets, Pancreatic
Adenoma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50
2 | |
| Parathyroid Gland
Adenoma | + | + | + | + | + | M | + | + | + | M | + | + | + | + | + | + | + | + | + | + | + | + | + | 47
1 | | |

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue

M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (CIMSTAR 3800)
 CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
 Time Report Requested: 12:32:34
 First Dose M/F: 04/14/08 / 04/14/08
 Lab: BNW

| WISTAR HAN RATS MALE
100 mg/m3 | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | * TOTALS |
|--------------------------------------|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----|----------|
| | 0729 | 0611 | 0730 | 0779 | 0779 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | | |
| ANIMAL ID | 00626 | 00662 | 00662 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | | |
| Pituitary Gland | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Sarcoma, Metastatic, Salivary Glands | | | | | | | | | | | | | | | | | | | X | | | | | 1 | |
| Pars Distalis, Adenoma | X | | | X | | X | | X | | | | | | X | | X | | | | X | | | X | 17 | |
| Thyroid Gland | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| C-cell, Adenoma | | | | | | X | | | | | | | | | | | | | | | X | | | 5 | |
| C-cell, Carcinoma | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| Follicular Cell, Carcinoma | | | X | X | | | | | | | | | | | | | | | | | | | | 2 | |
| GENERAL BODY SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | |
| NONE | | | | | | | | | | | | | | | | | | | | | | | | | |
| GENITAL SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | |
| Coagulating Gland | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| Epididymis | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Mesothelioma Malignant | | | | | | | | | | | | | X | | | | | | | | | | | 1 | |
| Preputial Gland | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Prostate | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Adenoma | | | | | | | | | | | | | | | | | | | | | | X | | 2 | |
| Adenoma, Multiple | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| Seminal Vesicle | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| Testes | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue

M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (CIMSTAR 3800)
 CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
 Time Report Requested: 12:32:34
 First Dose M/F: 04/14/08 / 04/14/08
 Lab: BNW

| WISTAR HAN RATS MALE | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | * TOTALS | |
|----------------------|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------|-------|
| | 0729 | 0611 | 0713 | 0722 | 0722 | 0723 | 0729 | 0729 | 0729 | 0729 | 0732 | 0737 | 0743 | 0747 | 0766 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | | 0777 |
| 100 mg/m3 | 00626 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 |
| | 00626 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 |
| | 00626 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 |
| | 00626 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 |
| | 00626 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 |
| | 00626 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 |
| | 00626 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 |

Mesothelioma Malignant X 1
 Interstitial Cell, Adenoma X 2

HEMATOPOIETIC SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|---------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|----|
| Bone Marrow | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| Lymph Node | | | | | | | | | | | | | | | | | | | | | | + | | | 5 |
| Renal, Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | + | 1 | |
| Lymph Node, Bronchial | + | + | + | + | M | + | + | + | + | + | + | + | + | + | M | M | + | + | + | M | + | M | + | + | 35 |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Lymph Node, Mandibular | + | M | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | M | + | 45 |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Lymph Node, Mediastinal | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | M | + | + | + | + | + | + | + | + | 49 |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Lymph Node, Mesenteric | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Hemangiosarcoma | | | | | | | | | | | | | | | | | | | | | | | | | 2 |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | X | | | 1 |
| Spleen | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Hemangiosarcoma | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Sarcoma | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Thymus | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 46 |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | 1 |

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue

M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (CIMSTAR 3800)
 CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
 Time Report Requested: 12:32:34
 First Dose M/F: 04/14/08 / 04/14/08
 Lab: BNW

| WISTAR HAN RATS MALE
100 mg/m3 | DAY ON TEST | | | | | | | | | | | | | | | | | | | | * TOTALS | |
|--------------------------------------|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------|-----|
| | 079 | 061 | 073 | 072 | 072 | 073 | 072 | 072 | 072 | 072 | 072 | 072 | 072 | 072 | 072 | 072 | 072 | 072 | 072 | 072 | | 072 |
| ANIMAL ID | 00626 | 00622 | 00622 | 00622 | 00633 | 00633 | 00633 | 00633 | 00633 | 00633 | 00633 | 00633 | 00633 | 00633 | 00633 | 00644 | 00644 | 00644 | 00644 | 00644 | 00644 | |
| Larynx | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Sarcoma, Metastatic, Salivary Glands | | | | | | | | | | | | | | | | | | | X | | | 1 |
| Lung | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | 1 |
| Osteosarcoma, Metastatic, Bone | | | | | | | | | | | | | | | | | | | | | | 1 |
| Sarcoma, Metastatic, Salivary Glands | | | | | | | | | | | | | | | | | | | X | | | 1 |
| Nose | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Sarcoma, Metastatic, Salivary Glands | | | | | | | | | | | | | | | | | | | X | | | 1 |
| Trachea | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Sarcoma, Metastatic, Salivary Glands | | | | | | | | | | | | | | | | | | | X | | | 1 |
| SPECIAL SENSES SYSTEM | | | | | | | | | | | | | | | | | | | | | | |
| Eye | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Harderian Gland | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Sarcoma, Metastatic, Salivary Glands | | | | | | | | | | | | | | | | | | | X | | | 1 |
| URINARY SYSTEM | | | | | | | | | | | | | | | | | | | | | | |
| Kidney | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Lipoma | | | | | | | | | | | | | | | | | | | | | X | 1 |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | 1 |
| Urinary Bladder | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 49 |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | I | 1 |

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue

M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (CIMSTAR 3800)
 CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
 Time Report Requested: 12:32:34
 First Dose M/F: 04/14/08 / 04/14/08
 Lab: BNW

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

SYSTEMIC LESIONS

| | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----------|-----------|
| Multiple Organ | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Mesothelioma Malignant | | | | | | | | | | | X | | | | | | | | | | | | | | 1 | |

*** END OF MALE DATA ***

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue

M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (CIMSTAR 3800)
 CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
 Time Report Requested: 12:32:34
 First Dose M/F: 04/14/08 / 04/14/08
 Lab: BNW

| | | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | females
(cont...) |
|-------------------------------|------------------|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----------------------|
| WISTAR HAN RATS FEMALE | Control | 0599 | 0732 | 0610 | 0732 | 0771 | 0670 | 0771 | 0771 | 0771 | 0771 | 0771 | 0576 | 0773 | 0776 | 0672 | 0772 | 0773 | 0773 | 0773 | 0678 | 0773 | 0673 | 0773 | 0773 | |
| | ANIMAL ID | 0010 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 |

ALIMENTARY SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Esophagus | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Large, Cecum | + | + | + | + | + | A | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Large, Colon | + | + | + | + | + | A | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Large, Rectum | + | + | + | + | I | A | + | + | I | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Small, Duodenum | + | + | + | + | + | A | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Small, Ileum | + | + | + | + | + | A | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Small, Jejunum | + | + | + | + | + | A | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Liver | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Mesentery | | + | | | | | + | | | | + | | | | | + | | | | + | | | | + | |
| Pancreas | + | + | + | + | + | A | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Salivary Glands | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Stomach, Forestomach
Leiomyosarcoma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | X |
| Stomach, Glandular
Leiomyosarcoma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | X |
| Tongue | | | | | | | | | | | + | | | | | | | | | | | | | | |

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue

M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (CIMSTAR 3800)
 CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
 Time Report Requested: 12:32:34
 First Dose M/F: 04/14/08 / 04/14/08
 Lab: BNW

| Wistar Han Rats Female
Control | DAY ON TEST | | | | | | | | | | | | | | | | | | | | ANIMAL ID | females
(cont...) | | | |
|-----------------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|-----------|----------------------|------------------|-----------------------|------------------|
| | 0
5
9
9 | 0
7
3
2 | 0
6
1
0 | 0
7
3
2 | 0
7
3
1 | 0
6
9
0 | 0
7
3
1 | 0
7
3
1 | 0
7
3
2 | 0
7
3
2 | 0
7
3
1 | 0
7
3
1 | 0
5
8
6 | 0
7
3
3 | 0
7
3
1 | 0
6
4
5 | 0
7
3
2 | 0
7
3
2 | 0
7
3
1 | 0
7
3
1 | | | 0
6
9
8 | 0
7
0
3 | 0
7
0
3 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0
0
1
0
1 | |

CARDIOVASCULAR SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | |
|--------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Blood Vessel | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Heart | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |

ENDOCRINE SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Adrenal Cortex
Adenoma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | X | + | + | + | + |
| Adrenal Medulla
Pheochromocytoma Benign
Pheochromocytoma Malignant | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | M | + | + | + | + | + | + | |
| Islets, Pancreatic
Adenoma | + | + | + | + | + | A | + | + | + | + | + | + | + | + | + | + | + | + | + | + | X | + | + | + | |
| Parathyroid Gland | + | + | + | + | + | + | M | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| Pituitary Gland
Pars Distalis, Adenoma
Pars Intermedia, Adenoma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| Thyroid Gland
C-cell, Adenoma
Follicular Cell, Adenoma
Follicular Cell, Carcinoma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |

GENERAL BODY SYSTEM

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue

M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (CIMSTAR 3800)
 CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
 Time Report Requested: 12:32:34
 First Dose M/F: 04/14/08 / 04/14/08
 Lab: BNW

| WISTAR HAN RATS FEMALE
Control | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | | females
(cont...) |
|-----------------------------------|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----------------------|
| | 0599 | 0732 | 0610 | 0733 | 0771 | 0670 | 0771 | 0771 | 0771 | 0771 | 0771 | 0576 | 0773 | 0776 | 0664 | 0773 | 0773 | 0773 | 0773 | 0678 | 0779 | 0770 | 0773 | 0773 | | |
| ANIMAL ID | 0010 | 0011 | 0012 | 0013 | 0014 | 0015 | 0016 | 0017 | 0018 | 0019 | 0020 | 0021 | 0022 | 0023 | 0024 | 0025 | 0026 | 0027 | 0028 | 0029 | 0030 | 0031 | 0032 | 0033 | 0034 | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |

NONE

GENITAL SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | |
|--------------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Clitoral Gland | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Ovary | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Granulosa Cell Tumor Benign | | | | | | | | | | | | | | | | | | | | | | | | |
| Uterus | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Polyp Stromal | | | | | | | | | | | | | | | | | | | | | | | | |
| Polyp Stromal, Multiple | | | | | | | | | | | | | | | | | | | | | | | | |
| Sarcoma Stromal | | | | | | | | | | | | | | | | | | | | | | | | |
| Endometrium, Adenocarcinoma | | | | | | | | | | | | | | | | | | | | | | | | |
| Endometrium, Squamous Cell Papilloma | | | | | | | | | | | | | | | | | | | | | | | | |

HEMATOPOIETIC SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | |
|-------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bone Marrow | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Lymph Node | | | | | | | | | | | | | | | | | | | | | | | | |
| Lymph Node, Bronchial | + | M | M | + | + | + | + | + | + | + | + | M | + | + | M | + | + | + | + | + | M | + | + | + |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | |
| Lymph Node, Mandibular | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | M |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | |
| Lymph Node, Mediastinal | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | M | + | + | + | + | + | + | + | + |
| Lymph Node, Mesenteric | + | + | + | + | + | A | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue

M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (CIMSTAR 3800)
 CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
 Time Report Requested: 12:32:34
 First Dose M/F: 04/14/08 / 04/14/08
 Lab: BNW

| WISTAR HAN RATS FEMALE
Control | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | | females
(cont...) | |
|-----------------------------------|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----------------------|--|
| | 0599 | 0732 | 0610 | 0733 | 0771 | 0670 | 0771 | 0771 | 0771 | 0771 | 0771 | 0576 | 0773 | 0773 | 0675 | 0773 | 0773 | 0773 | 0773 | 0678 | 0779 | 0770 | 0773 | 0673 | 0773 | | |
| ANIMAL ID | 0010 | 0011 | 0012 | 0013 | 0014 | 0015 | 0016 | 0017 | 0018 | 0019 | 0020 | 0021 | 0022 | 0023 | 0024 | 0025 | 0026 | 0027 | 0028 | 0029 | 0030 | 0031 | 0032 | 0033 | 0034 | 0035 | |
| Hemangiosarcoma | | | | | | | | | | | | | | | | | | | | | | | | | | X | |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Spleen | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| Thymus | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| Thymoma Benign | | | X | | | | | X | | X | | | | | | | | | | | | | | | | | |
| INTEGUMENTARY SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mammary Gland | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| Adenoma | | | | | | | | | | | | | | | | X | | | | X | | | | | | | |
| Carcinoma | | | | | | | | | | | | | | | | | | | X | | | | X | | | | |
| Carcinoma, Multiple | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fibroadenoma | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fibroadenoma, Multiple | | | | | X | | | | | | X | | | | | | | | | | | | | X | | | |
| Skin | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| Subcutaneous Tissue, Liposarcoma | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MUSCULOSKELETAL SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Bone | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| NERVOUS SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Brain | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| Granular Cell Tumor Benign | | | | | | | | | | | | | | | | | | | | | | | | | | X | |
| Peripheral Nerve | + | | | | | | | | | | | | | | | | | | | | | | | | | | |

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue

M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (CIMSTAR 3800)
 CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
 Time Report Requested: 12:32:34
 First Dose M/F: 04/14/08 / 04/14/08
 Lab: BNW

| WISTAR HAN RATS FEMALE
Control | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | | females
(cont...) |
|--------------------------------------|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----------------------|
| | 0599 | 0732 | 0610 | 0733 | 0771 | 0670 | 0771 | 0771 | 0772 | 0772 | 0771 | 0771 | 0576 | 0773 | 0776 | 0675 | 0773 | 0773 | 0773 | 0773 | 0678 | 0773 | 0770 | 0773 | | |
| ANIMAL ID | 0010 | 0011 | 0012 | 0013 | 0014 | 0015 | 0016 | 0017 | 0018 | 0019 | 0020 | 0021 | 0022 | 0023 | 0024 | 0025 | 0026 | 0027 | 0028 | 0029 | 0030 | 0031 | 0032 | 0033 | 0034 | |
| Spinal Cord | + | | | | | | | | | | | | | | | | | | | | | | | | | |
| RESPIRATORY SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Larynx | + | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lung | + | | | | | | | | | | | | | | | | | | | | | | | | | |
| Nose | + | | | | | | | | | | | | | | | | | | | | | | | | | |
| Trachea | + | + | + | + | + | A | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| SPECIAL SENSES SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Eye | + | + | + | + | + | A | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| Harderian Gland | + | + | + | + | + | A | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| URINARY SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Kidney
Renal Tubule, Adenoma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| Urinary Bladder | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| SYSTEMIC LESIONS | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Multiple Organ
Lymphoma Malignant | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | X | |

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue

M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (CIMSTAR 3800)
 CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
 Time Report Requested: 12:32:34
 First Dose M/F: 04/14/08 / 04/14/08
 Lab: BNW

| WISTAR HAN RATS FEMALE
10 mg/m3 | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | | ANIMAL ID | females
(cont...) |
|--|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|---|-----------|----------------------|
| | 0733 | 0730 | 0633 | 0668 | 0668 | 0488 | 0773 | 0773 | 0563 | 0773 | 0773 | 0773 | 0773 | 0773 | 0773 | 0773 | 0773 | 0773 | 0773 | 0668 | 0668 | 0773 | 0773 | 0773 | | | |
| Blood Vessel | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | | | |
| Heart | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | | | |
| ENDOCRINE SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Adrenal Cortex
Adenoma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | X | | |
| Adrenal Medulla
Pheochromocytoma Malignant | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | | | |
| Islets, Pancreatic | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | | | |
| Parathyroid Gland | + | + | + | + | + | M | + | + | + | M | M | + | + | + | + | M | + | + | + | + | + | + | + | M | | | |
| Pituitary Gland
Pars Distalis, Adenoma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | | | |
| Thyroid Gland
C-cell, Adenoma
Follicular Cell, Carcinoma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | | | |
| GENERAL BODY SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NONE | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GENITAL SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Clitoral Gland | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | I | + | M | + | + | M | + |

