

**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

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 Lab: BNW

		DAY ON TEST																									
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
<b>WISTAR HAN RATS MALE</b>		7	7	7	7	5	7	7	5	7	7	3	7	6	7	7	7	7	2	2	0	3	2	7	7	7	
		1	1	0	3	9	3	2	3	1	3	4	3	1	2	3	3	2	2	0	3	2	2	2	2	2	
<b>Control</b>		8	5	4	0	7	0	9	5	0	0	5	0	2	9	0	0	9	9	4	9	0	9	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		
	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	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	<b>males (cont...)</b>

**ALIMENTARY SYSTEM**

Esophagus	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Intestine Large, Cecum	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Intestine Large, Colon	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Intestine Large, Rectum	+	+	+	+		+	+	+	+		+	+	+	+	+	+	+	+	+	+	+	+	+	+
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  
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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	0718		
Control	0008	0005	0004	0003	0007	0000	0006	0007	0008	0009	0000	0001	0002	0003	0004	0005	0006	0007	0008	0009	0000	0001	0002	0003	0004	0005	
	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	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	
	0001	0002	0003	0004	0005	0006	0007	0008	0009	0000	0001	0002	0003	0004	0005	0006	0007	0008	0009	0000	0001	0002	0003	0004	0005	0006	
Leiomyoma																										X	
Mesothelioma Malignant																											
Sarcoma																										X	
Stomach, Glandular Sarcoma	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<b>CARDIOVASCULAR SYSTEM</b>																											
Blood Vessel	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Heart Schwannoma Benign	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
																										X	
<b>ENDOCRINE SYSTEM</b>																											
Adrenal Cortex Adenoma Bilateral, Carcinoma	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Adrenal Medulla Pheochromocytoma Benign	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Islets, Pancreatic	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Parathyroid Gland	+	M	+	+	+	+	M	+	+	+	+	+	+	+	+	+	+	+	+	M	+	+	M	+	+	M	
Pituitary Gland Pars Distalis, Adenoma	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Pars Intermedia, Adenoma		X		X				X	X	X									X	X						X	

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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	1	1	1	1	1	1	1	1	1	1	1	2	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				

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								X																				

**HEMATOPOIETIC SYSTEM**

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

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WISTAR HAN RATS MALE  Control	DAY ON TEST																									males (cont...)
	0718	0715	0703	0700	0577	0577	0557	0557	0577	0577	0373	0376	0377	0377	0377	0377	0377	0377	0377	0377	0377	0377	0377	0377		
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	
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	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Spleen Mesothelioma Malignant	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Thymus Thymoma Benign	+	+	+	+	+	+	+	I	I	M	+	+	+	+	+	+	+	+	+	+	+	+	M	I	I	
<b>INTEGUMENTARY SYSTEM</b>																										
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																										
Subcutaneous Tissue, Fibroma																										
Subcutaneous Tissue, Fibrosarcoma																										
Subcutaneous Tissue, Lipoma																										

**MUSCULOSKELETAL SYSTEM**

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WISTAR HAN RATS MALE Control	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	0718		
ANIMAL ID	0001	0002	0003	0004	0005	0006	0007	0008	0009	0010	0011	0012	0013	0014	0015	0016	0017	0018	0019	0020	0021	0022	0023	0024	0025		
Bone Osteosarcoma	+	+	+	+	+	+	+	+	+	+	X	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
Skeletal Muscle Mesothelioma Malignant																											
<b>NERVOUS SYSTEM</b>																											
Brain Glioma Meningioma Malignant	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Peripheral Nerve			+		+																						
Spinal Cord			+		+																						
<b>RESPIRATORY SYSTEM</b>																											
Larynx	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Lung Alveolar/Bronchiolar Adenoma	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Nose	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Trachea	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<b>SPECIAL SENSES SYSTEM</b>																											
Eye	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	

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		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
<b>WISTAR HAN RATS MALE</b>	DAY ON TEST	7	7	7	7	5	7	7	5	7	7	3	7	6	7	7	7	7	7	7	7	7	7	7	7	7	
		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	
		8	5	4	0	7	0	9	5	0	0	5	0	2	9	0	0	9	9	4	9	0	9	9	9	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	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		
		<b>males (cont...)</b>																									
Harderian Gland		+ +																									
Zymbal's Gland Carcinoma		+ + X X																									
<hr/>																											
<b>URINARY SYSTEM</b>																											
Kidney Transitional Epithelium, Papilloma		+ +																									
Urinary Bladder		+ +																									
<hr/>																											
<b>SYSTEMIC LESIONS</b>																											
Multiple Organ Mesothelioma Malignant		+ +																									

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WISTAR HAN RATS MALE		DAY ON TEST																								* TOTALS
Control		0627	0599	0597	0730	0779	0770	0631	0733	0729	0494	0771	0773	0773	0773	0773	0773	0522	0733	0729	0729	0730	0673	0665	0729	
ANIMAL ID		00026	00007	00008	00009	00010	00011	00012	00013	00014	00015	00016	00017	00018	00019	00020	00021	00022	00023	00024	00025	00026	00027	00028	00029	00030
		0	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	0732	0773	0776	0771	0773	0777	0777	0477	0777	0777	0777	0777	0777	0777	0575	0777	0772	0772	0773	0676		0676	0777	
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		
Leiomyoma																										1	
Mesothelioma Malignant																										1	
Sarcoma																										1	
Stomach, Glandular Sarcoma	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
																										1	
<b>CARDIOVASCULAR SYSTEM</b>																											
Blood Vessel	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
Heart Schwannoma Benign	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
																										1	
<b>ENDOCRINE SYSTEM</b>																											
Adrenal Cortex Adenoma Bilateral, Carcinoma	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
		X																								2	
				X																						1	
Adrenal Medulla Pheochromocytoma Benign	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
																										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	DAY ON TEST																						* TOTALS
	0627	0599	0597	0732	0773	0776	0777	0777	0777	0777	0777	0777	0777	0777	0777	0777	0777	0777	0777	0777	0777	0777	
Control	ANIMAL ID																						* TOTALS
	0026	0007	0008	0009	0000	0001	0002	0003	0004	0005	0006	0007	0008	0009	0000	0001	0002	0003	0004	0005	0006	0007	
Thyroid Gland	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
C-cell, Adenoma											X	X											6
C-cell, Adenoma, Multiple																							1
Follicular Cell, Adenoma																							1
<b>GENERAL BODY SYSTEM</b>																							
Peritoneum																						+	1
Mesothelioma Malignant																						X	1
<b>GENITAL SYSTEM</b>																							
Epididymis	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
Mesothelioma Malignant																						X	1
Preputial Gland	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
Prostate	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
Adenoma, Multiple																							1
Mesothelioma Malignant																						X	1
Seminal Vesicle	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
Adenoma																							1
Testes	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
Mesothelioma Malignant																						X	1
Interstitial Cell, Adenoma																						X	2
<b>HEMATOPOIETIC SYSTEM</b>																							
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	0773	0773	0773	0773	0773	0773	0522	0723	0722	0722	0723	0607	0663		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	00001	
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	
<b>INTEGUMENTARY SYSTEM</b>																											
Mammary Gland	+	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	
Basal Cell Carcinoma															X											1	
Keratoacanthoma																										1	
Subcutaneous Tissue, Fibroma																										1	
Subcutaneous Tissue, Fibrosarcoma																										1	
Subcutaneous Tissue, Lipoma																										1	
<b>MUSCULOSKELETAL SYSTEM</b>																											

\* .. 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	
		067	059	059	073	072	073	061	073	072	074	077	077	077	077	077	077	052	073	072	072	073	060	065		072
WISTAR HAN RATS MALE  Control	ANIMAL ID	0026	0007	0008	0009	0010	0011	0012	0013	0014	0015	0016	0017	0018	0019	0020	0021	0022	0023	0024	0025	0026	0027	0028	0029	
	Bone Osteosarcoma	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	501
	Skeletal Muscle Mesothelioma Malignant																									11
	<b>NERVOUS SYSTEM</b>																									
	Brain Glioma Meningioma Malignant	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	5021
Peripheral Nerve		+	+																					5		
Spinal Cord		+	+																					5		
<b>RESPIRATORY SYSTEM</b>																										
Larynx	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
Lung Alveolar/Bronchiolar Adenoma	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	501	
Nose	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
Trachea	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
<b>SPECIAL SENSES SYSTEM</b>																										
Eye	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	

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M .. Missing tissue  
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**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 MALE																				* TOTALS						
	0627	0599	0597	0732	0773	0776	0777	0779	0779	0779	0779	0779	0779	0779	0779	0779	0779	0779	0779	0779		0779	0779	0779			
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		
Harderian Gland	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
Zymbal's Gland Carcinoma													+													3	
																										2	
<b>URINARY SYSTEM</b>																											
Kidney Transitional Epithelium, Papilloma	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
																										1	
Urinary Bladder	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
<b>SYSTEMIC LESIONS</b>																											
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

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	0736	0735	0735	0734	0737	0737	0736	0737	0736	
10 mg/m3	0020	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
	1200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200

**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												X													
Stomach, Forestomach	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+

\* .. Total animals with tissue examined microscopically; Total animals with tumor  
 + .. Tissue examined microscopically  
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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																														
	0730	0734	0750	0773	0777	0777	0777	0782	0777	0777	0777	0777	0777	0777	0777	0766	0755	0755	0744	0777	0777	0766	0777		0766	0777	0766	0777			
WISTAR HAN RATS MALE																															
10 mg/m3																															
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	0046	0047	0048	males (cont...)		
Stomach, Glandular	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+			
Tooth																													+		
<b>CARDIOVASCULAR SYSTEM</b>																															
Blood Vessel	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
Heart	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
Lymphoma Malignant			X																												
<b>ENDOCRINE SYSTEM</b>																															
Adrenal Cortex	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
Carcinoma																														X	
Lymphoma Malignant			X																												
Adrenal Medulla	+	+	+	+	+	+	+	+	+	+	+	+	I	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
Lymphoma Malignant			X					X																							
Pheochromocytoma Malignant	X																														
Islets, Pancreatic	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Parathyroid Gland	+	+	+	+	+	+	+	+	+	+	M	+	+	M	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
Adenoma			X																												
Pituitary Gland	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Lymphoma Malignant			X																												
Pars Distalis, Adenoma				X	X				X			X		X		X					X	X				X	X		X	X	
Pars Intermedia, Adenoma																															

\* .. 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	0733	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	0002	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	
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	0733	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	0022	0023	0024	0025	0026	0027	0028	0029	0030	0031	0032	0033	0034	0035	0036	0037	0038	0039	0040	0041	0042	0043	0044	0045		
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																			
<b>INTEGUMENTARY SYSTEM</b>																											
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	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	