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue

M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (CIMSTAR 3800)
 CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
 Time Report Requested: 12:32:34
 First Dose M/F: 04/14/08 / 04/14/08
 Lab: BNW

| WISTAR HAN RATS FEMALE
10 mg/m3 | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | | ANIMAL ID | females
(cont...) | | | | | |
|--|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|---|------------------|----------------------|------------------|---|---|--|--|
| | 0
7
3
3 | 0
7
3
3 | 0
6
3
3 | 0
6
8
3 | 0
6
8
3 | 0
4
8
1 | 0
7
3
2 | 0
7
3
2 | 0
5
6
8 | 0
7
3
1 | 0
7
3
2 | 0
7
3
1 | 0
7
3
2 | 0
7
3
3 | 0
7
3
2 | 0
7
3
1 | 0
7
3
2 | 0
7
3
1 | 0
7
3
2 | 0
6
8
7 | 0
6
1
9 | 0
7
3
2 | 0
7
3
3 | 0
7
3
3 | | | | | | | | |
| Ovary | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 0
0
3
0 | + | + | + | + | | |
| Granulosa Cell Tumor Malignant | | | | | | | | | | | | | | | | | | | | | | | | | | 0
0
3
0 | | | | | | |
| Mesothelioma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | | 0
0
3
0 | | | | | | |
| Uterus | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 0
0
3
0 | + | + | + | + | | |
| Polyp Stromal | | | | | | | | | | | | | | | | | | | | | | | | | | 0
0
3
0 | | | | | | |
| Endometrium, Adenocarcinoma | | | | | | | | | | | | | | | | | | | | | | | | | | 0
0
3
0 | | | | | | |
| Vagina | | | | | | | | | | | | | | | | | | | | | | | | | | 0
0
3
0 | | | | | | |
| Squamous Cell Carcinoma | | | | | | | | | | | | | | | | | | | | | | | | | | 0
0
3
0 | | | | | | |
| HEMATOPOIETIC SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Bone Marrow | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 0
0
3
0 | + | + | + | + | | |
| Lymph Node | | | | + | | | | | | | | | | | | | | | | | | | | | | 0
0
3
0 | | | | | | |
| Lymph Node, Bronchial | M | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | M | M | + | M | M | + | + | + | 0
0
3
0 | | | | |
| Lymph Node, Mandibular | + | + | + | M | M | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 0
0
3
0 | | | | | |
| Lymph Node, Mediastinal | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | M | + | + | + | + | + | + | + | 0
0
3
0 | | | | | |
| Lymph Node, Mesenteric Hemangiosarcoma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 0
0
3
0 | | | | | |
| Spleen | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 0
0
3
0 | | | | | |
| Thymus | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 0
0
3
0 | | | | | |
| Thymoma Benign | X | | | | | | | | | | | | | | | | | | | | | | | | | 0
0
3
0 | | | | | | |

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue

M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (CIMSTAR 3800)
 CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
 Time Report Requested: 12:32:34
 First Dose M/F: 04/14/08 / 04/14/08
 Lab: BNW

| | | DAY ON TEST | | | | | | | | | | | | | | | | | | | | females
(cont...) | | | | |
|-------------------------------|-----------------|-------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----------------------|---|---|---|---|
| WISTAR HAN RATS FEMALE | 10 mg/m3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | |
| | | 7 | 7 | 6 | 6 | 6 | 4 | 7 | 7 | 5 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | | 6 | 6 | 7 | 7 |
| | | 3 | 0 | 3 | 8 | 8 | 8 | 3 | 3 | 6 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 8 | 1 | 3 | 3 |
| | | 3 | 3 | 3 | 3 | 3 | 1 | 2 | 2 | 8 | 1 | 2 | 1 | 2 | 3 | 2 | 2 | 1 | 2 | 2 | 1 | 7 | 9 | 2 | 3 | 3 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 |
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 |

INTEGUMENTARY SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|--------------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mammary Gland Adenoma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Mammary Gland Carcinoma | | | | | | | X | | | | | | | | | | | | | | | | | | |
| Mammary Gland Fibroadenoma | | X | | X | | | | | | | | | | | | | | | | | | | | X | |
| Mammary Gland Fibroadenoma, Multiple | | | X | | | | | | | | | X | | | | | | | | | X | | | | |
| Skin Subcutaneous Tissue, Sarcoma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| | | | | | | | X | | | | | | | | | | | | | | | | | | |

MUSCULOSKELETAL SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bone | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Skeletal Muscle Mesothelioma Malignant | | | | | | | | | | | | | | | | | | | | | | | + | X | |

NERVOUS SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Brain Granular Cell Tumor Benign | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Peripheral Nerve | | | + | + | + | | | | | | | | | | | | | | | | | | | + | |
| Spinal Cord | | | + | + | + | | | | | | | | | | | | | | | | | | | + | |

RESPIRATORY SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Larynx | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue

M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL

Metal working fluids (CIMSTAR 3800)

CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014

Time Report Requested: 12:32:34

First Dose M/F: 04/14/08 / 04/14/08

Lab: BNW

| WISTAR HAN RATS FEMALE

10 mg/m3 | DAY ON TEST | | | | | | | | | | | | | | | | | | | | * TOTALS | | | | | |
|--|-------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----------|---|---|---|---|---|
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | | | | |
| | 7 | 7 | 6 | 7 | 6 | 7 | 7 | 7 | 6 | 5 | 7 | 7 | 7 | 6 | 5 | 6 | 6 | 7 | 5 | 7 | | 7 | 7 | 7 | 7 | 7 |
| | 3 | 3 | 2 | 3 | 0 | 3 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 5 | 3 | 8 | 8 | 3 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| | 2 | 2 | 7 | 2 | 3 | 1 | 9 | 1 | 3 | 0 | 2 | 1 | 1 | 3 | 0 | 1 | 4 | 2 | 4 | 2 | 1 | 1 | 2 | 2 | 1 | 1 |
| ANIMAL ID | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 |
| | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | |

ALIMENTARY SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|
| Esophagus | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Intestine Large, Cecum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Intestine Large, Colon | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 49 |
| Intestine Large, Rectum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Intestine Small, Duodenum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Intestine Small, Ileum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Intestine Small, Jejunum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Liver | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Hepatocellular Adenoma | | | | | | | | | | | | | | | | | | | | | | | | | | 2 |
| Mesentery | | | | + | | | | | | + | | + | | | | | | | | | | | | | | 8 |
| Pancreas | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Salivary Glands | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Stomach, Forestomach | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Stomach, Glandular | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |

CARDIOVASCULAR SYSTEM

* .. Total animals with tissue examined microscopically; Total animals with tumor
+ .. Tissue examined microscopically
X .. Lesion present
I .. Insufficient tissue

M .. Missing tissue
A .. Autolysis precludes evaluation
BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (CIMSTAR 3800)
 CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
 Time Report Requested: 12:32:34
 First Dose M/F: 04/14/08 / 04/14/08
 Lab: BNW

| WISTAR HAN RATS FEMALE
10 mg/m3 | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | * TOTALS |
|--|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------------|----|----------|
| | 0732 | 0732 | 0672 | 0773 | 0660 | 0773 | 0773 | 0773 | 0663 | 0553 | 0773 | 0773 | 0773 | 0665 | 0556 | 0666 | 0777 | 0557 | 0777 | 0777 | 0777 | 0777 | 0777 | | |
| ANIMAL ID | 00326 | 00332 | 00337 | 00332 | 00330 | 00331 | 00332 | 00331 | 00333 | 00330 | 00333 | 00333 | 00333 | 00333 | 00333 | 00333 | 00333 | 00333 | 00333 | 00333 | 00333 | 00333 | 00333 | | |
| Blood Vessel | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Heart | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| ENDOCRINE SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | |
| Adrenal Cortex
Adenoma | + | + | + | + | + | + | + | + | X | + | + | + | + | + | + | + | + | + | + | + | + | + | 50
2 | | |
| Adrenal Medulla
Pheochromocytoma Malignant | + | + | + | + | + | + | + | + | + | + | X | + | + | + | + | + | + | + | + | + | + | + | 50
1 | | |
| Islets, Pancreatic | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| Parathyroid Gland | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | M | + | + | + | 44 | | |
| Pituitary Gland
Pars Distalis, Adenoma | + | + | X | X | X | X | X | X | X | + | + | X | X | X | X | X | + | + | X | X | X | X | 50
33 | | |
| Thyroid Gland
C-cell, Adenoma
Follicular Cell, Carcinoma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | X | 50
2
1 | | |
| GENERAL BODY SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | |
| NONE | | | | | | | | | | | | | | | | | | | | | | | | | |
| GENITAL SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | |
| Clitoral Gland | + | + | + | M | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 46 | | |

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue

M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL

Metal working fluids (CIMSTAR 3800)

CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014

Time Report Requested: 12:32:34

First Dose M/F: 04/14/08 / 04/14/08

Lab: BNW

| WISTAR HAN RATS FEMALE

10 mg/m3 | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | * TOTALS | | |
|--|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----------|---------|----|
| | 0732 | 0732 | 0672 | 0773 | 0673 | 0773 | 0773 | 0673 | 0573 | 0773 | 0773 | 0673 | 0573 | 0673 | 0673 | 0773 | 0573 | 0773 | 0773 | 0773 | 0773 | 0773 | 0773 | | | |
| | ANIMAL ID | 0032 | 0032 | 0032 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | | 0033 | |
| Ovary | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| Granulosa Cell Tumor Malignant | | | | | | | | | | | | | | | | | | | | | | | X | 2 | | |
| Mesothelioma Malignant | | | | | | | | | | | | | | | | | | | | | | | | 1 | | |
| Uterus | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| Polyp Stromal | | | | X | | X | | | X | | X | | X | | | | | | | | | | | 6 | | |
| Endometrium, Adenocarcinoma | | | | | | | | | | | | | | | | | | | | | | | | 1 | | |
| Vagina | | | | | | | | | | | | | | | | | | | | | | | | 1 | | |
| Squamous Cell Carcinoma | | | | | | | | | | | | | | | | | | | | | | | | 1 | | |
| HEMATOPOIETIC SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Bone Marrow | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| Lymph Node | | | | | | | | | | | | | | | | | | | | | | | | 2 | | |
| Lymph Node, Bronchial | + | M | + | M | + | + | M | + | M | + | + | M | + | + | + | + | + | M | + | M | + | M | M | + | M | 35 |
| Lymph Node, Mandibular | M | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 47 | |
| Lymph Node, Mediastinal | + | + | + | + | + | + | + | + | + | + | M | M | + | + | + | + | + | + | + | + | + | M | + | + | 46 | |
| Lymph Node, Mesenteric Hemangiosarcoma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | X | 50
1 | |
| Spleen | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| Thymus | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 48 | | |
| Thymoma Benign | | | | | | | X | | | | | | M | M | + | + | + | + | + | + | + | + | X | 4 | | |

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue

M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (CIMSTAR 3800)
 CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
 Time Report Requested: 12:32:34
 First Dose M/F: 04/14/08 / 04/14/08
 Lab: BNW

| WISTAR HAN RATS FEMALE | DAY ON TEST | | | | | | | | | | | | | | | | | | | | * TOTALS | | |
|------------------------|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----------|------|------|
| | 0732 | 0732 | 0627 | 0732 | 0630 | 0731 | 0779 | 0771 | 0663 | 0575 | 0773 | 0777 | 0666 | 0568 | 0668 | 0774 | 0574 | 0773 | 0773 | 0773 | | 0773 | 0773 |
| 10 mg/m3 | 0032 | 0032 | 0032 | 0032 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 50 |
| | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 1 |
| | 0032 | 0032 | 0032 | 0032 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 5 |
| | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 8 |
| | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 2 |
| | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 50 |
| | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 2 |

INTEGUMENTARY SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | |
|--------------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|
| Mammary Gland Adenoma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Mammary Gland Carcinoma | | | | | | | | | | | | X | | | | | | | | | X | | 1 |
| Mammary Gland Fibroadenoma | X | | X | X | | | | | X | | | | | | X | | | | | | | | 5 |
| Mammary Gland Fibroadenoma, Multiple | | | | | | | | | | | | | | | | | X | | | | | | 8 |
| Skin Subcutaneous Tissue, Sarcoma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 2 |

MUSCULOSKELETAL SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | |
|--|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|
| Bone | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Skeletal Muscle Mesothelioma Malignant | | | | | | | | | | | | | | | | | | | | | | | 1 |
| | | | | | | | | | | | | | | | | | | | | | | | 1 |

NERVOUS SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | |
|----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|
| Brain Granular Cell Tumor Benign | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| | | | | | | | X | | | | | | | | | | | | | | | | 1 |
| Peripheral Nerve | | | + | | | | | + | | | | | | + | + | | + | | | | | | 9 |
| Spinal Cord | | | + | | | | | + | | | | | | + | + | | + | | | | | | 9 |

RESPIRATORY SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|
| Larynx | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue

M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (CIMSTAR 3800)
CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
Time Report Requested: 12:32:34
First Dose M/F: 04/14/08 / 04/14/08
Lab: BNW

| WISTAR HAN RATS FEMALE

10 mg/m3 | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|---|-----------------------|--|
| | 0732 | 0732 | 0672 | 0732 | 0673 | 0773 | 0773 | 0773 | 0653 | 0573 | 0773 | 0773 | 0663 | 0553 | 0663 | 0773 | 0553 | 0773 | 0773 | 0773 | | 0773 | 0773 | 0773 | | | |
| ANIMAL ID | 0032 | 0033 | 0032 | 0032 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | | | | |
| | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | | |
| Lung
Squamous Cell Carcinoma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50
1 | |
| Nose | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Trachea | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| SPECIAL SENSES SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Eye | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Harderian Gland | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| URINARY SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Kidney
Transitional Epithelium, Papilloma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50
1 | |
| Urinary Bladder | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| SYSTEMIC LESIONS | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Multiple Organ
Mesothelioma Malignant | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50
1 | |

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue

M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (CIMSTAR 3800)
 CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
 Time Report Requested: 12:32:34
 First Dose M/F: 04/14/08 / 04/14/08
 Lab: BNW

| | | DAY ON TEST | | | | | | | | | | | | | | | | | | | | females
(cont...) | |
|-------------------------------|-----------------|-------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----------------------|---|
| WISTAR HAN RATS FEMALE | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 |
| | 30 mg/m3 | 7 | 6 | 7 | 6 | 7 | 7 | 6 | 7 | 7 | 7 | 7 | 6 | 7 | 7 | 5 | 7 | 7 | 6 | 7 | 7 | | 7 |
| | | 3 | 7 | 0 | 9 | 3 | 3 | 6 | 3 | 3 | 3 | 3 | 8 | 3 | 3 | 9 | 3 | 3 | 4 | 3 | 3 | 3 | |
| | | 2 | 3 | 8 | 0 | 2 | 1 | 0 | 2 | 1 | 3 | 2 | 2 | 1 | 3 | 1 | 1 | 8 | 3 | 1 | 2 | 2 | |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | |
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | |

ALIMENTARY SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | |
|---------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Esophagus | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Large, Cecum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Large, Colon | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Large, Rectum | + | + | + | + | + | + | + | + | + | I | + | + | + | + | + | + | + | + | + | + | I | + |
| Intestine Small, Duodenum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Small, Ileum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Small, Jejunum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Liver | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Hepatocellular Adenoma | | | | | | | | | | | | | | | | | | | | | | |
| Mesentery | | | | | + | | | | | | | + | | | + | | | + | | | | + |
| Pancreas | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Salivary Glands | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Stomach, Forestomach | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Stomach, Glandular | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |

CARDIOVASCULAR SYSTEM

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue

M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (CIMSTAR 3800)
 CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
 Time Report Requested: 12:32:34
 First Dose M/F: 04/14/08 / 04/14/08
 Lab: BNW

| | | DAY ON TEST | | | | | | | | | | | | | | | | | | | | females
(cont...) | |
|------------------------|--|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----------------------|------|
| WISTAR HAN RATS FEMALE | | 0732 | 0670 | 0708 | 0693 | 0732 | 0661 | 0702 | 0776 | 0777 | 0777 | 0777 | 0777 | 0777 | 0676 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | | 0777 |
| 30 mg/m3 | | 0050 | 0055 | 0055 | 0055 | 0055 | 0055 | 0055 | 0055 | 0055 | 0055 | 0055 | 0055 | 0055 | 0055 | 0055 | 0055 | 0055 | 0055 | 0055 | 0055 | 0055 | 0055 |
| ANIMAL ID | | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 |

| | | | | | | | | | | | | | | | | | | | | | | | |
|---------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Blood Vessel | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Heart | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Chemodectoma Benign | | | | | | | | | | | | | | | | | X | | | | | | |
| Hemangioma | | | | | | | | | | | | | | | | | | | | | | | X |

ENDOCRINE SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | |
|--------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Adrenal Cortex | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Adenoma | | | | | | | | | | | | | X | | | | | | | | | | |
| Adrenal Medulla | + | + | + | + | + | + | + | + | + | + | M | + | + | + | + | + | + | + | + | + | + | + | + |
| Pheochromocytoma Benign | | | | | | | | | | | | | X | | | | | | | | | | |
| Islets, Pancreatic | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Parathyroid Gland | M | + | + | + | + | + | + | + | + | + | + | + | + | + | + | M | + | + | M | + | + | M | + |
| Pituitary Gland | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Pars Distalis, Adenoma | X | | X | X | | X | X | X | | X | X | X | X | X | X | X | X | | X | X | X | | X |
| Thyroid Gland | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| C-cell, Adenoma | | | | | | | | | | X | | | | | | | | | | | | X | |
| Follicular Cell, Adenoma | | | | | | | | | | | | | | | | | | | | X | | | X |