\* .. 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	0730	0734	0750	0773	0777	0777	0777	0782	0777	0777	0777	0777	0777	0777	0777	0777	0766	0755	0755	0744	0747	0777		0766	0777	0767	0766	0777
10 mg/m3	ANIMAL ID																											
	0020	0002	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0002	0002	0002	0002	0002	0002
Sebacous Gland, Adenoma									X																			
Subcutaneous Tissue, Fibroma																												
Subcutaneous Tissue, Lymphoma Malignant																												
Subcutaneous Tissue, Neural Crest Tumor																												
Subcutaneous Tissue, Schwannoma Malignant																												

MUSCULOSKELETAL SYSTEM

Bone	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Osteosarcoma																												
Skeletal Muscle																												
Sarcoma																												

NERVOUS SYSTEM

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

RESPIRATORY SYSTEM

Larynx	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Lymphoma Malignant																												

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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	0730	0730	0730	0730	0730	0730	0730	0730	0730	0730	0730	0730	0730	0730	0730	0730	0730	0730	0730	0730	0730	0730	0730	
ANIMAL ID	00201	00202	00203	00204	00205	00206	00207	00208	00209	00210	00211	00212	00213	00214	00215	00216	00217	00218	00219	00220	00221	00222	00223	00224	00225	
Lung	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Lymphoma Malignant			X					X																		
Osteosarcoma, Metastatic, Bone																		X								
Osteosarcoma, Metastatic, Uncertain Primary Site						X																				
Nose	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Lymphoma Malignant								X																		
Trachea	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<b>SPECIAL SENSES SYSTEM</b>																										
Eye	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Lymphoma Malignant								X																		
Harderian Gland	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Lymphoma Malignant								X																		
Zymbal's Gland																										
Carcinoma																										
<b>URINARY SYSTEM</b>																										
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	07547	07733	07722	07722	07288	07733	07722	07722	07722	07722	07722	07722	07633	07566	07566	07429	07733	07733	07677	07677	07677	07677	males (cont...)
	ANIMAL ID	00200	00200	00200	00200	00200	00200	00200	00200	00200	00200	00200	00200	00200	00200	00200	00200	00200	00200	00200	00200	00200	00200	00200	00200	
		12000	22000	33000	44000	55000	66000	77000	88000	99000	00100	00100	00100	00100	00100	00100	00100	00100	00100	00100	00100	00200	00200	00200	00200	

**SYSTEMIC LESIONS**

Multiple Organ	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Lymphoma Malignant			X					X																	
Mesothelioma Malignant				X																					

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Experiment Number: 20515 - 03  
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 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	0022	0022	0022	0022	0023	0023	0023	0023	0023	0023	0023	0023	0023	0023	0023	0023	0023	0023	0023	0023	0023	0023	0023	50	

**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
Hepatocellular Carcinoma																							X		1
Lymphoma Malignant																									2
Mesentery	+				+								+										+		7
Pancreas	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
Salivary Glands	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
Lymphoma Malignant																									1
Stomach, Forestomach	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50

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 + .. Tissue examined microscopically  
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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  
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 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	002266	000078	000090	000101	000112	000123	000134	000145	000156	000167	000178	000189	000200	000211	000222	000233	000244	000255	000266	000277	000288	000299	000310	000321			
Stomach, Glandular	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50		
Tooth																									1		
<b>CARDIOVASCULAR SYSTEM</b>																											
Blood Vessel	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50		
Heart	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50		
Lymphoma Malignant																									1		
<b>ENDOCRINE SYSTEM</b>																											
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		

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**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
	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	6	7	6	7	7	7	7	7	5	7	7	6	6		
	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		
	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	3	3	3	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		
Thyroid Gland	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50		
Lymphoma Malignant																							1		
C-cell, Adenoma					X								X										5		
Follicular Cell, Carcinoma									X														1		
<b>GENERAL BODY SYSTEM</b>																									
NONE																									
<b>GENITAL SYSTEM</b>																									
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		
<b>HEMATOPOIETIC SYSTEM</b>																									
Bone Marrow	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50		

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

P04: NEOPLASMS BY INDIVIDUAL ANIMAL  
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 CAS Number: CIMSTAR3800

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 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	002227	002228	002229	002230	002231	002232	002233	002234	002235	002236	002237	002238	002239	002240	002241	002242	002243	002244	002245	002246	002247	002248	002249	002250	
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	
<b>INTEGUMENTARY SYSTEM</b>																										
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	

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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																							
<b>WISTAR HAN RATS MALE</b>	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	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	
<b>10 mg/m3</b>	9	9	0	0	1	0	0	4	0	4	0	7	9	3	0	0	9	1	0	5	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	
	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	<b>* TOTALS</b>

Sebaceous Gland, Adenoma																												1		
Subcutaneous Tissue, Fibroma																						X								2
Subcutaneous Tissue, Lymphoma Malignant																														1
Subcutaneous Tissue, Neural Crest Tumor																														1
Subcutaneous Tissue, Schwannoma Malignant	X																													2

**MUSCULOSKELETAL SYSTEM**

Bone	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		50	
Osteosarcoma																															1
Skeletal Muscle																															2
Sarcoma																															1

**NERVOUS SYSTEM**

Brain	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		50	
Carcinoma, Metastatic, Zymbal'S Gland																						X									1
Glioma																															1
Granular Cell Tumor Benign																															2
Granular Cell Tumor Malignant																															1
Lymphoma Malignant																															1
Peripheral Nerve																															4
Spinal Cord																															4

**RESPIRATORY SYSTEM**

Larynx	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		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

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	000022		
Lung	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50		
Lymphoma Malignant																									2		
Osteosarcoma, Metastatic, Bone																									1		
Osteosarcoma, Metastatic, Uncertain Primary Site																									1		
Nose	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50		
Lymphoma Malignant																									1		
Trachea	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49		
<b>SPECIAL SENSES SYSTEM</b>																											
Eye	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50		
Lymphoma Malignant																									1		
Harderian Gland	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50		
Lymphoma Malignant																									1		
Zymbal's Gland																									2		
Carcinoma																									2		
<b>URINARY SYSTEM</b>																											
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

<b>WISTAR HAN RATS MALE</b>	DAY ON TEST	07	04	07	07	07	07	07	07	07	07	07	07	06	07	06	07	07	07	07	05	07	07	06	<b>* TOTALS</b>
	<b>10 mg/m3</b>	29	39	30	30	31	30	30	40	04	04	00	03	03	27	53	30	32	33	33	05	03	29	20	
	ANIMAL ID	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	
		22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	
		22	22	22	22	33	33	33	33	33	33	33	33	33	33	44	44	44	44	44	44	44	44	45	
		67	78			01	22																		

**SYSTEMIC LESIONS**

Multiple Organ	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	<b>50</b>
Lymphoma Malignant																									<b>2</b>
Mesothelioma Malignant																									<b>1</b>

\* .. 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	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		
		7	7	7	7	7	5	7	6	7	7	7	7	7	7	7	5	7	7	7	7	7	6	7	7	7	
30 mg/m3		3	2	2	3	1	6	0	5	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	9	2	2	0	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		
		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	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

		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	0	0		
30 mg/m3		7	7	7	7	5	7	6	7	7	7	7	7	7	5	7	7	7	7	7	7	7	6	7	7		
ANIMAL ID		3	2	2	3	1	6	0	5	0	0	2	2	2	3	6	3	3	3	3	3	2	2	2	2		
		1	9	9	1	1	4	4	3	4	4	9	6	9	0	4	0	0	0	0	0	0	0	0	0		
		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		
		0	0	0	0	0	0	0	0	0	1	1	1	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	2	3	4	5	
Blood Vessel		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
Heart		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
Schwannoma Benign					X				X																		
<b>ENDOCRINE SYSTEM</b>																											
Adrenal Cortex		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Adenoma					X																						
Carcinoma																											
Adrenal Medulla		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Pheochromocytoma Benign																											
Islets, Pancreatic		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Adenoma									X																		
Carcinoma					X																						
Parathyroid Gland		M	+	+	M	+	+	+	+	+	+	+	+	+	M	+	+	+	+	+	+	M	+	+	+		
Pituitary Gland		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Pars Distalis, Adenoma							X		X									X				X		X			
Pars Distalis, Carcinoma					X																						
Pars Intermedia, Adenoma											X																
Thyroid Gland		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
C-cell, Adenoma					X				X						X												
C-cell, Carcinoma																									X		
Follicular Cell, Carcinoma																						X					

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 + .. 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...)				
<b>WISTAR HAN RATS MALE</b>		0731	0729	0779	0773	0771	0754	0774	0764	0773	0774	0777	0772	0772	0773	0773	0773	0773	0772	0772	0762		0773	0772	0772	
	<b>30 mg/m3</b>	0040	0044	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004		0004	0004	0004	
	ANIMAL ID	12	34	56	78	90	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		

**GENERAL BODY SYSTEM**

NONE

**GENITAL SYSTEM**

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

**HEMATOPOIETIC SYSTEM**

Bone Marrow	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Lymph Node																								+
Lymph Node, Bronchial	I	+	+	+	+	+	M	+	+	+	+	+	+	+	M	M	+	M	M	+	M	+	+	+
Lymph Node, Mandibular	M	M	M	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	M	+	+	+	+	+
Lymph Node, Mediastinal	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+

\* .. 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		
Lymphoma Malignant																											
Lymph Node, Mesenteric Hemangioma	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Spleen	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Thymus Thymoma Benign	+	+	+	+	+	+	+	+	+	+	+	+	+	+	M	+	+	+	+	+	+	X	+	+	+	+	
<b>INTEGUMENTARY SYSTEM</b>																											
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	
Skin Basal Cell Carcinoma	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Squamous Cell Papilloma																											
Subcutaneous Tissue, Fibroma																										X	
<b>MUSCULOSKELETAL SYSTEM</b>																											
Bone	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Skeletal Muscle Sarcoma																										+	
																										X	
<b>NERVOUS SYSTEM</b>																											
Brain Glioma	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Granular Cell Tumor 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	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	
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
ANIMAL ID	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																									
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

<b>WISTAR HAN RATS MALE</b>  <b>30 mg/m3</b>	DAY ON TEST	071	072	073	074	075	076	077	078	079	070	071	072	073	074	075	076	077	078	079	070	071	072	073	074	075	076	077	078	079	<b>males</b> <b>(cont...)</b>
	ANIMAL ID	0040	0044	0048	0052	0056	0060	0064	0068	0072	0076	0080	0084	0088	0092	0096	0100	0104	0108	0112	0116	0120	0124	0128	0132	0136	0140	0144	0148		
		0001	0002	0003	0004	0005	0006	0007	0008	0009	0010	0011	0012	0013	0014	0015	0016	0017	0018	0019	0020	0021	0022	0023	0024	0025	0026	0027	0028	0029	

### 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

	DAY ON TEST																								
<b>WISTAR HAN RATS MALE</b>  <b>30 mg/m3</b>	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	6	7	3	7	7	7	6		6	7
	2	3	2	2	3	2	3	3	2	2	3	0	2	3	2	3	3	0	2	2	2	4	8	2	
	9	0	9	9	0	9	0	0	0	9	0	0	9	0	9	1	9	9	9	9	9	6	4	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	0	0	
	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	
	2	2	2	2	3	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	9	<b>* TOTALS</b>