GENERAL BODY SYSTEM

NONE

GENITAL SYSTEM

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue

M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (CIMSTAR 3800)
 CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
 Time Report Requested: 12:32:34
 First Dose M/F: 04/14/08 / 04/14/08
 Lab: BNW

| | | DAY ON TEST | | | | | | | | | | | | | | | | | | | | females
(cont...) | |
|-------------------------------|-----------|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----------------------|------|
| WISTAR HAN RATS FEMALE | | 0732 | 0670 | 0708 | 0693 | 0732 | 0661 | 0770 | 0773 | 0773 | 0773 | 0773 | 0668 | 0773 | 0773 | 0579 | 0773 | 0674 | 0773 | 0773 | 0771 | | 0773 |
| 30 mg/m3 | ANIMAL ID | 0050 | 0055 | 0055 | 0055 | 0055 | 0055 | 0055 | 0055 | 0055 | 0055 | 0055 | 0055 | 0055 | 0055 | 0055 | 0055 | 0055 | 0055 | 0055 | 0055 | | 0055 |
| Clitoral Gland | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| Ovary | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| Granulosa Cell Tumor Benign | | | | | | | | | | | | | | | | | | | | | | | |
| Uterus | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| Fibroma | | | | | | | | | | | | | | | | | | | | | | | |
| Leiomyoma | | | | | | | | | | | | | | X | | | | | | | | | |
| Polyp Stromal | | | | | | | | | | | | | | | | | | | | | | | |
| Endometrium, Adenocarcinoma | | | | | | | | | | | | | | | | | | | | | | | |

HEMATOPOIETIC SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | |
|--|--|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bone Marrow | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| Lymph Node | | | | | | | | | | | | | | | | | | | | | | | |
| Lymph Node, Bronchial | | + | + | + | M | + | M | M | M | M | + | + | + | + | + | + | + | + | + | M | + | M | + |
| Lymph Node, Mandibular | | + | + | + | + | + | + | M | + | M | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Lymph Node, Mediastinal | | + | + | + | + | M | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Lymph Node, Mesenteric Hemangiosarcoma | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Spleen | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Thymus | | + | + | + | + | I | M | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Thymoma Benign | | | | X | | | | X | | | | | | | | | | | | X | | X | |

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue

M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (CIMSTAR 3800)
 CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
 Time Report Requested: 12:32:34
 First Dose M/F: 04/14/08 / 04/14/08
 Lab: BNW

| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
|-------------------------------|-------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WISTAR HAN RATS FEMALE | DAY ON TEST | 7 | 6 | 7 | 6 | 7 | 7 | 6 | 7 | 7 | 7 | 7 | 7 | 6 | 7 | 7 | 5 | 7 | 7 | 6 | 7 | 7 | 7 | 7 | 7 | |
| | | 3 | 7 | 0 | 9 | 3 | 3 | 6 | 3 | 3 | 3 | 3 | 3 | 8 | 3 | 3 | 9 | 3 | 3 | 4 | 3 | 3 | 3 | 1 | 3 | |
| 30 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 | 0 | 0 | |
| | | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | |
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 |

females
(cont...)

INTEGUMENTARY SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mammary Gland | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| Adenoma | | | | | | | | | | | | | | | | | | | | | | | | | |
| Carcinoma | | X | | | | | | | | | | | | | | | X | | | | | | | | |
| Carcinoma, Multiple | | | | | | | | | | | X | | | X | | | | | | | | | | | |
| Fibroadenoma | | | | | | | | | | X | X | | X | | | | | | | | X | | | | |
| Fibroadenoma, Multiple | | | | | | | | | | | | | | | | | | | | | X | | | | |
| Skin | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |

MUSCULOSKELETAL SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bone | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
|------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

NERVOUS SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Brain | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Peripheral Nerve | | | + | | | | | | | | | | | | | | + | | | + | | | | | |
| Spinal Cord | | | + | | | | | | | | | | | | | | + | | | + | | | | | |

RESPIRATORY SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Larynx | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Lung | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Nose | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue

M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (CIMSTAR 3800)
 CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
 Time Report Requested: 12:32:34
 First Dose M/F: 04/14/08 / 04/14/08
 Lab: BNW

| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | females
(cont...) | |
|------------------------------|-------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----------------------|--|
| WISTAR HAN RATS FEMALE | DAY ON TEST | 7 | 6 | 7 | 6 | 7 | 7 | 6 | 7 | 7 | 7 | 7 | 7 | 6 | 7 | 7 | 5 | 7 | 7 | 6 | 7 | 7 | 7 | 7 | 7 | | |
| | 30 mg/m3 | 3 | 7 | 0 | 9 | 3 | 3 | 6 | 3 | 3 | 3 | 3 | 3 | 8 | 3 | 3 | 9 | 3 | 3 | 4 | 3 | 3 | 3 | 1 | 3 | | |
| ANIMAL ID | | 2 | 3 | 8 | 0 | 2 | 1 | 0 | 2 | 1 | 3 | 2 | 2 | 1 | 3 | 1 | 1 | 8 | 3 | 1 | 2 | 2 | 2 | 1 | 2 | | |
| | | 0 | 0 | 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 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | | |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | | |
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | |
| Trachea | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | | |
| SPECIAL SENSES SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Eye | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| Harderian Gland | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| URINARY SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Kidney | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| Urinary Bladder | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| SYSTEMIC LESIONS | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Multiple Organ | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue

M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL

Metal working fluids (CIMSTAR 3800)

CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014

Time Report Requested: 12:32:34

First Dose M/F: 04/14/08 / 04/14/08

Lab: BNW

| WISTAR HAN RATS FEMALE | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | | * TOTALS |
|------------------------|-------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----------|
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 30 mg/m3 | 7 | 7 | 7 | 7 | 7 | 7 | 6 | 5 | 7 | 7 | 7 | 7 | 6 | 7 | 7 | 7 | 7 | 6 | 7 | 7 | 7 | 7 | 7 | 7 | 6 | 50 |
| | 3 | 3 | 3 | 3 | 0 | 3 | 8 | 6 | 3 | 3 | 3 | 3 | 0 | 3 | 3 | 3 | 3 | 8 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 50 |
| | 2 | 2 | 2 | 2 | 1 | 3 | 1 | 3 | 2 | 3 | 3 | 1 | 3 | 2 | 3 | 2 | 1 | 4 | 2 | 2 | 1 | 3 | 3 | 2 | 2 | 50 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 |
| | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 50 |
| | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 50 |
| | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 50 |

ALIMENTARY SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|---------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|
| Esophagus | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Intestine Large, Cecum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Intestine Large, Colon | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Intestine Large, Rectum | + | + | I | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 47 |
| Intestine Small, Duodenum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Intestine Small, Ileum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Intestine Small, Jejunum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Liver | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Hepatocellular Adenoma | | | | X | | | | | | | | | | | | | | | | | | | | | 1 |
| Mesentery | | | | | + | | | | | | | | | + | | | | | | | | | | | 8 |
| Pancreas | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Salivary Glands | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Stomach, Forestomach | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Stomach, Glandular | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |

CARDIOVASCULAR SYSTEM

* .. Total animals with tissue examined microscopically; Total animals with tumor
+ .. Tissue examined microscopically
X .. Lesion present
I .. Insufficient tissue

M .. Missing tissue
A .. Autolysis precludes evaluation
BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
Metal working fluids (CIMSTAR 3800)
CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
Time Report Requested: 12:32:34
First Dose M/F: 04/14/08 / 04/14/08
Lab: BNW

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

| | | | | | | | | | | | | | | | | | | | | | | | | |
|---------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|
| Blood Vessel | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Heart | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Chemodectoma Benign | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Hemangioma | | | | | | | | | | | | | | | | | | | | | | | | 1 |

ENDOCRINE SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | |
|--------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|----|
| Adrenal Cortex | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Adenoma | | | | | | | | | | | | | | | | | | | X | | | | | 2 |
| Adrenal Medulla | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 49 | |
| Pheochromocytoma Benign | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Islets, Pancreatic | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Parathyroid Gland | + | + | + | + | + | + | + | + | M | + | M | + | + | M | + | + | + | + | + | M | + | M | + | 40 |
| Pituitary Gland | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Pars Distalis, Adenoma | | X | X | X | X | X | X | X | X | X | | | | | X | X | | | X | X | X | | 36 | |
| Thyroid Gland | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| C-cell, Adenoma | | X | | | | | | | | | | | | | | | | | | | | X | 4 | |
| Follicular Cell, Adenoma | X | | | | | | | | | | | | | | | | | | | | | | 3 | |

GENERAL BODY SYSTEM

NONE

GENITAL SYSTEM

* .. Total animals with tissue examined microscopically; Total animals with tumor
+ .. Tissue examined microscopically
X .. Lesion present
I .. Insufficient tissue

M .. Missing tissue
A .. Autolysis precludes evaluation
BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (CIMSTAR 3800)
 CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
 Time Report Requested: 12:32:34
 First Dose M/F: 04/14/08 / 04/14/08
 Lab: BNW

| WISTAR HAN RATS FEMALE
30 mg/m3 | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | * TOTALS | | |
|------------------------------------|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------|------|--|
| | 0732 | 0732 | 0733 | 0731 | 0735 | 0733 | 0731 | 0733 | 0732 | 0733 | 0731 | 0733 | 0732 | 0733 | 0731 | 0733 | 0732 | 0734 | 0732 | 0731 | 0733 | 0732 | 0733 | 0734 | | 0730 | |
| ANIMAL ID | 00526 | 00527 | 00528 | 00529 | 00530 | 00531 | 00532 | 00533 | 00534 | 00535 | 00536 | 00537 | 00538 | 00539 | 00540 | 00541 | 00542 | 00543 | 00544 | 00545 | 00546 | 00547 | 00548 | 00549 | 00550 | | |
| Clitoral Gland | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| Ovary | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| Granulosa Cell Tumor Benign | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | |
| Uterus | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| Fibroma | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | |
| Leiomyoma | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | |
| Polyp Stromal | | | | | | | | | | | | | | | | | | | | | | | | | 3 | | |
| Endometrium, Adenocarcinoma | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | |
| HEMATOPOIETIC SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Bone Marrow | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| Lymph Node | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | |
| Lymph Node, Bronchial | + | + | M | + | + | + | M | + | + | M | + | M | + | M | M | + | + | + | M | + | M | + | M | + | 32 | | |
| Lymph Node, Mandibular | + | + | + | M | + | + | + | + | + | + | + | + | M | I | M | + | + | + | + | + | M | + | + | + | 43 | | |
| Lymph Node, Mediastinal | + | M | + | + | + | + | + | + | + | + | + | + | M | + | + | + | + | M | + | + | + | M | + | + | 45 | | |
| Lymph Node, Mesenteric | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| Hemangiosarcoma | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | |
| Spleen | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| Thymus | + | + | + | + | + | + | + | + | + | M | + | + | + | + | M | + | + | + | + | + | + | + | + | + | 45 | | |
| Thymoma Benign | | | | | | | | | | | | | | | | | | | | | | | | | 7 | | |

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue

M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (CIMSTAR 3800)
 CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
 Time Report Requested: 12:32:34
 First Dose M/F: 04/14/08 / 04/14/08
 Lab: BNW

| WISTAR HAN RATS FEMALE | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | * TOTALS | | | | |
|------------------------------|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------|-------|-------|----|--|
| | 0732 | 0732 | 0731 | 0735 | 0733 | 0731 | 0731 | 0731 | 0731 | 0731 | 0731 | 0731 | 0731 | 0731 | 0731 | 0731 | 0731 | 0731 | 0731 | 0731 | 0731 | 0731 | | 0731 | 0731 | | |
| 30 mg/m3 | ANIMAL ID | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 00526 | 00527 | 00528 | 00529 | 00530 | 00531 | 00532 | 00533 | 00534 | 00535 | 00536 | 00537 | 00538 | 00539 | 00540 | 00541 | 00542 | 00543 | 00544 | 00545 | 00546 | 00547 | 00548 | 00549 | 00550 | | |
| Trachea | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| SPECIAL SENSES SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Eye | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Harderian Gland | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| URINARY SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Kidney | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Urinary Bladder | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| SYSTEMIC LESIONS | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Multiple Organ | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue

M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (CIMSTAR 3800)
 CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
 Time Report Requested: 12:32:34
 First Dose M/F: 04/14/08 / 04/14/08
 Lab: BNW

| | | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------------------------------|--|-------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|------------------------------|
| WISTAR HAN RATS FEMALE | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | | |
| | | 7 | 7 | 7 | 6 | 7 | 7 | 6 | 5 | 7 | 7 | 7 | 7 | 6 | 7 | 7 | 6 | 7 | 7 | 7 | 2 | 7 | 6 | 6 | | | |
| 100 mg/m3 | | 1 | 3 | 0 | 3 | 3 | 3 | 6 | 2 | 1 | 0 | 3 | 3 | 3 | 3 | 9 | 3 | 3 | 3 | 3 | 3 | 8 | 7 | 3 | | | |
| | | 5 | 1 | 3 | 3 | 2 | 2 | 3 | 3 | 7 | 3 | 3 | 1 | 5 | 1 | 2 | 1 | 2 | 3 | 5 | 3 | 0 | 1 | 6 | | 6 | 9 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | females
(cont...) |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | |
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | |

ALIMENTARY SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|------------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Esophagus | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Large, Cecum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | A | + | + | + | + | + |
| Intestine Large, Colon | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | A | + | + | + | + | + |
| Intestine Large, Rectum | + | I | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | I | A | + | + | + | + |
| Intestine Small, Duodenum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | A | + | + | + | + | + |
| Intestine Small, Ileum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | A | + | + | + | + | + |
| Intestine Small, Jejunum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | A | + | + | + | + | + |
| Liver | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Mesentery | | | | | | + | | | | | | | | | | | | | | | | | | | |
| Oral Mucosa | | | | | | | | | | | | | | | | | | | | | | | | | + |
| Pancreas | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Adenocarcinoma, Metastatic, Uterus | | | | | | | | | | | | | | | | | | | | | | | | | |
| Salivary Glands | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Stomach, Forestomach | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Stomach, Glandular | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue

M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (CIMSTAR 3800)
 CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
 Time Report Requested: 12:32:34
 First Dose M/F: 04/14/08 / 04/14/08
 Lab: BNW

| | | DAY ON TEST | | | | | | | | | | | | | | | | | | | | females
(cont...) | | | | |
|-------------------------------|-----------|-------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----------------------|---|---|---|---|
| WISTAR HAN RATS FEMALE | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | |
| | | 7 | 7 | 7 | 6 | 7 | 7 | 6 | 5 | 7 | 7 | 7 | 7 | 6 | 7 | 7 | 6 | 7 | 7 | 7 | 6 | | 7 | 5 | 6 | 6 |
| 100 mg/m3 | | 1 | 3 | 0 | 3 | 3 | 3 | 6 | 2 | 1 | 0 | 3 | 3 | 3 | 3 | 9 | 3 | 3 | 3 | 3 | 3 | 3 | 8 | 7 | 3 | |
| | | 5 | 1 | 3 | 3 | 2 | 2 | 3 | 3 | 7 | 3 | 3 | 1 | 5 | 1 | 2 | 1 | 2 | 3 | 5 | 3 | 0 | 1 | 6 | 9 | |
| | ANIMAL ID | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | |
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 |

CARDIOVASCULAR SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|--------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Blood Vessel | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Heart | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |

ENDOCRINE SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|--------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Adrenal Cortex | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Adenoma | | | X | | | | | | | | | | | | | | | | | | | | | | |
| Adrenal Medulla | + | + | + | + | + | + | + | + | + | M | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Islets, Pancreatic | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Parathyroid Gland | M | + | + | + | + | + | + | + | + | + | + | + | + | + | + | M | + | M | + | + | + | + | + | + | + |
| Pituitary Gland | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Pars Distalis, Adenoma | | X | X | | | | X | | X | X | X | | | | | X | X | X | X | X | | X | X | X | X |
| Pars Intermedia, Adenoma | | | | | X | | | | | | | | | | | | | | | | | | | | |
| Thyroid Gland | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | A | + | + | + | + |
| C-cell, Adenoma | | | | | | | | | | | | | X | | | | | | | | | X | | X | |
| C-cell, Carcinoma | | | | | | | | | | | | | | | X | | | | | | | | | | |
| Follicular Cell, Adenoma | | | | | | | | | | | | | | | | | | | | | | | | | |

GENERAL BODY SYSTEM

NONE

GENITAL SYSTEM

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue

M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (CIMSTAR 3800)
 CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
 Time Report Requested: 12:32:34
 First Dose M/F: 04/14/08 / 04/14/08
 Lab: BNW

| WISTAR HAN RATS FEMALE
100 mg/m3 | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | | ANIMAL ID | females
(cont...) |
|-------------------------------------|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----------|----------------------|
| | 0715 | 0713 | 0703 | 0633 | 0733 | 0772 | 0663 | 0553 | 0777 | 0777 | 0777 | 0667 | 0777 | 0667 | 0777 | 0667 | 0777 | 0777 | 0723 | 0773 | 0663 | 0773 | 0556 | 0766 | 0666 | | |
| | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00715 | |