**ALIMENTARY SYSTEM**

Esophagus	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
Intestine Large, Cecum	+	+	+	+	+	+	+	+	+	+	A	+	+	+	+	+	A	+	+	+	+	A	+	47
Intestine Large, Colon	+	+	+	+	+	+	+	+	+	+	A	+	+	+	+	+	A	+	+	+	+	A	+	47
Intestine Large, Rectum	+	+	+	+	+	+	+	+	+	+	A	+	+	+	+	+	A	+	+	+	+	A	+	47
Intestine Small, Duodenum	+	+	+	+	+	+	+	+	+	+	A	+	+	+	+	+	A	+	+	+	+	A	+	47
Intestine Small, Ileum	+	+	+	+	+	+	+	+	+	+	A	+	+	+	+	+	A	+	+	+	+	A	+	47
Intestine Small, Jejunum	+	+	+	+	+	+	+	+	+	+	A	+	+	+	+	+	A	+	+	+	+	A	+	47
Liver	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
Mesentery																								1
Oral Mucosa																							+	1
Pancreas	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	A	+	+	+	+	+	+	49
Salivary Glands	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
Stomach, Forestomach	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
Stomach, Glandular	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	A	+	+	+	+	+	+	49

**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 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	
<b>ENDOCRINE SYSTEM</b>																										
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  
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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	00444	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	+	+	+	+	+	49 1
Spleen	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
Thymus Thymoma Benign	M	+	+	+	+	+	+	+	M	+	+	+	+	M	+	+	+	I	+	+	M	+	+	+	44 2	
<b>INTEGUMENTARY SYSTEM</b>																										
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	3
Skin	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
Basal Cell Carcinoma																									1	
Squamous Cell Papilloma	X																								1	
Subcutaneous Tissue, Fibroma																									1	
<b>MUSCULOSKELETAL SYSTEM</b>																										
Bone	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
Skeletal Muscle																									1	
Sarcoma																									1	
<b>NERVOUS SYSTEM</b>																										
Brain	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
Glioma																									1	
Granular Cell Tumor Malignant																							X		1	

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 + .. Tissue examined microscopically  
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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
<b>RESPIRATORY SYSTEM</b>																											
Larynx			+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
Lung Alveolar/Bronchiolar Adenoma			+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50 1
Nose			+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
Trachea			+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
<b>SPECIAL SENSES SYSTEM</b>																											
Ear																											1
Eye			+	+	+	+	+	+	+	+	+	+	A	+	+	+	+	+	+	A	+	+	+	+	+	+	48
Harderian Gland Adenoma			+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50 1
Zymbal's Gland																											1
<b>URINARY SYSTEM</b>																											
Kidney			+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	A	+	+	+	+	+	+	49
Urinary Bladder			+	+	+	+	+	+	+	+	+	+	A	+	+	+	+	+	+	A	+	+	+	+	+	+	48

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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				
	DAY ON TEST	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	6	7	3	7	7	7	6	6	7		
	WISTAR HAN RATS MALE	2	3	2	2	3	2	3	3	2	2	3	0	2	3	2	3	3	3	0	2	2	2	4	8	2	
	30 mg/m3	9	0	9	9	0	9	0	0	9	9	0	0	9	0	9	1	9	9	9	9	9	6	4	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	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		
		2	2	2	2	3	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	9	<b>* TOTALS</b>	

SYSTEMIC LESIONS

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

\* .. Total animals with tissue examined microscopically; Total animals with tumor  
 + .. Tissue examined microscopically  
 X .. Lesion present  
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 Route: RESPIRATORY EXPOSURE WHOLE BODY  
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 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...)						
<b>WISTAR HAN RATS MALE</b>		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			
<b>100 mg/m3</b>		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  
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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		0707	0707			
100 mg/m3		004	004	009	004	003	003	003	003	003	002	002	004	007	003	003	001	005	009	003	002		002	009	004	003	003
ANIMAL ID		006001	006002	006003	006004	006005	006006	006007	006008	006009	006010	006011	006012	006013	006014	006015	006016	006017	006018	006019	006020	006021	006022	006023	006024	006025	

Lymphoma Malignant	X																										
Stomach, Glandular Lymphoma Malignant	X	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Tooth																											+

**CARDIOVASCULAR SYSTEM**

Blood Vessel Lymphoma Malignant	X	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Heart		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+

**ENDOCRINE SYSTEM**

Adrenal Cortex Adenoma Carcinoma Lymphoma Malignant	X	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Adrenal Medulla Lymphoma Malignant Pheochromocytoma Benign	X	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Islets, Pancreatic Adenoma		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Parathyroid Gland Adenoma		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+

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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...)			
	0704	0704	0509	0509	0703	0703	0703	0703	0703	0703	0703	0703	0703	0703	0703	0703	0703	0703	0703	0703	0703	0703	0703	0703		0703	0703	
100 mg/m3	ANIMAL ID																											
	0060	0066	0066	0066	0066	0066	0066	0066	0066	0066	0066	0066	0066	0066	0066	0066	0066	0066	0066	0066	0066	0066	0066	0066	0066	0066	0066	
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				X													
C-cell, Carcinoma																X												
Follicular Cell, Carcinoma																												
<b>GENERAL BODY SYSTEM</b>																												
NONE																												
<b>GENITAL SYSTEM</b>																												
Coagulating Gland																												
Epididymis	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Mesothelioma Malignant																												
Preputial Gland	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Prostate	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Adenoma																							X					
Adenoma, Multiple											X																	
Lymphoma Malignant		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 100 mg/m3		DAY ON TEST																						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
ANIMAL ID		006001	006002	006003	006004	006005	006006	006007	006008	006009	006010	006011	006012	006013	006014	006015	006016	006017	006018	006019	006020	006021	006022	006023	006024

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

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<br><br>100 mg/m3 | DAY ON TEST | 0<br>7<br>0<br>4 | 0<br>7<br>0<br>4 | 0<br>5<br>9<br>5 | 0<br>5<br>0<br>4 | 0<br>7<br>3<br>1 | 0<br>7<br>3<br>1 | 0<br>7<br>3<br>0 | 0<br>7<br>3<br>1 | 0<br>7<br>3<br>0 | 0<br>7<br>2<br>5 | 0<br>2<br>0<br>2 | 0<br>6<br>4<br>6 | 0<br>7<br>3<br>0 | 0<br>7<br>3<br>1 | 0<br>6<br>7<br>5 | 0<br>7<br>2<br>9 | 0<br>7<br>3<br>0 | 0<br>7<br>2<br>2 | 0<br>6<br>9<br>5 | 0<br>7<br>0<br>4 | 0<br>7<br>3<br>0 | 0<br>7<br>3<br>1 | males<br>(cont...) |                  |
|                                       | ANIMAL ID   | 0<br>6<br>0<br>1 | 0<br>6<br>0<br>2 | 0<br>6<br>0<br>3 | 0<br>6<br>0<br>4 | 0<br>6<br>0<br>5 | 0<br>6<br>0<br>6 | 0<br>6<br>0<br>7 | 0<br>6<br>0<br>8 | 0<br>6<br>0<br>9 | 0<br>6<br>0<br>0 | 0<br>6<br>0<br>1 | 0<br>6<br>0<br>2 | 0<br>6<br>0<br>3 | 0<br>6<br>0<br>4 | 0<br>6<br>0<br>5 | 0<br>6<br>0<br>6 | 0<br>6<br>0<br>7 | 0<br>6<br>0<br>8 | 0<br>6<br>0<br>9 | 0<br>6<br>0<br>0 | 0<br>6<br>0<br>1 | 0<br>6<br>0<br>2 |                    | 0<br>6<br>0<br>3 |

Thymoma Benign  
 Thymoma Malignant

**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                                    | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Subcutaneous Tissue, Fibroma            |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Subcutaneous Tissue, Hemangiopericytoma |   |   |   |   |   |   |   |   |   |   |   |   |   | X |   |   |   |   |   |   |   |   |   |   |   |
| Subcutaneous Tissue, Hemangiosarcoma    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Subcutaneous Tissue, Lipoma             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Subcutaneous Tissue, Liposarcoma        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |

**MUSCULOSKELETAL SYSTEM**

|                                      |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bone                                 | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Osteosarcoma                         |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 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<br>100 mg/m3  | DAY ON TEST |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | males<br>(cont...) |
|--|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|--------------------|
|  | 0704        | 0704 | 0705 | 0705 | 0707 | 0707 | 0707 | 0707 | 0707 | 0707 | 0707 | 0707 | 0707 | 0707 | 0707 | 0707 | 0707 | 0707 | 0707 | 0707 | 0707 |                    |
|  | 004         | 004  | 009  | 004  | 003  | 003  | 003  | 003  | 002  | 002  | 000  | 004  | 007  | 003  | 003  | 007  | 006  | 007  | 007  | 006  | 007  |                    |
| ANIMAL ID  | 0000        | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 |                    |
|  | 0600        | 0600 | 0600 | 0600 | 0600 | 0600 | 0600 | 0600 | 0600 | 0600 | 0600 | 0600 | 0600 | 0600 | 0600 | 0600 | 0600 | 0600 | 0600 | 0600 | 0600 |                    |
|  | 0001        | 0002 | 0003 | 0004 | 0005 | 0006 | 0007 | 0008 | 0009 | 0000 | 0001 | 0002 | 0003 | 0004 | 0005 | 0006 | 0007 | 0008 | 0009 | 0000 | 0001 | 0002               |
| Larynx<br>Sarcoma, Metastatic, Salivary Glands   | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    |                    |
| Lung<br>Lymphoma Malignant<br>Osteosarcoma, Metastatic, Bone<br>Sarcoma, Metastatic, Salivary Glands | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    |                    |
|  |             |      | X    |      |      |      |      |      |      |      |      |      |      |      |      |      |      | X    |      |      |      |                    |
| Nose<br>Sarcoma, Metastatic, Salivary Glands   | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    |                    |
| Trachea<br>Sarcoma, Metastatic, Salivary Glands  | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    |                    |
| <b>SPECIAL SENSES SYSTEM</b>   |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                    |
| Eye  | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    |                    |
| Harderian Gland<br>Sarcoma, Metastatic, Salivary Glands  | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    |                    |
| <b>URINARY SYSTEM</b>  |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                    |
| Kidney<br>Lipoma<br>Lymphoma Malignant   | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    |                    |
|  |             |      | X    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                    |
| Urinary Bladder<br>Lymphoma Malignant  | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    |                    |
|  |             | X    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                    |

\* .. Total animals with tissue examined microscopically; Total animals with tumor  
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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<br><br>100 mg/m3 | DAY ON TEST | 0704                                | 0704 | 0554 | 0571 | 0771 | 0777 | 0777 | 0777 | 0777 | 0777 | 0222 | 0664 | 0473 | 0773 | 0667 | 0773 | 0772 | 0772 | 0669 | 0675 | 0774 | 0773 | 0773 | males<br>(cont...) |
|                                       | ANIMAL ID   | 0060                                | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 |                    |
|                                       |             | 12345678901234567890123456789012345 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                    |

**SYSTEMIC LESIONS**

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

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 + .. Tissue examined microscopically  
 X .. Lesion present  
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 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
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P04: NEOPLASMS BY INDIVIDUAL ANIMAL  
 Metal working fluids (CIMSTAR 3800)  
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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          |  | 0               | 0 | 0 | 0 | 0 | 0 | 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 |  | 7               | 6 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 3 | 7 | 4 | 7 | 6 | 7 | 7 | 7 | 6 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 |
| 100 mg/m3            |  | 2               | 1 | 3 | 2 | 2 | 3 | 2 | 2 | 2 | 2 | 9 | 3 | 5 | 3 | 3 | 3 | 3 | 2 | 2 | 3 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| ANIMAL ID            |  | 9               | 1 | 0 | 9 | 9 | 0 | 9 | 9 | 9 | 5 | 1 | 7 | 0 | 5 | 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 |
| ANIMAL ID            |  | 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 | 6 | 6 |   |
| ANIMAL ID            |  | 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 | 4 | 4 | 4 | 4 |   |
| ANIMAL ID            |  | 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 |   |
|                      |  | <b>* TOTALS</b> |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |

**ALIMENTARY SYSTEM**

|                           |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
|---------------------------|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|----|
| Esophagus                 | + |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 50 |
| Intestine Large, Cecum    | + |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 49 |
| Intestine Large, Colon    | + |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 49 |
| Lymphoma Malignant        |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 1  |
| Intestine Large, Rectum   | + |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 48 |
| Intestine Small, Duodenum | + |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 49 |
| Intestine Small, Ileum    | + |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 49 |
| Intestine Small, Jejunum  | + |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 49 |
| Liver                     | + |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 50 |
| Lymphoma Malignant        |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 1  |
| Mesentery                 | +   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 2  |
| Liposarcoma               | X   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 1  |
| Lymphoma Malignant        |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 1  |
| Pancreas                  | + |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 50 |
| Carcinoma                 |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 1  |
| Salivary Glands           | + |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 50 |
| Sarcoma                   | X   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 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<br>100 mg/m3                                | DAY ON TEST |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | * TOTALS |       |         |                   |
|--|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------|-------|---------|-------------------|
|  | 0729        | 0611  | 0713  | 0722  | 0729  | 0730  | 0732  | 0739  | 0739  | 0749  | 0755  | 0771  | 0774  | 0777  | 0783  | 0785  | 0789  | 0790  | 0792  | 0793  |          | 0799  | 0799    |                   |
| 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<br>Lymphoma Malignant                         | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +        | +     | +       | 50<br>1           |
| Tooth  |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |         | 1                 |
| <b>CARDIOVASCULAR SYSTEM</b>                                     |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |         |                   |
| Blood Vessel<br>Lymphoma Malignant                               | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +        | +     | +       | 50<br>1           |
| Heart  | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +        | +     | +       | 50                |
| <b>ENDOCRINE SYSTEM</b>  |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |         |                   |
| Adrenal Cortex<br>Adenoma<br>Carcinoma<br>Lymphoma Malignant     | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | X     | +     | +     | +     | +        | +     | +       | 50<br>1<br>1<br>1 |
| Adrenal Medulla<br>Lymphoma Malignant<br>Pheochromocytoma Benign | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +        | +     | +       | 50<br>1<br>5      |
| Islets, Pancreatic<br>Adenoma                                    | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +        | +     | +       | 50<br>2           |
| Parathyroid Gland<br>Adenoma                                     | +           | +     | +     | +     | +     | M     | +     | +     | +     | M     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +        | +     | 47<br>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<br>100 mg/m3    | DAY ON TEST |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | * TOTALS |
|--------------------------------------|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------|
|                                      | 0729        | 0611  | 0730  | 0779  | 0779  | 0779  | 0779  | 0779  | 0779  | 0779  | 0779  | 0779  | 0779  | 0779  | 0779  | 0779  | 0779  | 0779  | 0779  | 0779  | 0779  | 0779  | 0779  | 0779  |          |
| ANIMAL ID                            | 00626       | 00626 | 00626 | 00626 | 00626 | 00626 | 00626 | 00626 | 00626 | 00626 | 00626 | 00626 | 00626 | 00626 | 00626 | 00626 | 00626 | 00626 | 00626 | 00626 | 00626 | 00626 | 00626 | 00626 |          |
| 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     |       | 5     |          |
| C-cell, Carcinoma                    |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 1     |          |
| Follicular Cell, Carcinoma           |             |       |       | X     | X     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 2     |          |
| <b>GENERAL BODY SYSTEM</b>           |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |
| NONE                                 |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |
| <b>GENITAL SYSTEM</b>                |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |
| 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<br><br>100 mg/m3 | 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 | * TOTALS |
|---------------------------------------|-------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----------|
|                                       | ANIMAL ID   | 7 | 6 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 3 | 7 | 4 | 7 | 6 | 7 | 7 | 7 | 6 | 7 | 7 | 7 | 7 |          |
|                                       |             | 2 | 1 | 3 | 2 | 2 | 3 | 2 | 2 | 2 | 9 | 3 | 5 | 3 | 3 | 3 | 2 | 2 | 3 | 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 | 9 |          |
|                                       |             | 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 |          |
|                                       |             | 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 | 0 |          |

|                            |   |   |
|----------------------------|---|---|
| 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        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |    | 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

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

Thymoma Benign X **1**  
 Thymoma Malignant X **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 M **4**

Skin + **50**  
 Subcutaneous Tissue, Fibroma X **1**  
 Subcutaneous Tissue, Hemangiopericytoma **1**  
 Subcutaneous Tissue, Hemangiosarcoma X **1**  
 Subcutaneous Tissue, Lipoma **1**  
 Subcutaneous Tissue, Liposarcoma X **1**

**MUSCULOSKELETAL SYSTEM**

Bone + **50**  
 Osteosarcoma **2**  
 Sarcoma, Metastatic, Salivary Glands X **1**

**NERVOUS SYSTEM**

Brain + **50**  
 Granular Cell Tumor Benign X **1**  
 Sarcoma, Metastatic, Salivary Glands X **1**

Peripheral Nerve + + **6**

Spinal Cord + + **6**

**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  
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 Route: RESPIRATORY EXPOSURE WHOLE BODY  
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P04: NEOPLASMS BY INDIVIDUAL ANIMAL  
 Metal working fluids (CIMSTAR 3800)  
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Date Report Requested: 02/18/2014  
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| WISTAR HAN RATS MALE<br>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   |
| <b>SPECIAL SENSES SYSTEM</b>         |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |     |
| Eye                                  | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +        | 50  |
| Harderian Gland                      | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +        | 50  |
| Sarcoma, Metastatic, Salivary Glands |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | X     |       |          | 1   |
| <b>URINARY SYSTEM</b>                |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |     |
| Kidney                               | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +        | 50  |
| Lipoma                               |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | X        | 1   |
| Lymphoma Malignant                   |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          | 1   |
| Urinary Bladder                      | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | I        | 49  |
| 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

|                             |                    |  |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |
|-----------------------------|--------------------|--|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----------------|
| <b>WISTAR HAN RATS MALE</b> | <b>DAY ON TEST</b> |  | 07  | 06  | 07  | 07  | 07  | 07  | 07  | 07  | 07  | 07  | 07  | 07  | 07  | 07  | 07  | 07  | 07  | 07  | 07  | 07  | 07  | 07  | 07  |                 |
|                             | <b>ANIMAL ID</b>   |  | 29  | 11  | 30  | 29  | 29  | 03  | 22  | 22  | 22  | 22  | 29  | 35  | 17  | 00  | 00  | 00  | 00  | 00  | 00  | 00  | 00  | 00  | 00  |                 |
|                             |                    |  | 626 | 066 | 066 | 066 | 066 | 066 | 066 | 066 | 066 | 066 | 066 | 066 | 066 | 066 | 066 | 066 | 066 | 066 | 066 | 066 | 066 | 066 | 066 | 066             |
| <b>100 mg/m3</b>            |                    |  |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | <b>* TOTALS</b> |

**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<br>(cont...) |      |
|-------------------------------|------------------|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----------------------|------|
| <b>WISTAR HAN RATS FEMALE</b> | <b>Control</b>   | 0599        | 0732 | 0610 | 0732 | 0771 | 0670 | 0771 | 0771 | 0771 | 0771 | 0771 | 0576 | 0773 | 0776 | 0672 | 0772 | 0773 | 0773 | 0773 | 0678 | 0790 | 0733 | 0773 | 0677 | 0773 |                      |      |
|                               | <b>ANIMAL ID</b> | 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 | 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<br>Leiomyosarcoma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | X |
| Stomach, Glandular<br>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

|                               |                  | DAY ON TEST      |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  | females<br>(cont...) |                  |                  |                  |
|-------------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|----------------------|------------------|------------------|------------------|
| <b>WISTAR HAN RATS FEMALE</b> | <b>Control</b>   | 0<br>5<br>9<br>9 | 0<br>7<br>3<br>2 | 0<br>6<br>1<br>0 | 0<br>7<br>3<br>2 | 0<br>7<br>3<br>1 | 0<br>6<br>9<br>0 | 0<br>7<br>3<br>1 | 0<br>7<br>3<br>1 | 0<br>7<br>3<br>2 | 0<br>7<br>3<br>2 | 0<br>7<br>3<br>1 | 0<br>7<br>3<br>1 | 0<br>5<br>8<br>6 | 0<br>7<br>3<br>3 | 0<br>7<br>3<br>1 | 0<br>6<br>4<br>5 | 0<br>7<br>3<br>2 | 0<br>7<br>3<br>2 | 0<br>7<br>3<br>1 | 0<br>6<br>9<br>8 |                      | 0<br>7<br>0<br>3 | 0<br>7<br>0<br>3 |                  |
|                               | <b>ANIMAL ID</b> | 0<br>1<br>0<br>1 | 0<br>0<br>1<br>2 | 0<br>0<br>1<br>3 | 0<br>0<br>1<br>4 | 0<br>0<br>1<br>5 | 0<br>0<br>1<br>6 | 0<br>0<br>1<br>7 | 0<br>0<br>1<br>8 | 0<br>0<br>1<br>9 | 0<br>0<br>1<br>0 | 0<br>0<br>1<br>1 | 0<br>0<br>1<br>2 | 0<br>0<br>1<br>3 | 0<br>0<br>1<br>4 | 0<br>0<br>1<br>5 | 0<br>0<br>1<br>6 | 0<br>0<br>1<br>7 | 0<br>0<br>1<br>8 | 0<br>0<br>1<br>9 | 0<br>0<br>2<br>0 | 0<br>0<br>2<br>1     | 0<br>0<br>2<br>2 | 0<br>0<br>2<br>3 | 0<br>0<br>2<br>4 |

**CARDIOVASCULAR SYSTEM**

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

**ENDOCRINE SYSTEM**

|  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Adrenal Cortex<br>Adenoma  | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | X |
| Adrenal Medulla<br>Pheochromocytoma Benign<br>Pheochromocytoma Malignant                   | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | M | + | + | + | + | + | + |
| Islets, Pancreatic<br>Adenoma  | + | + | + | + | + | A | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | X |
| Parathyroid Gland  | + | + | + | + | + | + | + | M | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Pituitary Gland<br>Pars Distalis, Adenoma<br>Pars Intermedia, Adenoma                      | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Thyroid Gland<br>C-cell, Adenoma<br>Follicular Cell, Adenoma<br>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<br>Control | DAY ON TEST |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | females<br>(cont...) |
|-----------------------------------|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----------------------|
|                                   | 0599        | 0732 | 0610 | 0732 | 0771 | 0670 | 0771 | 0771 | 0771 | 0771 | 0771 | 0576 | 0771 | 0771 | 0663 | 0771 | 0771 | 0771 | 0771 | 0771 | 0668 | 0771 | 0771 | 0771 | 0771 |                      |
| 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                 |
|                                   | 0           | 0    | 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  
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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 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | females<br>(cont...) |  |  |
|----------------------------------|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----------------------|--|--|
|                                  | 0599        | 0732 | 0610 | 0733 | 0771 | 0670 | 0771 | 0771 | 0771 | 0771 | 0771 | 0573 | 0773 | 0676 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0676 | 0777 | 0777 | 0777 |                      |  |  |
| Control                          | ANIMAL ID   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                      |  |  |
|                                  | 0010        | 0001 | 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                    |  |  |
| Lymphoma Malignant               |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                      |  |  |
| Spleen                           | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +                    |  |  |
| Thymus                           | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +                    |  |  |
| Thymoma Benign                   |             |      | X    |      |      |      |      | X    |      | X    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                      |  |  |
| <b>INTEGUMENTARY SYSTEM</b>      |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                      |  |  |
| Mammary Gland                    | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +                    |  |  |
| Adenoma                          |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | X    |      |      |      | X    |      |      |      |                      |  |  |
| Carcinoma                        |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | X    |      |      | X    |                      |  |  |
| Carcinoma, Multiple              |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                      |  |  |
| Fibroadenoma                     |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                      |  |  |
| Fibroadenoma, Multiple           |             |      |      |      |      | X    |      |      |      |      | X    |      |      |      |      |      |      |      |      |      |      |      |      | X    |                      |  |  |
| Skin                             | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +                    |  |  |
| Subcutaneous Tissue, Liposarcoma |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                      |  |  |
| <b>MUSCULOSKELETAL SYSTEM</b>    |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                      |  |  |
| Bone                             | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +                    |  |  |
| <b>NERVOUS SYSTEM</b>            |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                      |  |  |
| 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

| 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 | 0 | 0 | 0 | 0 |   |
|------------------------|--|-------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WISTAR HAN RATS FEMALE |  | 5                 | 7 | 6 | 7 | 7 | 6 | 7 | 7 | 7 | 7 | 5 | 7 | 7 | 6 | 7 | 7 | 7 | 7 | 7 | 7 | 6 | 7 | 6 | 7 | 7 | 6 | 7 | 7 |   |
| Control                |  | 9                 | 3 | 1 | 3 | 3 | 9 | 3 | 3 | 3 | 1 | 3 | 3 | 8 | 3 | 3 | 4 | 3 | 3 | 3 | 3 | 9 | 0 | 0 | 3 | 3 | 9 | 0 | 3 |   |
| ANIMAL ID              |  | 9                 | 2 | 0 | 2 | 1 | 0 | 1 | 1 | 2 | 2 | 1 | 1 | 6 | 3 | 1 | 5 | 2 | 2 | 1 | 2 | 3 | 1 | 8 | 3 | 3 | 9 | 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 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
|                        |  | 1                 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 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 |   |   |   |   |
|                        |  | females (cont...) |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |

|             |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Spinal Cord | + |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|

**RESPIRATORY SYSTEM**

|         |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|---------|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Larynx  | + |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Lung    | + |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Nose    | + |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Trachea | + + + + + A + + + + + + + + + + + + + + + + + + |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

**SPECIAL SENSES SYSTEM**

|                 |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Eye             | + + + + + A + + + + + + + + + + + + + + + + + + |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Harderian Gland | + + + + + A + + + + + + + + + + + + + + + + + + |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

**URINARY SYSTEM**

|                                 |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|---------------------------------|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Kidney<br>Renal Tubule, Adenoma | + |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Urinary Bladder                 | + |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

**SYSTEMIC LESIONS**

|                                      |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|--------------------------------------|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Multiple Organ<br>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 | DAY ON TEST |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |  | * TOTALS |
|------------------------|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--|----------|
|                        | 0733        | 0732  | 0499  | 0733  | 0671  | 0733  | 0733  | 0671  | 0733  | 0733  | 0733  | 0470  | 0733  | 0733  | 0671  | 0733  | 0733  | 0733  | 0733  | 0733  | 0733  | 0733  | 0733  | 0733  |  |          |
| Control                | 00126       | 00126 | 00126 | 00126 | 00126 | 00126 | 00126 | 00126 | 00126 | 00126 | 00126 | 00126 | 00126 | 00126 | 00126 | 00126 | 00126 | 00126 | 00126 | 00126 | 00126 | 00126 | 00126 | 00126 |  |          |
| ANIMAL ID              | 1           | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    | 17    | 18    | 19    | 20    | 21    | 22    | 23    | 24    |  |          |

**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                              |   | + |   |   |   |   |   |   |   | + |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 7       |
| Pancreas                               | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 49      |
| Salivary Glands                        | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50      |
| Stomach, Forestomach<br>Leiomyosarcoma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50<br>1 |
| Stomach, Glandular<br>Leiomyosarcoma   | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50<br>1 |
| Tongue                                 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 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 FEMALE<br>Control | DAY ON TEST |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | * TOTALS |
|-----------------------------------|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------|
|                                   | 0733        | 0732  | 0499  | 0733  | 0671  | 0773  | 0672  | 0779  | 0772  | 0772  | 0472  | 0773  | 0773  | 0671  | 0773  | 0773  | 0773  | 0773  | 0773  | 0773  | 0773  | 0773  | 0773  |          |
| ANIMAL ID                         | 00126       | 00127 | 00128 | 00129 | 00130 | 00131 | 00132 | 00133 | 00134 | 00135 | 00136 | 00137 | 00138 | 00139 | 00140 | 00141 | 00142 | 00143 | 00144 | 00145 | 00146 | 00147 | 00148 | 50       |

**CARDIOVASCULAR SYSTEM**

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

**ENDOCRINE SYSTEM**

|                            |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |    |
|----------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|
| Adrenal Cortex             | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Adenoma                    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | X |   |   |   |   |   |   |   | 2  |
| Adrenal Medulla            | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 49 |
| Pheochromocytoma Benign    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 1  |
| Pheochromocytoma Malignant |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 1  |
| Islets, Pancreatic         | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 49 |
| Adenoma                    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 1  |
| Parathyroid Gland          | + | + | + | + | + | + | + | + | + | + | + | + | + | M | + | + | + | + | + | + | + | + | M | 47 |
| Pituitary Gland            | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Pars Distalis, Adenoma     | X | X | X | X | X | X |   | X |   |   |   |   | X | X | X |   | X | X |   | X | X |   | X | 35 |
| Pars Intermedia, Adenoma   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | X |   |   | 1  |
| Thyroid Gland              | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| C-cell, Adenoma            |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | X |   |   |   |   |   |   |   | 3  |
| Follicular Cell, Adenoma   |   |   |   |   |   |   |   |   |   |   |   |   | X |   |   |   |   |   |   |   |   |   |   | 1  |
| Follicular Cell, Carcinoma |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | X |   | 1  |

**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 | DAY ON TEST |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | * TOTALS |
|------------------------|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------|
|                        | 0733        | 0732  | 0499  | 0733  | 0670  | 0771  | 0772  | 0669  | 0772  | 0772  | 0472  | 0773  | 0773  | 0679  | 0773  | 0773  | 0773  | 0773  | 0773  | 0773  | 0773  | 0773  | 0773  | 0773  | 0773  |          |
| Control                | 00126       | 00127 | 00128 | 00129 | 00130 | 00131 | 00132 | 00133 | 00134 | 00135 | 00136 | 00137 | 00138 | 00139 | 00140 | 00141 | 00142 | 00143 | 00144 | 00145 | 00146 | 00147 | 00148 | 00149 | 00150 | 50       |

NONE

### GENITAL SYSTEM

|                                      |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |    |
|--------------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|
| Clitoral Gland                       | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Ovary                                | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Granulosa Cell Tumor Benign          | X |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 1  |
| Uterus                               | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Polyp Stromal                        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | X |   |   |   |   |   | X | 4  |
| Polyp Stromal, Multiple              |   |   |   |   |   |   |   |   |   |   | X |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 1  |
| Sarcoma Stromal                      |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | X | 2  |
| Endometrium, Adenocarcinoma          |   |   |   |   |   |   |   |   |   |   |   |   |   | X |   |   |   |   |   |   |   |   |   |   |   | 1  |
| Endometrium, Squamous Cell Papilloma |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 1  |

### HEMATOPOIETIC SYSTEM

|  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |    |
|--|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|
| Bone Marrow                                  | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Lymph Node                                   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 2  |
| Lymph Node, Bronchial<br>Lymphoma Malignant  | + | + | + | + | M | + | + | + | + | + | M | + | M | M | M | + | + | M | + | + | M | + | + | + | + | 38 |
|  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 1  |
| Lymph Node, Mandibular<br>Lymphoma Malignant | + | + | + | + | + | + | + | + | + | + | + | + | X | + | + | + | + | + | + | + | + | + | + | + | + | 49 |
|  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 1  |
| Lymph Node, Mediastinal                      | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 49 |
| Lymph Node, Mesenteric                       | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 49 |

\* .. 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<br>Control | DAY ON TEST |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |    | * TOTALS |
|-----------------------------------|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----|----------|
|                                   | 0733        | 0732  | 0499  | 0733  | 0671  | 0773  | 0661  | 0773  | 0661  | 0773  | 0661  | 0773  | 0661  | 0773  | 0661  | 0773  | 0661  | 0773  | 0661  | 0773  | 0661  | 0773  | 0661  | 0773  |    |          |
| ANIMAL ID                         | 00126       | 00077 | 00088 | 00099 | 00000 | 00011 | 00022 | 00033 | 00044 | 00055 | 00066 | 00077 | 00088 | 00099 | 00000 | 00011 | 00022 | 00033 | 00044 | 00055 | 00066 | 00077 | 00088 | 00099 |    |          |
| Hemangiosarcoma                   |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 1  |          |
| Lymphoma Malignant                |             |       |       |       |       |       |       |       |       |       |       |       | X     |       |       |       |       |       |       |       |       |       |       |       | 1  |          |
| Spleen                            | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | 50 |          |
| Thymus                            | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | M     | +     | +     | +     | M     | +     | +     | 48 |          |
| Thymoma Benign                    |             |       |       |       | X     |       |       |       |       |       |       | X     |       |       |       |       |       |       |       |       |       |       |       |       | 5  |          |
| <b>INTEGUMENTARY SYSTEM</b>       |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |    |          |
| Mammary Gland                     | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | 50 |          |
| Adenoma                           |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 2  |          |
| Carcinoma                         |             |       |       |       |       |       |       |       |       |       |       |       | X     |       |       |       |       |       |       |       |       |       |       |       | 3  |          |
| Carcinoma, Multiple               |             |       |       |       | X     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 1  |          |
| Fibroadenoma                      |             |       |       |       | X     |       |       |       |       |       |       |       |       |       | X     |       |       | X     |       | X     | X     | X     |       |       | 6  |          |
| Fibroadenoma, Multiple            |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 3  |          |
| Skin                              | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | 50 |          |
| Subcutaneous Tissue, Liposarcoma  |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | X     |       |       | 1  |          |
| <b>MUSCULOSKELETAL SYSTEM</b>     |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |    |          |
| Bone                              | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | 50 |          |
| <b>NERVOUS SYSTEM</b>             |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |    |          |
| Brain                             | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | 50 |          |
| Granular Cell Tumor Benign        |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       | X     |       |       |       |       |       |       |       |       | 2  |          |
| Peripheral Nerve                  |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | +     |       |       | 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

|                              |           | DAY ON TEST |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | * TOTALS |
|------------------------------|-----------|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------|
|                              |           | 0733        | 0732  | 0499  | 0733  | 0670  | 0771  | 0773  | 0619  | 0772  | 0772  | 0472  | 0773  | 0773  | 0679  | 0773  | 0773  | 0773  | 0773  | 0773  | 0773  | 0773  | 0773  | 0773  | 0773  |          |
| WISTAR HAN RATS FEMALE       | ANIMAL ID | 00126       | 00127 | 00128 | 00129 | 00130 | 00131 | 00132 | 00133 | 00134 | 00135 | 00136 | 00137 | 00138 | 00139 | 00140 | 00141 | 00142 | 00143 | 00144 | 00145 | 00146 | 00147 | 00148 | 00149 |          |
| 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     |          |
| Spinal Cord                  |           | +           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 2        |
| <b>RESPIRATORY SYSTEM</b>    |           |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |
| Larynx                       |           | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     |          |
| Lung                         |           | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     |          |
| Nose                         |           | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     |          |
| Trachea                      |           | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     |          |
| <b>SPECIAL SENSES SYSTEM</b> |           |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |
| Eye                          |           | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     |          |
| Harderian Gland              |           | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     |          |
| <b>URINARY SYSTEM</b>        |           |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |
| Kidney                       |           | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     |          |
| Renal Tubule, Adenoma        |           |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | X     |       |       |       |       |          |
| Urinary Bladder              |           | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     |          |
| <b>SYSTEMIC LESIONS</b>      |           |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |
| 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

|                               |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|-------------------------------|-------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| <b>WISTAR HAN RATS FEMALE</b> | 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 |   |
|                               |             | 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 | 8 | 1 | 3 | 3 |
| <b>10 mg/m3</b>               |             | 3 | 3 | 3 | 3 | 3 | 1 | 2 | 2 | 8 | 1 | 2 | 1 | 2 | 3 | 2 | 2 | 1 | 2 | 2 | 1 | 7 | 9 | 2 | 3 |
|                               | ANIMAL ID   | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
|                               |             | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
|                               |             | 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 | 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 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 |

females  
(cont...)

**ALIMENTARY SYSTEM**

|                           |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Esophagus                 | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Large, Cecum    | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Large, Colon    | + | + | + | + | + | + | + | + | + | + | + | + | + | I | + | + | + | + | + | + | + | + | + | + |
| Intestine Large, Rectum   | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Small, Duodenum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Small, Ileum    | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Small, Jejunum  | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Liver                     | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Hepatocellular Adenoma    |   | X |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 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

| WISTAR HAN RATS FEMALE<br>10 mg/m3                             | DAY ON TEST |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |   | females<br>(cont...) |   |   |
|--|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|---|----------------------|---|---|
|  | 0733        | 0733 | 0663 | 0663 | 0663 | 0477 | 0477 | 0477 | 0477 | 0477 | 0477 | 0477 | 0477 | 0477 | 0477 | 0477 | 0477 | 0477 | 0477 | 0477 | 0477 | 0477 | 0477 | 0477 |   |                      |   |   |
| ANIMAL ID  | 0030        | 0030 | 0030 | 0030 | 0030 | 0030 | 0030 | 0030 | 0030 | 0030 | 0030 | 0030 | 0030 | 0030 | 0030 | 0030 | 0030 | 0030 | 0030 | 0030 | 0030 | 0030 | 0030 | 0030 |   |                      |   |   |
|  | 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 |                      |   |   |
| Blood Vessel   | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    |   |                      |   |   |
| Heart  | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    |   |                      |   |   |
| <b>ENDOCRINE SYSTEM</b>  |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |   |                      |   |   |
| Adrenal Cortex<br>Adenoma                                      | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | X |                      |   |   |
| Adrenal Medulla<br>Pheochromocytoma Malignant                  | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | + |                      |   |   |
| Islets, Pancreatic   | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | + |                      |   |   |
| Parathyroid Gland  | +           | +    | +    | +    | +    | M    | +    | +    | +    | M    | M    | +    | +    | +    | +    | M    | +    | +    | +    | +    | +    | +    | +    | M    |   |                      |   |   |
| Pituitary Gland<br>Pars Distalis, Adenoma                      | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | + |                      |   |   |
| Thyroid Gland<br>C-cell, Adenoma<br>Follicular Cell, Carcinoma | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | + |                      |   |   |
| <b>GENERAL BODY SYSTEM</b>                                     |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |   |                      |   |   |
| NONE   |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |   |                      |   |   |
| <b>GENITAL SYSTEM</b>  |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |   |                      |   |   |
| 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<br>10 mg/m3     | DAY ON TEST |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |   | ANIMAL ID | females<br>(cont...) |
|--|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|---|-----------|----------------------|
|  | 0733        | 0730 | 0633 | 0668 | 0668 | 0478 | 0773 | 0773 | 0563 | 0773 | 0773 | 0773 | 0773 | 0773 | 0773 | 0773 | 0773 | 0773 | 0773 | 0668 | 0668 | 0773 | 0773 | 0773 |   |           |                      |
| Ovary                                  | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | + |           |                      |
| Granulosa Cell Tumor Malignant         |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |   |           |                      |
| Mesothelioma Malignant                 |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | X    | X |           |                      |
| Uterus                                 | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | + |           |                      |
| Polyp Stromal                          |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |   |           |                      |
| Endometrium, Adenocarcinoma            |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |   |           |                      |
| Vagina                                 |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |   |           |                      |
| Squamous Cell Carcinoma                |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |   |           |                      |
|  |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |   |           |                      |
| <b>HEMATOPOIETIC SYSTEM</b>            |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |   |           |                      |
| Bone Marrow                            | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | + |           |                      |
| Lymph Node                             |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |   |           |                      |
| Lymph Node, Bronchial                  | M           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | + |           |                      |
| Lymph Node, Mandibular                 | +           | +    | +    | M    | M    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | + |           |                      |
| Lymph Node, Mediastinal                | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | + |           |                      |
| Lymph Node, Mesenteric Hemangiosarcoma | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | + |           |                      |
| Spleen                                 | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | + |           |                      |
| Thymus                                 | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | + |           |                      |
| Thymoma Benign                         | 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

| 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 | 0 | 0 | 0 |
|-------------------------------|--------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| <b>WISTAR HAN RATS FEMALE</b> | 7                        | 7 | 6 | 6 | 6 | 4 | 7 | 7 | 5 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 6 | 6 | 7 | 7 | 7 |   |
| <b>10 mg/m3</b>               | 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 |   |
| <b>ANIMAL ID</b>              | 3                        | 3 | 3 | 3 | 3 | 1 | 2 | 2 | 8 | 1 | 2 | 1 | 2 | 3 | 2 | 2 | 1 | 2 | 2 | 1 | 7 | 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 | 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 |   |
|                               | 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 | 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 |   |   |
|                               | <b>females (cont...)</b> |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |

**INTEGUMENTARY SYSTEM**

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

**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

|                              |                                    | DAY ON TEST           |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |  | females<br>(cont...) |
|------------------------------|------------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|--|----------------------|
| WISTAR HAN RATS FEMALE       |                                    | 0<br>7<br>3<br>3      | 0<br>7<br>3<br>3      | 0<br>6<br>3<br>3      | 0<br>6<br>8<br>3      | 0<br>6<br>8<br>3      | 0<br>4<br>8<br>1      | 0<br>7<br>3<br>2      | 0<br>7<br>3<br>2      | 0<br>5<br>6<br>8      | 0<br>7<br>3<br>1      | 0<br>7<br>3<br>2      | 0<br>7<br>3<br>1      | 0<br>7<br>3<br>2      | 0<br>7<br>3<br>3      | 0<br>7<br>3<br>2      | 0<br>7<br>3<br>2      | 0<br>7<br>3<br>1      | 0<br>7<br>3<br>2      | 0<br>6<br>8<br>7      | 0<br>6<br>1<br>9      | 0<br>7<br>3<br>2      | 0<br>7<br>3<br>3      | 0<br>7<br>3<br>3      |                       |  |                      |
| 10 mg/m3                     |                                    | ANIMAL ID             |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |  |                      |
|                              |                                    | 0<br>0<br>3<br>0<br>1 | 0<br>0<br>3<br>0<br>2 | 0<br>0<br>3<br>0<br>3 | 0<br>0<br>3<br>0<br>4 | 0<br>0<br>3<br>0<br>5 | 0<br>0<br>3<br>0<br>6 | 0<br>0<br>3<br>0<br>7 | 0<br>0<br>3<br>0<br>8 | 0<br>0<br>3<br>0<br>9 | 0<br>0<br>3<br>1<br>0 | 0<br>0<br>3<br>1<br>1 | 0<br>0<br>3<br>1<br>1 | 0<br>0<br>3<br>1<br>1 | 0<br>0<br>3<br>1<br>1 | 0<br>0<br>3<br>1<br>1 | 0<br>0<br>3<br>1<br>1 | 0<br>0<br>3<br>1<br>1 | 0<br>0<br>3<br>1<br>1 | 0<br>0<br>3<br>1<br>1 | 0<br>0<br>3<br>2<br>2 | 0<br>0<br>3<br>2<br>2 | 0<br>0<br>3<br>2<br>2 | 0<br>0<br>3<br>2<br>2 | 0<br>0<br>3<br>2<br>2 |  |                      |
| Lung                         | Squamous Cell Carcinoma            | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     |  |                      |
| Nose                         |                                    | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     |  |                      |
| Trachea                      |                                    | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     |  |                      |
| <b>SPECIAL SENSES SYSTEM</b> |                                    |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |  |                      |
| Eye                          |                                    | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     |  |                      |
| Harderian Gland              |                                    | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     |  |                      |
| <b>URINARY SYSTEM</b>        |                                    |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |  |                      |
| Kidney                       | Transitional Epithelium, Papilloma | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     |  |                      |
| Urinary Bladder              |                                    | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     |  |                      |
| <b>SYSTEMIC LESIONS</b>      |                                    |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |  |                      |
| 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

| 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 | * TOTALS |  |
|-------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----------|--|
| <b>WISTAR HAN RATS FEMALE</b> | 7 | 7 | 6 | 7 | 6 | 7 | 7 | 7 | 6 | 5 | 7 | 7 | 7 | 6 | 5 | 6 | 6 | 7 | 5 | 7 | 7 | 7 | 7 | 7 |          |  |
| <b>10 mg/m3</b>               | 3 | 3 | 2 | 3 | 0 | 3 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 5 | 3 | 8 | 8 | 3 | 4 | 3 | 3 | 3 | 3 | 3 |          |  |
| ANIMAL ID                     | 2 | 2 | 7 | 2 | 3 | 1 | 9 | 1 | 3 | 0 | 2 | 1 | 1 | 3 | 0 | 1 | 4 | 2 | 4 | 2 | 1 | 1 | 2 | 1 |          |  |
|                               | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |          |  |
|                               | 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 |          |  |
|                               | 2 | 2 | 2 | 2 | 3 | 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 | 9 |          |  |

**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    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | X |   |   | 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<br>10 mg/m3                             | DAY ON TEST |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | * TOTALS     |  |  |
|--|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------------|--|--|
|  | 0732        | 0732  | 0627  | 0732  | 0630  | 0731  | 0771  | 0771  | 0663  | 0575  | 0777  | 0777  | 0666  | 0556  | 0666  | 0775  | 0777  | 0777  | 0777  | 0777  | 0777  | 0777  | 0777  | 0777  |              |  |  |
| ANIMAL ID  | 00326       | 00332 | 00337 | 00332 | 00330 | 00331 | 00332 | 00331 | 00333 | 00330 | 00333 | 00333 | 00333 | 00333 | 00333 | 00335 | 00338 | 00338 | 00334 | 00334 | 00333 | 00333 | 00333 | 00333 | 00333        |  |  |
| Blood Vessel   | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | 50           |  |  |
| Heart  | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | 50           |  |  |
| <b>ENDOCRINE SYSTEM</b>  |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |              |  |  |
| Adrenal Cortex<br>Adenoma                                      | +           | +     | +     | +     | +     | +     | +     | +     | X     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | 50<br>2      |  |  |
| Adrenal Medulla<br>Pheochromocytoma Malignant                  | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | X     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | 50<br>1      |  |  |
| Islets, Pancreatic   | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | 50           |  |  |
| Parathyroid Gland  | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | M     | +     | +     | +     | +     | 44    |              |  |  |
| Pituitary Gland<br>Pars Distalis, Adenoma                      | +           | +     | X     | X     | X     | X     | X     | X     | X     | +     | +     | X     | X     | X     | X     | +     | +     | X     | X     | +     | +     | X     | X     | X     | 50<br>33     |  |  |
| Thyroid Gland<br>C-cell, Adenoma<br>Follicular Cell, Carcinoma | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | 50<br>2<br>1 |  |  |
| <b>GENERAL BODY SYSTEM</b>                                     |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |              |  |  |
| NONE   |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |              |  |  |
| <b>GENITAL SYSTEM</b>  |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |              |  |  |
| 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<br>10 mg/m3     | DAY ON TEST |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | * TOTALS |
|--|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------|
|  | 0732        | 0732  | 0627  | 0732  | 0630  | 0731  | 0771  | 0771  | 0663  | 0573  | 0773  | 0773  | 0666  | 0556  | 0666  | 0775  | 0573  | 0664  | 0773  | 0773  | 0773  | 0773  | 0773  |          |
| ANIMAL ID                              | 00326       | 00332 | 00337 | 00339 | 00340 | 00341 | 00342 | 00343 | 00344 | 00345 | 00346 | 00347 | 00348 | 00349 | 00350 | 00351 | 00352 | 00353 | 00354 | 00355 | 00356 | 00357 | 00358 | 00359    |
| 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        |
| <b>HEMATOPOIETIC SYSTEM</b>            |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |
| Bone Marrow                            | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | 50       |
| Lymph Node                             |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 2        |
| Lymph Node, Bronchial                  | +           | 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 | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | 50       |
|  |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | X     | 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

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

### INTEGUMENTARY SYSTEM

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

### MUSCULOSKELETAL SYSTEM

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

### NERVOUS SYSTEM

|                            |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |    |
|----------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|
| Brain                      | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Granular Cell Tumor Benign |   |   |   |   |   | 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                    | DAY ON TEST |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | * TOTALS |  |
|---|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----------|--|
|   | 0732        | 0732 | 0672 | 0773 | 0673 | 0773 | 0773 | 0673 | 0573 | 0773 | 0773 | 0673 | 0563 | 0663 | 0773 | 0573 | 0673 | 0773 | 0773 | 0773 | 0773 | 0773 | 0773 | 0773 |          |  |
| 10 mg/m3                                  | ANIMAL ID   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | * TOTALS |  |
|   | 0032        | 0032 | 0032 | 0032 | 0032 | 0032 | 0032 | 0032 | 0032 | 0032 | 0032 | 0032 | 0032 | 0032 | 0032 | 0032 | 0032 | 0032 | 0032 | 0032 | 0032 | 0032 | 0032 | 0032 |          |  |
| Lung Squamous Cell Carcinoma              | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | 50<br>1  |  |
| Nose                                      | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | 50       |  |
| Trachea                                   | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | 50       |  |
| <b>SPECIAL SENSES SYSTEM</b>              |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |          |  |
| Eye                                       | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | 50       |  |
| Harderian Gland                           | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | 50       |  |
| <b>URINARY SYSTEM</b>                     |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |          |  |
| Kidney Transitional Epithelium, Papilloma | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | 50<br>1  |  |
| Urinary Bladder                           | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | 50       |  |
| <b>SYSTEMIC LESIONS</b>                   |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |          |  |
| Multiple Organ Mesothelioma Malignant     | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | 50<br>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<br>(cont...) |   |
|------------------------|----------|-------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----------------------|---|
| WISTAR HAN RATS FEMALE | 30 mg/m3 | 0           | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |                      | 0 |
|                        |          | 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 | 6 | 3 | 3 | 3 | 3 | 8 | 3 | 3 | 9 | 3 | 3 | 4 | 3 | 3 | 3 | 1                    | 3 |
|                        |          | 2           | 3 | 8 | 0 | 2 | 1 | 0 | 2 | 1 | 3 | 2 | 2 | 1 | 3 | 1 | 1 | 8 | 3 | 1 | 2 | 2                    | 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                    |   |
|                        | 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                    |   |
|                        | 0        | 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 | 2                    |   |

### ALIMENTARY SYSTEM

|                                 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Esophagus                       | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Large, Cecum          | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Large, Colon          | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Large, Rectum         | + | + | + | + | + | + | + | + | I | + | + | + | + | + | + | + | + | + | + | I | + | + |
| Intestine Small, Duodenum       | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Small, Ileum          | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Small, Jejunum        | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Liver<br>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                   | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
|-------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| <b>WISTAR HAN RATS FEMALE</b> | 7 | 6 | 7 | 6 | 7 | 7 | 6 | 7 | 7 | 7 | 7 | 7 | 6 | 7 | 7 | 5 | 7 | 7 | 6 | 7 | 7 | 7 | 7 |
| <b>30 mg/m3</b>               | 3 | 7 | 0 | 9 | 3 | 3 | 6 | 3 | 3 | 3 | 3 | 3 | 8 | 3 | 3 | 9 | 3 | 3 | 4 | 3 | 3 | 3 | 3 |
| <b>ANIMAL ID</b>              | 2 | 3 | 8 | 0 | 2 | 1 | 0 | 2 | 1 | 3 | 2 | 2 | 1 | 3 | 1 | 1 | 8 | 3 | 1 | 2 | 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 |
|                               | 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 |
|                               | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 |

females (cont...)

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

ENDOCRINE SYSTEM

|                          |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Adrenal Cortex           | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Adenoma                  |   |   |   |   |   |   |   |   |   |   |   |   | X |   |   |   |   |   |   |   |   |   |   |
| Adrenal Medulla          | + | + | + | + | + | + | + | + | + | M | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Pheochromocytoma Benign  |   |   |   |   |   |   |   |   |   |   |   |   |   |   | X |   |   |   |   |   |   |   |   |
| Islets, Pancreatic       | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Parathyroid Gland        | M | + | + | + | + | + | + | + | + | + | + | + | + | + | 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

|                               |  |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                      |
|-------------------------------|--|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----------------------|
| <b>Wistar Han Rats Female</b> |  | DAY ON TEST |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                      |
|                               |  | 0732        | 0673 | 0708 | 0693 | 0733 | 0762 | 0771 | 0771 | 0771 | 0771 | 0771 | 0676 | 0773 | 0773 | 0773 | 0773 | 0773 | 0773 | 0773 | 0773 | 0773 | 0773 | 0773 |                      |
| <b>30 mg/m3</b>               |  | ANIMAL ID   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | females<br>(cont...) |
|                               |  | 0050        | 0050 | 0050 | 0050 | 0050 | 0050 | 0050 | 0050 | 0050 | 0050 | 0050 | 0050 | 0050 | 0050 | 0050 | 0050 | 0050 | 0050 | 0050 | 0050 | 0050 | 0050 | 0050 |                      |
|                               |  | 11          | 22   | 33   | 44   | 55   | 66   | 77   | 88   | 99   | 00   | 11   | 22   | 33   | 44   | 55   | 66   | 77   | 88   | 99   | 00   | 11   | 22   | 33   |                      |

### INTEGUMENTARY SYSTEM

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

| WISTAR HAN RATS FEMALE       | DAY ON TEST |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | females<br>(cont...) |
|------------------------------|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----------------------|
|                              | ANIMAL ID   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                      |
|                              | 0732        | 0763 | 0778 | 0779 | 0779 | 0779 | 0779 | 0779 | 0779 | 0779 | 0779 | 0779 | 0779 | 0779 | 0779 | 0779 | 0779 | 0779 | 0779 | 0779 |                      |
| 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    | 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    | 1    | 1    | 1                    |
|                              | 1           | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 0    | 1    | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 0    | 1                    |
| Trachea                      | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +                    |
| <b>SPECIAL SENSES SYSTEM</b> |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                      |
| Eye                          | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +                    |
| Harderian Gland              | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +                    |
| <b>URINARY SYSTEM</b>        |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                      |
| Kidney                       | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +                    |
| Urinary Bladder              | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +                    |
| <b>SYSTEMIC LESIONS</b>      |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                      |
| 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 |       |       |       |       |       |
|------------------------|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------|-------|-------|-------|-------|-------|
|                        | 0732        | 0732  | 0733  | 0731  | 0735  | 0733  | 0761  | 0753  | 0772  | 0773  | 0773  | 0773  | 0763  | 0773  | 0773  | 0773  | 0773  | 0768  | 0773  | 0773  |          | 0773  | 0773  | 0773  | 0764  | 0764  |
| 30 mg/m3               | 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 | 00551 |

**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

| WISTAR HAN RATS FEMALE<br>30 mg/m3 | DAY ON TEST |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | * TOTALS |
|------------------------------------|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------|
|                                    | 0732        | 0732  | 0733  | 0731  | 0775  | 0776  | 0778  | 0779  | 0783  | 0784  | 0785  | 0786  | 0787  | 0788  | 0789  | 0790  | 0791  | 0792  | 0793  | 0794  | 0795  | 0796  | 0797  | 0798  |          |
| 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    |
| Blood Vessel                       | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | 50       |
| Heart                              | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | 50       |
| Chemodectoma Benign                |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 1        |
| Hemangioma                         |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 1        |

**ENDOCRINE SYSTEM**

|                          |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |    |    |
|--------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|----|
| Adrenal Cortex           | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |    |
| Adenoma                  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |    | 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 |   | 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<br>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  |                        | 0739    |  |
| 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<br>Granulosa Cell Tumor Benign   | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | X     | +     | +     | +     | +     | +     | +     | +     | +     | 50<br>1                |         |  |
| Uterus<br>Fibroma<br>Leiomyoma<br>Polyp Stromal<br>Endometrium, Adenocarcinoma | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | X     | +     | +     | +     | +     | +     | +     | +     | 50<br>1<br>1<br>3<br>1 |         |  |
| <b>HEMATOPOIETIC SYSTEM</b>  |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                        |         |  |
| Bone Marrow  | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | 50                     |         |  |
| Lymph Node   |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 1                      |         |  |
| Lymph Node, Bronchial  | +           | +     | M     | +     | +     | +     | 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<br>Hemangiosarcoma                                      | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | 50<br>1                |         |  |
| Spleen   | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | 50                     |         |  |
| Thymus<br>Thymoma Benign   | +           | +     | +     | +     | +     | +     | +     | +     | +     | M     | +     | +     | +     | +     | M     | +     | +     | +     | +     | +     | +     | +     | M     | +     | +                      | 45<br>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

|                               | DAY ON TEST |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                 |  |
|-------------------------------|-------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----------------|--|
| <b>WISTAR HAN RATS FEMALE</b> | 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 | 6 | 5 | 7 | 7 | 7 | 7 | 6 | 7 | 7 | 7 | 7 | 6 | 7 | 7 | 7 | 7               |  |
| <b>30 mg/m3</b>               | 3           | 3 | 3 | 3 | 0 | 3 | 8 | 6 | 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               |  |
|                               | 0           | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0               |  |
|                               | 0           | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0               |  |
| <b>ANIMAL ID</b>              | 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 | 3 | 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               |  |
|                               |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | <b>* TOTALS</b> |  |

**INTEGUMENTARY SYSTEM**

|                        |   |  |   |  |  |  |   |  |  |  |  |  |  |  |   |   |  |   |   |   |    |   |
|------------------------|---|--|---|--|--|--|---|--|--|--|--|--|--|--|---|---|--|---|---|---|----|---|
| Mammary Gland          | + |  |   |  |  |  |   |  |  |  |  |  |  |  |   |   |  |   |   |   | 50 |   |
| Adenoma                |   |  |   |  |  |  |   |  |  |  |  |  |  |  |   |   |  |   |   | X | 1  |   |
| Carcinoma              | X |  |   |  |  |  |   |  |  |  |  |  |  |  |   |   |  |   | X | X | 5  |   |
| Carcinoma, Multiple    |   |  | X |  |  |  |   |  |  |  |  |  |  |  |   |   |  |   |   |   | X  | 4 |
| Fibroadenoma           |   |  | X |  |  |  |   |  |  |  |  |  |  |  | X | X |  | 9 |   |   |    |   |
| Fibroadenoma, Multiple |   |  |   |  |  |  | X |  |  |  |  |  |  |  |   |   |  |   | X | X | 4  |   |
| Skin                   | + |  |   |  |  |  |   |  |  |  |  |  |  |  |   |   |  |   |   |   | 50 |   |

**MUSCULOSKELETAL SYSTEM**

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

**NERVOUS SYSTEM**

|                  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |   |    |
|------------------|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|---|---|----|
| Brain            | + |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |   | 50 |
| Peripheral Nerve |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | + | + | 5  |
| Spinal Cord      |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | + | + | 5  |

**RESPIRATORY SYSTEM**

|        |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
|--------|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|----|
| Larynx | + |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 50 |
| Lung   | + |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 50 |
| Nose   | + |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 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       | 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                     | 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 |    |    |
|                              | ANIMAL ID   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |       |    |    |
| Trachea                      |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |       | 50 |    |
| <b>SPECIAL SENSES SYSTEM</b> |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |       |    |    |
| Eye                          |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |       |    | 50 |
| Harderian Gland              |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |       |    | 50 |
| <b>URINARY SYSTEM</b>        |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |       |    |    |
| Kidney                       |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |       |    | 50 |
| Urinary Bladder              |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |       |    | 50 |
| <b>SYSTEMIC LESIONS</b>      |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |       |    |    |
| Multiple Organ               |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |       |    | 50 |

\* .. Total animals with tissue examined microscopically; Total animals with tumor  
 + .. Tissue examined microscopically  
 X .. Lesion present  
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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  
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 First Dose M/F: 04/14/08 / 04/14/08  
 Lab: BNW

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

### 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<br>(cont...) |   |   |   |   |
|-------------------------------|-----------|-------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----------------------|---|---|---|---|
| <b>WISTAR HAN RATS FEMALE</b> |           | 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 |
| <b>100 mg/m3</b>              |           | 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 |   |
|                               |           | 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<br>100 mg/m3 | DAY ON TEST |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | ANIMAL ID | females<br>(cont...) |
|-------------------------------------|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----------|----------------------|
|                                     | 0715        | 0713 | 0703 | 0633 | 0733 | 0772 | 0663 | 0523 | 0773 | 0773 | 0773 | 0663 | 0773 | 0663 | 0773 | 0663 | 0773 | 0773 | 0723 | 0773 | 0663 | 0753 | 0663 | 0763 | 0763 |           |                      |
|                                     | 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 |           |                      |
|                                     | 7777        | 7777 | 7777 | 7777 | 7777 | 7777 | 7777 | 7777 | 7777 | 7777 | 7777 | 7777 | 7777 | 7777 | 7777 | 7777 | 7777 | 7777 | 7777 | 7777 | 7777 | 7777 | 7777 | 7777 | 7777 |           |                      |
|                                     | 1111        | 3333 | 0000 | 3333 | 3333 | 3333 | 6666 | 2222 | 1111 | 0000 | 3333 | 3333 | 3333 | 9999 | 3333 | 3333 | 1111 | 2222 | 3333 | 3333 | 5555 | 3333 | 3333 | 0000 | 1111 |           |                      |
|                                     | 5555        | 1111 | 3333 | 3333 | 2222 | 2222 | 3333 | 3333 | 7777 | 3333 | 3333 | 1111 | 5555 | 1111 | 2222 | 1111 | 2222 | 3333 | 5555 | 3333 | 5555 | 3333 | 0000 | 1111 | 6666 |           |                      |
|                                     | 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 |           |                      |
|                                     | 7777        | 7777 | 7777 | 7777 | 7777 | 7777 | 7777 | 7777 | 7777 | 7777 | 7777 | 7777 | 7777 | 7777 | 7777 | 7777 | 7777 | 7777 | 7777 | 7777 | 7777 | 7777 | 7777 | 7777 | 7777 |           |                      |
|                                     | 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 |           |                      |
|                                     | 1111        | 2222 | 3333 | 4444 | 5555 | 6666 | 7777 | 8888 | 9999 | 0000 | 1111 | 2222 | 3333 | 4444 | 5555 | 6666 | 7777 | 8888 | 9999 | 0000 | 1111 | 2222 | 2222 | 2222 | 2222 |           |                      |

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

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

**RESPIRATORY SYSTEM**

|                                      |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Larynx                               | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Lung<br>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 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | * TOTALS |
|------------------------|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------|
|                        | 0732        | 0733  | 0730  | 0725  | 0761  | 0763  | 0771  | 0777  | 0777  | 0777  | 0777  | 0777  | 0777  | 0766  | 0777  | 0777  | 0777  | 0777  | 0777  | 0777  | 0777  | 0777  | 0777  | 0777  |          |
| 100 mg/m3              | 00726       | 00707 | 00708 | 00709 | 00700 | 00701 | 00702 | 00703 | 00704 | 00705 | 00706 | 00707 | 00708 | 00709 | 00700 | 00701 | 00702 | 00703 | 00704 | 00705 | 00706 | 00707 | 00708 | 00709 | 00700    |
| ANIMAL ID              | 726         | 707   | 708   | 709   | 700   | 701   | 702   | 703   | 704   | 705   | 706   | 707   | 708   | 709   | 700   | 701   | 702   | 703   | 704   | 705   | 706   | 707   | 708   | 709   | 700      |

**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

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

**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<br>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  | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | 50       |  |  |
| Granulosa Cell Tumor Malignant               |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 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     |          |  |  |
| <b>HEMATOPOIETIC SYSTEM</b>                  |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |  |  |
| 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<br>100 mg/m3 | DAY ON TEST |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | * TOTALS |
|-------------------------------------|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------|
|                                     | 0732        | 0733  | 0730  | 0725  | 0761  | 0766  | 0777  | 0777  | 0777  | 0777  | 0777  | 0777  | 0777  | 0777  | 0777  | 0777  | 0777  | 0777  | 0777  | 0777  | 0777  | 0777  | 0777  | 0777  |          |
| ANIMAL ID                           | 00726       | 00707 | 00700 | 00700 | 00700 | 00700 | 00700 | 00700 | 00700 | 00700 | 00700 | 00700 | 00700 | 00700 | 00700 | 00700 | 00700 | 00700 | 00700 | 00700 | 00700 | 00700 | 00700 | 00700 |          |

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<br><br>100 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 | 0 | 0 | 0 | 0 |          |
|   | 7           | 7 | 7 | 7 | 6 | 6 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 6 | 7 | 7 | 7 | 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 | 3 | 3 | 2 | 2 |          |
|   | 2           | 3 | 0 | 5 | 1 | 3 | 1 | 2 | 3 | 3 | 2 | 3 | 5 | 1 | 9 | 1 | 1 | 2 | 1 | 3 | 1 | 1 | 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 | 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 |          |
|   | 2           | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 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 |          |

**RESPIRATORY SYSTEM**

|                              |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |    |
|------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|
| Larynx                       | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Lung                         | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Alveolar/Bronchiolar Adenoma |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | X |   | 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  
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