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Clitoral Gland | + | + | + | + | + | + | + | + | + | M | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Ovary
Granulosa Cell Tumor Malignant | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Uterus
Polyp Stromal | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Polyp Stromal, Multiple | | | | | X | | | | | | | | | | | | | | | | | | | | |
| Sarcoma Stromal, Multiple | | | | | | | | | | | | | | | | | | | | | | | | | |
| Endometrium, Adenocarcinoma | | | | | | | | | | | | | | | | | | | | | | | | | |
| Endometrium, Malignant Mixed Mullerian Tumor | X | | | | | | | | | | | | | | | | | | | | | | | | |
| Vagina
Polyp | | | | | | | | | | | | | | | | | | | | | | | | | |

HEMATOPOIETIC SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bone Marrow | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Lymph Node, Bronchial | M | + | M | M | + | M | M | + | + | + | + | + | M | M | M | + | + | + | + | + | M | + | + | + | |
| Lymph Node, Mandibular | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Lymph Node, Mediastinal | + | + | + | + | + | + | + | + | + | + | M | + | + | + | + | + | + | + | + | + | + | + | + | M | + |
| Lymph Node, Mesenteric | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Spleen | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Thymus | + | + | + | + | + | + | + | + | + | + | + | M | + | + | + | + | + | + | + | + | + | + | + | + | |

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue
 M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (CIMSTAR 3800)
 CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
 Time Report Requested: 12:32:34
 First Dose M/F: 04/14/08 / 04/14/08
 Lab: BNW

| WISTAR HAN RATS FEMALE
100 mg/m3 | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | ANIMAL ID | females
(cont...) |
|-------------------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|-----------------------|----------------------|----------------------|
| | 0
7
1
5 | 0
7
3
1 | 0
7
0
3 | 0
6
3
3 | 0
7
3
2 | 0
7
3
2 | 0
6
6
3 | 0
5
2
3 | 0
7
1
3 | 0
7
0
3 | 0
7
3
3 | 0
6
3
1 | 0
7
3
5 | 0
7
3
1 | 0
6
3
2 | 0
7
3
3 | 0
7
2
5 | 0
7
3
3 | 0
6
3
0 | 0
7
3
1 | 0
5
8
6 | 0
6
7
0 | 0
6
3
9 | | | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0
0
7
0
1 | females
(cont...) | |
| Thymoma Benign | | | | | | X | | | X | | | | | | | | | | | | | | X | | | |

INTEGUMENTARY SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | |
|-----------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|--|
| Mammary Gland | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| Adenoma | | | | | | | | | | | | | | | | | | | | | | | | |
| Carcinoma | | | | | | | X | | | | | | | | | | | X | X | | | | | |
| Carcinoma, Multiple | | | | | | | | | | | | | | | | | | | | | | | X | |
| Fibroadenoma | | | | X | | | | | X | | X | | | X | | | | | | | | | | |
| Fibroadenoma, Multiple | | | | | | | | | | | | | | | | | | | | | | | | |
| Skin | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| Keratoacanthoma | | | | | | | | | | | | | | | X | | | | | | | | | |
| Squamous Cell Papilloma | | | | | | | | | | | | | | | | | | | | | | | | |
| Subcutaneous Tissue, Lipoma | | | | | | | | | | | | | | | | | | | | | | | | |

MUSCULOSKELETAL SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | |
|------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|--|
| Bone | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
|------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|--|

NERVOUS SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|--|
| Brain | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | | |
| Granular Cell Tumor Benign | | | | | | | | | | | | | | | | | | | | | | | | | |
| Granular Cell Tumor Malignant | | | | | X | | | | | | | | | | | | | | | | | | | | |
| Oligodendroglioma Malignant | | | | | | | X | | | | | | | | | | | | | | | | | | |
| Peripheral Nerve | | | | | | | | | + | + | | | | | | | | | | | + | | + | | |
| Spinal Cord | | | | | | | | | + | + | | | | | | | | | | | | + | | + | |

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue

M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (CIMSTAR 3800)
 CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
 Time Report Requested: 12:32:34
 First Dose M/F: 04/14/08 / 04/14/08
 Lab: BNW

| WISTAR HAN RATS FEMALE | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | | ANIMAL ID | females
(cont...) |
|------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|--|-----------|----------------------|
| | 0
7
1
5 | 0
7
3
1 | 0
7
0
3 | 0
6
3
3 | 0
7
3
2 | 0
7
3
2 | 0
6
6
3 | 0
5
2
3 | 0
7
1
7 | 0
7
0
3 | 0
7
3
3 | 0
6
3
1 | 0
7
3
5 | 0
7
6
2 | 0
7
3
1 | 0
7
7
2 | 0
7
3
3 | 0
7
2
5 | 0
6
3
0 | 0
7
3
1 | 0
5
8
6 | 0
6
7
0 | 0
6
3
4 | | | | |
| 100 mg/m3 | 0
7
0
1 | 0
0
0
2 | 0
0
0
3 | 0
0
0
4 | 0
0
0
5 | 0
0
0
6 | 0
0
0
7 | 0
0
0
8 | 0
0
0
9 | 0
0
1
0 | 0
0
1
1 | 0
0
1
1 | 0
0
1
1 | 0
0
1
1 | 0
0
1
1 | 0
0
1
1 | 0
0
1
1 | 0
0
1
1 | 0
0
2
0 | 0
0
2
1 | 0
0
2
2 | 0
0
2
3 | 0
0
2
4 | 0
0
2
5 | | | |

RESPIRATORY SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | |
|--------------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Larynx | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Lung
Alveolar/Bronchiolar Adenoma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Nose | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Trachea | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |

SPECIAL SENSES SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | |
|-----------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Eye | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Harderian Gland | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Zymbal's Gland | | | | | | | | | | | | | | | | | | | | | | | + |

URINARY SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | |
|-----------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kidney | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Urinary Bladder | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |

SYSTEMIC LESIONS

| | | | | | | | | | | | | | | | | | | | | | | | |
|----------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Multiple Organ | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
|----------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue

M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (CIMSTAR 3800)
 CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
 Time Report Requested: 12:32:34
 First Dose M/F: 04/14/08 / 04/14/08
 Lab: BNW

| WISTAR HAN RATS FEMALE | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | |
|------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|----------|
| | 0
7
3
2 | 0
7
3
3 | 0
7
3
0 | 0
7
2
5 | 0
6
8
1 | 0
6
7
3 | 0
7
3
1 | 0
7
3
2 | 0
7
3
3 | 0
7
3
3 | 0
7
3
3 | 0
7
3
3 | 0
6
4
5 | 0
7
3
1 | 0
7
1
9 | 0
7
3
1 | 0
7
3
3 | 0
7
3
1 | 0
7
3
3 | 0
7
3
3 | 0
7
3
3 | 0
7
3
2 | 0
7
7
2 | | |
| 100 mg/m3 | ANIMAL ID | | | | | | | | | | | | | | | | | | | | | | | | * TOTALS |
| | 0
0
7
2
6 | 0
0
7
2
7 | 0
0
7
2
8 | 0
0
7
2
9 | 0
0
7
3
0 | 0
0
7
3
1 | 0
0
7
3
2 | 0
0
7
3
3 | 0
0
7
3
4 | 0
0
7
3
5 | 0
0
7
3
6 | 0
0
7
3
7 | 0
0
7
3
8 | 0
0
7
3
9 | 0
0
7
4
0 | 0
0
7
4
1 | 0
0
7
4
2 | 0
0
7
4
3 | 0
0
7
4
4 | 0
0
7
4
5 | 0
0
7
4
6 | 0
0
7
4
7 | 0
0
7
4
8 | 0
0
7
4
9 | |

ALIMENTARY SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|------------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|
| Esophagus | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Intestine Large, Cecum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 49 |
| Intestine Large, Colon | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 49 |
| Intestine Large, Rectum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | I | + | + | + | + | + | + | + | + | + | 46 |
| Intestine Small, Duodenum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 49 |
| Intestine Small, Ileum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 49 |
| Intestine Small, Jejunum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 49 |
| Liver | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Mesentery | | | | | | + | + | | | | | | | | | | | + | | | | | | | 5 |
| Oral Mucosa | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Pancreas | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Adenocarcinoma, Metastatic, Uterus | | | | | | | | | | | | | | | | | | | X | | | | | | 1 |
| Salivary Glands | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Stomach, Forestomach | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Stomach, Glandular | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue

M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
Metal working fluids (CIMSTAR 3800)
CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
Time Report Requested: 12:32:34
First Dose M/F: 04/14/08 / 04/14/08
Lab: BNW

| | | DAY ON TEST | | | | | | | | | | | | | | | | | | | | * TOTALS | |
|------------------------|-----------|-------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----------|---|
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 |
| WISTAR HAN RATS FEMALE | | 7 | 7 | 7 | 7 | 6 | 6 | 7 | 7 | 7 | 7 | 7 | 7 | 6 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | |
| | | 3 | 3 | 3 | 2 | 8 | 7 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 3 | 1 | 3 | 3 | 3 | 3 | 3 | 3 | 2 |
| 100 mg/m3 | | 2 | 3 | 0 | 5 | 1 | 3 | 1 | 2 | 3 | 3 | 2 | 3 | 5 | 1 | 9 | 1 | 1 | 2 | 1 | 3 | 1 | 2 |
| | ANIMAL ID | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 |
| | | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 |
| | | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

CARDIOVASCULAR SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|--------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|
| Blood Vessel | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Heart | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |

ENDOCRINE SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|--------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|----|
| Adrenal Cortex | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Adenoma | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Adrenal Medulla | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 49 |
| Islets, Pancreatic | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Parathyroid Gland | + | + | + | + | M | + | M | + | + | M | + | + | + | M | + | + | + | + | + | + | + | I | + | + | 42 |
| Pituitary Gland | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Pars Distalis, Adenoma | X | | X | X | | X | | | X | X | X | | X | X | | X | | | X | | X | X | X | X | 30 |
| Pars Intermedia, Adenoma | | | | | | | | | | | | | | | | | | | | X | | | | | 2 |
| Thyroid Gland | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 49 |
| C-cell, Adenoma | | | | | | | | | | | | X | | | | | | | | | | | | | 4 |
| C-cell, Carcinoma | | | | | | | | | | | | | X | | | | | | | X | | | | | 3 |
| Follicular Cell, Adenoma | | | | | | | | | | | | | | | X | | | | | | | | | | 1 |

GENERAL BODY SYSTEM

NONE

GENITAL SYSTEM

* .. Total animals with tissue examined microscopically; Total animals with tumor
+ .. Tissue examined microscopically
X .. Lesion present
I .. Insufficient tissue

M .. Missing tissue
A .. Autolysis precludes evaluation
BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (CIMSTAR 3800)
 CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
 Time Report Requested: 12:32:34
 First Dose M/F: 04/14/08 / 04/14/08
 Lab: BNW

| WISTAR HAN RATS FEMALE
100 mg/m3 | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | * TOTALS |
|--|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|----------|
| | 07326 | 07330 | 07335 | 07340 | 07345 | 07350 | 07355 | 07360 | 07365 | 07370 | 07375 | 07380 | 07385 | 07390 | 07395 | 07400 | 07405 | 07410 | 07415 | 07420 | 07425 | 07430 | 07435 | | |
| ANIMAL ID | 00726 | 00727 | 00728 | 00729 | 00730 | 00731 | 00732 | 00733 | 00734 | 00735 | 00736 | 00737 | 00738 | 00739 | 00740 | 00741 | 00742 | 00743 | 00744 | 00745 | 00746 | 00747 | 00748 | 00749 | |
| Clitoral Gland | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 49 | |
| Ovary
Granulosa Cell Tumor Malignant | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50
1 | |
| Uterus | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Polyp Stromal | | | | X | | | | | | | | | | | | | | | | | X | | | 3 | |
| Polyp Stromal, Multiple | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| Sarcoma Stromal, Multiple | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| Endometrium, Adenocarcinoma | | | | | | | | | | | | | | | | | | | X | | X | | | 2 | |
| Endometrium, Malignant Mixed Mullerian Tumor | | | | | | | | | | | | | | | X | | | | | | | | | 1 | |
| Vagina | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| Polyp | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| HEMATOPOIETIC SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | |
| Bone Marrow | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Lymph Node, Bronchial | + | + | + | + | M | + | + | + | M | + | + | + | M | + | M | + | M | + | + | M | + | + | + | 35 | |
| Lymph Node, Mandibular | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | M | + | 49 | |
| Lymph Node, Mediastinal | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | I | + | + | + | + | + | 47 | |
| Lymph Node, Mesenteric | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Spleen | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Thymus | + | + | + | + | + | + | + | + | + | + | + | + | M | + | I | + | + | I | + | M | + | + | + | 45 | |

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue

M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (CIMSTAR 3800)
 CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
 Time Report Requested: 12:32:34
 First Dose M/F: 04/14/08 / 04/14/08
 Lab: BNW

| WISTAR HAN RATS FEMALE | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | * TOTALS |
|------------------------|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----------|
| | 0732 | 0733 | 0730 | 0732 | 0735 | 0736 | 0737 | 0737 | 0737 | 0737 | 0737 | 0737 | 0737 | 0737 | 0737 | 0737 | 0737 | 0737 | 0737 | 0737 | 0737 | 0737 | 0737 | 0737 | |
| 100 mg/m3 | 0026 | 0007 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 |
| ANIMAL ID | 7726 | 7707 | 7700 | 7700 | 7700 | 7700 | 7700 | 7700 | 7700 | 7700 | 7700 | 7700 | 7700 | 7700 | 7700 | 7700 | 7700 | 7700 | 7700 | 7700 | 7700 | 7700 | 7700 | 7700 | 7700 |

Thymoma Benign

3

INTEGUMENTARY SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|
| Mammary Gland | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Adenoma | X | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Carcinoma | | | | | | | | | | | | | | | | | | | | | | | | | 3 |
| Carcinoma, Multiple | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Fibroadenoma | | | | X | | | | | | X | | | X | | X | | | | | | | | | | 8 |
| Fibroadenoma, Multiple | X | | | | | | | X | | | | | | | | | | | | | | | | | 2 |
| Skin | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Keratoacanthoma | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Squamous Cell Papilloma | X | | | | | X | | | | | | | | | | | | X | | | | | | | 3 |
| Subcutaneous Tissue, Lipoma | | | | | | | | | | | | | | | X | | | | | | | | | | 1 |

MUSCULOSKELETAL SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|
| Bone | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
|------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|

NERVOUS SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|
| Brain | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Granular Cell Tumor Benign | | | | | | | | | | | | | X | | | | | | | | | | | | 1 |
| Granular Cell Tumor Malignant | | | | | X | | | | | | | | | | | | | | | | | | | | 2 |
| Oligodendroglioma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Peripheral Nerve | | | | | | | | | | | | | | | + | | + | | | | | | | | 6 |
| Spinal Cord | | | | | | | | | | | | | | | + | | + | | | | | | | | 6 |

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue

M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically

Experiment Number: 20515 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (CIMSTAR 3800)
 CAS Number: CIMSTAR3800

Date Report Requested: 02/18/2014
 Time Report Requested: 12:32:34
 First Dose M/F: 04/14/08 / 04/14/08
 Lab: BNW

| WISTAR HAN RATS FEMALE
100 mg/m3 | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | * TOTALS |
|-------------------------------------|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------|
| | 07326 | 07337 | 07338 | 07350 | 07361 | 07362 | 07373 | 07374 | 07375 | 07376 | 07377 | 07378 | 07379 | 07380 | 07381 | 07382 | 07383 | 07384 | 07385 | 07386 | 07387 | 07388 | 07389 | 07390 | |
| ANIMAL ID | 00726 | 00727 | 00728 | 00729 | 00730 | 00731 | 00732 | 00733 | 00734 | 00735 | 00736 | 00737 | 00738 | 00739 | 00740 | 00741 | 00742 | 00743 | 00744 | 00745 | 00746 | 00747 | 00748 | 00749 | |

RESPIRATORY SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|--------------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---------|
| Larynx | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Lung
Alveolar/Bronchiolar Adenoma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50
1 |
| Nose | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Trachea | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |

SPECIAL SENSES SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|
| Eye | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Harderian Gland | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Zymbal's Gland | | | | | | | | | | | | | | | | | | | | | | | | | 1 |

URINARY SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|
| Kidney | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Urinary Bladder | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |

SYSTEMIC LESIONS

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|
| Multiple Organ | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
|----------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|

*** END OF REPORT ***

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue

M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically