

Experiment Number: 20523 - 03
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
Metal working fluids (Trim VX)
CAS Number: TRIMVX

Date Report Requested: 10/29/2014
Time Report Requested: 10:15:41
First Dose M/F: 07/20/09 / 07/20/09
Lab: BNW

F1_RE

NTP Study Number: C20523
Lock Date: 06/04/2012
Cage Range: ALL
Date Range: ALL
Reasons For Removal: ALL
Removal Date Range: ALL
Treatment Groups: Include ALL
Study Gender: Both
TDMSE Version: 3.0.2.2_002
PWG Approval Date: NONE

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

ALIMENTARY SYSTEM

Esophagus	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Intestine Large, Cecum Lymphoma Malignant	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Intestine Large, Colon Lymphoma Malignant	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Intestine Large, Rectum Lymphoma Malignant	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Intestine Small, Duodenum Lymphoma Malignant	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Intestine Small, Ileum Lymphoma Malignant	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Intestine Small, Jejunum Lymphoma Malignant	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Liver Hepatocellular Adenoma Lymphoma Malignant	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Mesentery																								
Pancreas Lymphoma Malignant	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+

* .. Total animals with tissue examined microscopically; Total animals with tumor
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Wistar Han Rats Male Control	DAY ON TEST																									males (cont...)
	0730	0739	0722	0729	0733	0733	0731	0730	0730	0730	0730	0730	0730	0730	0730	0730	0730	0730	0730	0730	0730	0730	0730	0730	0730	
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	

Acinus, Adenoma

Salivary Glands
Lymphoma Malignant

Stomach, Forestomach
Lymphoma Malignant

Stomach, Glandular
Lymphoma Malignant

CARDIOVASCULAR SYSTEM

Blood Vessel

Heart
Lymphoma Malignant

ENDOCRINE SYSTEM

Adrenal Cortex
Adenoma
Lymphoma Malignant

Adrenal Medulla
Lymphoma Malignant

Islets, Pancreatic
Adenoma

Parathyroid Gland

+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
+	+	+	M	M	M	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	

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		DAY ON TEST																											
		0730	0739	0779	0770	0773	0777	0777	0777	0777	0777	0777	0777	0777	0777	0777	0777	0777	0777	0777	0777	0777	0777	0777	0777	0777			
WISTAR HAN RATS MALE Control	ANIMAL ID	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	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	0000	0000	0000	
		1234	5678	9012	3456	7890	1234	5678	9012	3456	7890	1234	5678	9012	3456	7890	1234	5678	9012	3456	7890	1234	5678	9012	3456	7890	1234	5678	males (cont...)

Lymphoma Malignant

Pituitary Gland	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Pars Distalis, Adenoma					X				X			X															X
Pars Distalis, Adenoma, Multiple													X														
Pars Distalis, Lymphoma Malignant																											
Pars Intermedia, Adenoma																		X									

Thyroid Gland	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Lymphoma Malignant																											
C-cell, Adenoma								X																	X		

GENERAL BODY SYSTEM

NONE

GENITAL SYSTEM

Epididymis	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Lymphoma Malignant																											
Mesothelioma Malignant																											
Mesothelioma Nos																											

Preputial Gland	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Lymphoma Malignant																											

Prostate	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Lymphoma Malignant																											

Seminal Vesicle	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Lymphoma Malignant																											

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WISTAR HAN RATS MALE Control	DAY ON TEST																									males (cont...)
	0730	0739	0779	0773	0773	0777	0777	0777	0777	0777	0777	0777	0777	0777	0777	0777	0777	0777	0777	0777	0777	0777	0777	0777	0777	
ANIMAL ID	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	
	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	

Testes +
 Mesothelioma Malignant
 Mesothelioma Nos

HEMATOPOIETIC SYSTEM

Bone Marrow +
 Lymphoma Malignant

Lymph Node +
 Lumbar, Hemangioma X
 Lumbar, Lymphoma Malignant
 Pancreatic, Lymphoma Malignant

Lymph Node, Bronchial + + + M + + + + + + + + + + M + + + + M M + + M + M +
 Lymphoma Malignant

Lymph Node, Mandibular +
 Lymphoma Malignant

Lymph Node, Mediastinal +
 Lymphoma Malignant

Lymph Node, Mesenteric +
 Lymphoma Malignant

Spleen +
 Lymphoma Malignant

Thymus + + + + + M +
 Lymphoma Malignant

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

Thymoma Benign X

INTEGUMENTARY SYSTEM

Mammary Gland	M	M	M	M	M	+	M	M	M	M	M	M	M	M	M	M	M	M	M	M	+	+	M	M
Skin	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Epidermis, Keratoacanthoma																								X
Sebaceous Gland, Adenoma																								
Subcutaneous Tissue, Fibroma											X													

MUSCULOSKELETAL SYSTEM

Bone	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Skeletal Muscle																				+				+

NERVOUS SYSTEM

Brain	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Carcinoma, Metastatic, Zymbal'S Gland																								X
Lymphoma Malignant																								
Peripheral Nerve																				+				+
Spinal Cord																				+				+

RESPIRATORY SYSTEM

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

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	0730	0739	0779	0773	0773	0773	0773	0773	0773	0773	0773	0773	0773	0773	0773	0773	0773	0773	0773	0773	0773	0773	0773	0773	0773		
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		
Lung Carcinoma, Metastatic, Zymbal'S Gland Lymphoma Malignant	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	X	
Nose Lymphoma Malignant	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Trachea Lymphoma Malignant	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
SPECIAL SENSES SYSTEM																											
Eye Lymphoma Malignant	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Harderian Gland Lymphoma Malignant	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Lacrimal Gland																											
Zymbal's Gland Carcinoma																										+	X
URINARY SYSTEM																											
Kidney Lymphoma Malignant Renal Tubule, Carcinoma	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	X
Urinary Bladder	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+

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WISTAR HAN RATS MALE	DAY ON TEST	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		7	7	7	7	7	7	7	7	7	5	7	6	6	7	7	7	6	7	7	7	7	7	7	7	7	6
		3	2	2	3	3	3	3	3	3	2	3	2	6	3	3	3	7	3	1	2	2	2	2	3	2	9
Control	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	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	

males
(cont...)

Lymphoma Malignant

SYSTEMIC LESIONS

Multiple Organ	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Lymphoma Malignant																										
Mesothelioma Malignant																										
Mesothelioma Nos																										

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WISTAR HAN RATS MALE	DAY ON TEST																								* TOTALS
	0731	0732	0733	0734	0735	0736	0737	0738	0739	0740	0741	0742	0743	0744	0745	0746	0747	0748	0749	0750	0751	0752	0753	0754	
Control	0026	0027	0028	0029	0030	0031	0032	0033	0034	0035	0036	0037	0038	0039	0040	0041	0042	0043	0044	0045	0046	0047	0048	0049	0050
	0	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 Lymphoma Malignant	+	+	+	+	+	+	+	+	X	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50 1
Intestine Large, Colon Lymphoma Malignant	+	+	+	+	+	+	+	+	X	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50 1
Intestine Large, Rectum Lymphoma Malignant	+	+	+	+	+	+	+	+	X	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50 1
Intestine Small, Duodenum Lymphoma Malignant	+	+	+	+	+	+	+	+	X	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50 1
Intestine Small, Ileum Lymphoma Malignant	+	+	+	+	+	+	+	+	X	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50 1
Intestine Small, Jejunum Lymphoma Malignant	+	+	+	+	+	+	+	+	X	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50 1
Liver Hepatocellular Adenoma Lymphoma Malignant	+	+	+	+	+	X	+	+	+	X	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50 1 1
Mesentery																							+		2
Pancreas Lymphoma Malignant	+	+	+	+	+	+	+	+	X	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50 1

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	0731	0732	0733	0734	0735	0736	0737	0738	0739	0740	0741	0742	0743	0744	0745	0746	0747	0748	0749	0750						
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	
Acinus, Adenoma									X																1	
Salivary Glands Lymphoma Malignant	+	+	+	+	+	+	+	+		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50 1	
Stomach, Forestomach Lymphoma Malignant	+	+	+	+	+	+	+	+		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50 1	
Stomach, Glandular Lymphoma Malignant	+	+	+	+	+	+	+	+		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50 1	
CARDIOVASCULAR SYSTEM																										
Blood Vessel	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
Heart Lymphoma Malignant	+	+	+	+	+	+	+	+		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50 1	
ENDOCRINE SYSTEM																										
Adrenal Cortex Adenoma Lymphoma Malignant	+	+	+	+	+	+	+	+		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50 1 1	
Adrenal Medulla Lymphoma Malignant	+	+	+	+	+	+	+	+		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50 1	
Islets, Pancreatic Adenoma	+	+	+	+	+	+	+	+		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50 5	
Parathyroid Gland	+	+	M	+	+	M	+	M	+	+	+	+	+	+	+	+	+	+	+	M	+	+	+	+	39	

* .. 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: 20523 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (Trim VX)
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014
 Time Report Requested: 10:15:41
 First Dose M/F: 07/20/09 / 07/20/09
 Lab: BNW

WISTAR HAN RATS MALE	DAY ON TEST																								* TOTALS											
	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	0756	0757	0758	0759	0760					
Control	0026	0027	0028	0029	0030	0031	0032	0033	0034	0035	0036	0037	0038	0039	0040	0041	0042	0043	0044	0045	0046	0047	0048	0049	0050	0051	0052	0053	0054	0055	0056	0057	0058	0059	0060	
Lymphoma Malignant									X																											1
Pituitary Gland	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
Pars Distalis, Adenoma				X	X		X	X				X			X	X																	X	X	13	
Pars Distalis, Adenoma, Multiple																																			1	
Pars Distalis, Lymphoma Malignant									X																										1	
Pars Intermedia, Adenoma																																			1	
Thyroid Gland	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50		
Lymphoma Malignant									X																										1	
C-cell, Adenoma														X																					3	
GENERAL BODY SYSTEM																																				
NONE																																				
GENITAL SYSTEM																																				
Epididymis	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50		
Lymphoma Malignant									X																										1	
Mesothelioma Malignant																																				1
Mesothelioma Nos																																				1
Preputial Gland	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49	
Lymphoma Malignant									X																											1
Prostate	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
Lymphoma Malignant									X																											1
Seminal Vesicle	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
Lymphoma Malignant									X																											1

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

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

Experiment Number: 20523 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (Trim VX)
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014
 Time Report Requested: 10:15:41
 First Dose M/F: 07/20/09 / 07/20/09
 Lab: BNW

Wistar Han Rats Male Control	DAY ON TEST																								* TOTALS		
	0731	0732	0733	0734	0735	0736	0737	0738	0739	0740	0741	0742	0743	0744	0745	0746	0747	0748	0749	0750	0751	0752	0753	0754			
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			
Testes	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50		
Mesothelioma Malignant																							X		1		
Mesothelioma Nos																							X		1		
HEMATOPOIETIC SYSTEM																											
Bone Marrow	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50		
Lymphoma Malignant													X												1		
Lymph Node	+																								11		
Lumbar, Hemangioma																									1		
Lumbar, Lymphoma Malignant													X												1		
Pancreatic, Lymphoma Malignant													X												1		
Lymph Node, Bronchial	+	+	M	+	+	M	+	+	+	+	+	+	+	+	+	+	+	+	+	+	M	M	+	M	+	39	
Lymphoma Malignant													X												1		
Lymph Node, Mandibular	+	+	+	+	+	+	+	M	+	M	+	+	+	+	+	+	+	+	+	+	+	+	+	+	46		
Lymphoma Malignant													X												1		
Lymph Node, Mediastinal	+	I	+	+	+	+	M	+	+	+	+	+	+	+	+	+	I	+	M	+	+	+	+	+	43		
Lymphoma Malignant													X												1		
Lymph Node, Mesenteric	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50		
Lymphoma Malignant													X												1		
Spleen	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50		
Lymphoma Malignant													X												1		
Thymus	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	48		
Lymphoma Malignant													X												1		

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

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

Experiment Number: 20523 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (Trim VX)
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014
 Time Report Requested: 10:15:41
 First Dose M/F: 07/20/09 / 07/20/09
 Lab: BNW

DAY ON TEST	WISTAR HAN RATS MALE																				* TOTALS				
	0731	0732	0733	0734	0735	0736	0737	0738	0739	0740	0741	0742	0743	0744	0745	0746	0747	0748	0749	0750					
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	0030

Thymoma Benign

X X

3

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

4

Skin

+ +

50

Epidermis, Keratoacanthoma

1

Sebaceous Gland, Adenoma

X

1

Subcutaneous Tissue, Fibroma

1

MUSCULOSKELETAL SYSTEM

Bone

+ +

50

Skeletal Muscle

+ +

4

NERVOUS SYSTEM

Brain

+ +

50

Carcinoma, Metastatic, Zymbal'S Gland

1

Lymphoma Malignant

X

1

Peripheral Nerve

+ +

4

Spinal Cord

+ +

4

RESPIRATORY SYSTEM

Larynx

+ +

50

Lymphoma Malignant

X

1

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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: 20523 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (Trim VX)
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014
 Time Report Requested: 10:15:41
 First Dose M/F: 07/20/09 / 07/20/09
 Lab: BNW

| WISTAR HAN RATS MALE
Control | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | * TOTALS | | |
|---|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|--------------|--|--|
| | 0731 | 0739 | 0779 | 0773 | 0773 | 0772 | 0772 | 0772 | 0772 | 0772 | 0772 | 0772 | 0772 | 0772 | 0772 | 0772 | 0772 | 0772 | 0772 | 0772 | 0772 | 0772 | 0772 | 0772 | | | |
| ANIMAL ID | 0026 | 0007 | 0008 | 0009 | 0000 | 0001 | 0002 | 0003 | 0004 | 0005 | 0006 | 0007 | 0008 | 0009 | 0000 | 0001 | 0002 | 0003 | 0004 | 0005 | 0006 | 0007 | 0008 | 0009 | | | |
| Lung
Carcinoma, Metastatic, Zymbal'S Gland
Lymphoma Malignant | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50
1
1 | | |
| Nose
Lymphoma Malignant | + | + | + | + | + | + | + | + | X | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50
1 | | |
| Trachea
Lymphoma Malignant | + | + | + | + | + | + | + | + | X | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50
1 | | |
| SPECIAL SENSES SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Eye
Lymphoma Malignant | + | + | + | + | + | + | + | + | X | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50
1 | | |
| Harderian Gland
Lymphoma Malignant | + | + | + | + | + | + | + | + | X | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50
1 | | |
| Lacrimal Gland | | | | | | | | | | + | | | | | | | | | | | | | | | 1 | | |
| Zymbal's Gland
Carcinoma | | | | | | | | | | | | | | | | | | | | | | | | | 1
1 | | |
| URINARY SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Kidney
Lymphoma Malignant
Renal Tubule, Carcinoma | + | + | + | + | + | + | + | + | X | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50
1
1 | | |
| Urinary Bladder | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 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: 20523 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (Trim VX)
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014
 Time Report Requested: 10:15:41
 First Dose M/F: 07/20/09 / 07/20/09
 Lab: BNW

| Wistar Han Rats Male
Control | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | | * TOTALS |
|---------------------------------|-------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 07
31 | 07
29 | 07
29 | 07
31 | 07
30 | 07
29 | 07
29 | 07
22 | 07
22 | 07
22 | 07
22 | 07
22 | 07
22 | 07
22 | 07
22 | 07
22 | 07
22 | 07
22 | 07
22 | 07
22 | 07
22 | 07
22 | 07
22 | 07
22 | 07
22 | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | |
| Lymphoma Malignant | | | | | | | | | X | | | | | | | | | | | | | | | | | 1 |

SYSTEMIC LESIONS

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

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

Experiment Number: 20523 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (Trim VX)
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014
 Time Report Requested: 10:15:41
 First Dose M/F: 07/20/09 / 07/20/09
 Lab: BNW

| Wistar Han Rats Male
10 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 | 0 | ANIMAL ID | males
(cont...) |
|----------------------------------|-------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----------|--------------------|
| | | 7 | 7 | 7 | 7 | 7 | 6 | 7 | 7 | 7 | 7 | 6 | 7 | 5 | 7 | 7 | 7 | 7 | 7 | 6 | 7 | 7 | 7 | 5 | | |
| | | 3 | 3 | 3 | 3 | 2 | 1 | 9 | 2 | 3 | 3 | 3 | 8 | 3 | 3 | 0 | 2 | 0 | 2 | 7 | 2 | 2 | 2 | 3 | 0 | |
| | | 1 | 0 | 0 | 1 | 9 | 5 | 0 | 9 | 1 | 0 | 1 | 4 | 0 | 9 | 0 | 1 | 2 | 9 | 5 | 9 | 3 | 9 | 0 | 0 | |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 0 | |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 0 | |
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 0 | |

ALIMENTARY SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | |
|---------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Esophagus | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Large, Cecum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Large, Colon | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| 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: 20523 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (Trim VX)
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014
 Time Report Requested: 10:15:41
 First Dose M/F: 07/20/09 / 07/20/09
 Lab: BNW

| WISTAR HAN RATS MALE
10 mg/m3 | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | | ANIMAL ID | males
(cont...) | |
|----------------------------------|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----------|--------------------|------|
| | 0731 | 0733 | 0730 | 0731 | 0732 | 0735 | 0736 | 0737 | 0738 | 0739 | 0740 | 0741 | 0742 | 0743 | 0744 | 0745 | 0746 | 0747 | 0748 | 0749 | 0750 | 0751 | 0752 | 0753 | 0754 | | | 0755 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 002001 | |
| | 7 | 7 | 7 | 7 | 7 | 7 | 6 | 7 | 7 | 7 | 7 | 6 | 7 | 5 | 7 | 7 | 7 | 7 | 7 | 7 | 6 | 7 | 7 | 7 | 7 | 5 | 002002 | |
| | 3 | 3 | 3 | 3 | 2 | 1 | 9 | 2 | 3 | 3 | 3 | 8 | 3 | 8 | 3 | 3 | 0 | 2 | 0 | 2 | 0 | 2 | 2 | 2 | 2 | 2 | 002003 | |
| | 1 | 0 | 0 | 1 | 9 | 5 | 0 | 9 | 1 | 0 | 1 | 4 | 0 | 9 | 0 | 1 | 2 | 9 | 5 | 9 | 3 | 9 | 9 | 9 | 0 | 1 | 002004 | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 002005 | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 002006 | |
| | 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 | 002007 | |
| | 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 | 002008 | |
| | 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 | 6 | 002009 | |

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

ENDOCRINE SYSTEM

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

GENERAL BODY SYSTEM

NONE

* .. 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: 20523 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (Trim VX)
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014
 Time Report Requested: 10:15:41
 First Dose M/F: 07/20/09 / 07/20/09
 Lab: BNW

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

GENITAL SYSTEM

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

HEMATOPOIETIC SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bone Marrow | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Lymph Node | | | | | | | | | | + | + | | | | | | | | | | | | + |
| Lymph Node, Bronchial
Lymphoma Malignant | + | + | + | M | + | + | + | + | + | + | + | + | M | + | + | + | + | + | + | + | + | + | + |
| Lymph Node, Mandibular | + | + | M | + | + | + | + | + | + | + | + | + | + | + | + | M | + | + | + | + | + | + | + |
| Lymph Node, Mediastinal
Lymphoma Malignant | + | + | + | + | + | + | + | + | + | + | M | + | + | + | + | + | + | + | + | + | + | + | + |
| Lymph Node, Mesenteric
Hemangiosarcoma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 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: 20523 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (Trim VX)
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014
 Time Report Requested: 10:15:41
 First Dose M/F: 07/20/09 / 07/20/09
 Lab: BNW

| WISTAR HAN RATS MALE
10 mg/m3 | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | | ANIMAL ID | males
(cont...) |
|----------------------------------|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----------|--------------------|
| | 0731 | 0733 | 0733 | 0733 | 0732 | 0731 | 0739 | 0729 | 0732 | 0733 | 0733 | 0738 | 0733 | 0738 | 0733 | 0733 | 0730 | 0737 | 0737 | 0736 | 0737 | 0737 | 0737 | 0735 | 0737 | | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 0 | 0 | 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 | |
| | 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 | 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 | | |

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Spleen | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Thymus | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Thymoma Benign | | | | | X | | | | | | | | | X | | | | | | | | | | | |

INTEGUMENTARY SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mammary Gland | M | M | M | M | M | M | M | M | M | M | M | + | M | + | M | + | M | M | + | M | M | M | M | M | M |
| Skin | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Epidermis, Keratoacanthoma | | | | | | | | | | | | | | | | | | | | | | | | | |
| Epidermis, Squamous Cell Papilloma | | | | | | | | | | | | | | | X | | | | | | | | | | |
| Subcutaneous Tissue, Fibroma | | | | | | | | | | | | | | | | | | | | | X | | | | |
| Subcutaneous Tissue, Hemangiosarcoma | | | | | | | | | | | | | | | | | | | | | | | | | |
| Subcutaneous Tissue, Schwannoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | X |

MUSCULOSKELETAL SYSTEM

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

NERVOUS SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Brain | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Granular Cell Tumor Benign | | | | X | | | | | | | | | | | | | | | | | | | | | |
| Peripheral Nerve | | | | | | | | | | | | | | | | | | | | | | | | | |

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

Experiment Number: 20523 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (Trim VX)
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014
 Time Report Requested: 10:15:41
 First Dose M/F: 07/20/09 / 07/20/09
 Lab: BNW

| WISTAR HAN RATS MALE
10 mg/m3 | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | | males
(cont...) |
|----------------------------------|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|--------------------|
| | 0731 | 0733 | 0733 | 0733 | 0732 | 0731 | 0730 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | |
| ANIMAL ID | 0020 | 0020 | 0020 | 0020 | 0020 | 0020 | 0020 | 0020 | 0020 | 0020 | 0020 | 0020 | 0020 | 0020 | 0020 | 0020 | 0020 | 0020 | 0020 | 0020 | 0020 | 0020 | 0020 | 0020 | 0020 | 0020 |
| | 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 | |

Spinal Cord

+ +

RESPIRATORY SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Larynx | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Lung
Lymphoma Malignant | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Nose | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Trachea | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |

SPECIAL SENSES SYSTEM

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

URINARY SYSTEM

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

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: 20523 - 03
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
Metal working fluids (Trim VX)
CAS Number: TRIMVX

Date Report Requested: 10/29/2014
Time Report Requested: 10:15:41
First Dose M/F: 07/20/09 / 07/20/09
Lab: BNW

| WISTAR HAN RATS MALE | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | * TOTALS |
|----------------------|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----------|
| | 0730 | 0731 | 0730 | 0731 | 0730 | 0731 | 0730 | 0731 | 0730 | 0731 | 0730 | 0731 | 0730 | 0731 | 0730 | 0731 | 0730 | 0731 | 0730 | 0731 | 0730 | 0731 | 0730 | 0731 | |
| 10 mg/m3 | 0022 | 0022 | 0022 | 0022 | 0022 | 0022 | 0022 | 0022 | 0022 | 0022 | 0022 | 0022 | 0022 | 0022 | 0022 | 0022 | 0022 | 0022 | 0022 | 0022 | 0022 | 0022 | 0022 | 0022 | |
| | 67 | 78 | 89 | 00 | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 00 | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 00 | |

ALIMENTARY SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | |
|---------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|
| Esophagus | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Intestine Large, Cecum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Intestine Large, Colon | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Intestine Large, Rectum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Intestine Small, Duodenum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Intestine Small, Ileum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Intestine Small, Jejunum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Liver | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Hepatocellular Adenoma | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Mesentery | | | | | | | | | | | | | | | | | | | | | | | | 2 |
| 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: 20523 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (Trim VX)
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014
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 First Dose M/F: 07/20/09 / 07/20/09
 Lab: BNW

| WISTAR HAN RATS MALE
10 mg/m3 | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | * TOTALS | |
|---|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------------------|----------|--|
| | 0730 | 0731 | 0730 | 0731 | 0730 | 0731 | 0730 | 0731 | 0730 | 0731 | 0730 | 0731 | 0730 | 0731 | 0730 | 0731 | 0730 | 0731 | 0730 | 0731 | 0730 | 0731 | 0730 | 0731 | | |
| ANIMAL ID | 002226 | 00002 | 00000 | 00000 | 00000 | 00000 | 00000 | 00000 | 00000 | 00000 | 00000 | 00000 | 00000 | 00000 | 00000 | 00000 | 00000 | 00000 | 00000 | 00000 | 00000 | 00000 | 00000 | 00000 | | |
| Blood Vessel | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| Heart | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| ENDOCRINE SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Adrenal Cortex | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| Adrenal Medulla
Pheochromocytoma Benign | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50
2 | | |
| Islets, Pancreatic
Adenoma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50
1 | | |
| Parathyroid Gland | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | M | + | M | + | + | + | + | + | 44 | | |
| Pituitary Gland
Pars Distalis, Adenoma
Pars Distalis, Adenoma, Multiple
Pars Intermedia, Adenoma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50
12
1
1 | | |
| Thyroid Gland
C-cell, Adenoma
Follicle, Adenoma
Follicle, Carcinoma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50
5
1
1 | | |
| GENERAL BODY SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NONE | | | | | | | | | | | | | | | | | | | | | | | | | | |

* .. 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: 20523 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (Trim VX)
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014
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 First Dose M/F: 07/20/09 / 07/20/09
 Lab: BNW

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

GENITAL SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|
| Epididymis | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Preputial Gland | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Prostate | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Seminal Vesicle | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Testes | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Mesothelioma Malignant | | | | | | | | | | | | | | | | X | | | | | | | | 1 |
| Interstitial Cell, Adenoma | | | | | | | | | | | | | | | | | | | | | | | | 1 |

HEMATOPOIETIC SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|
| Bone Marrow | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Lymph Node | + | + | | | | | | | | | | | | | | | | | | | | | | 7 |
| Lymph Node, Bronchial
Lymphoma Malignant | + | + | + | + | I | + | + | + | + | + | + | + | + | + | X | + | + | M | M | M | M | + | + | 43 |
| | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Lymph Node, Mandibular | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | M | + | + | + | 46 |
| Lymph Node, Mediastinal
Lymphoma Malignant | M | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 48 |
| | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Lymph Node, Mesenteric
Hemangiosarcoma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 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: 20523 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (Trim VX)
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014
 Time Report Requested: 10:15:41
 First Dose M/F: 07/20/09 / 07/20/09
 Lab: BNW

| WISTAR HAN RATS MALE
10 mg/m3 | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | * TOTALS |
|---|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----------|
| | 0730 | 0731 | 0732 | 0733 | 0734 | 0735 | 0736 | 0737 | 0738 | 0739 | 0740 | 0741 | 0742 | 0743 | 0744 | 0745 | 0746 | 0747 | 0748 | 0749 | 0750 | 0751 | 0752 | | |
| ANIMAL ID | 0022 | 0023 | 0024 | 0025 | 0026 | 0027 | 0028 | 0029 | 0030 | 0031 | 0032 | 0033 | 0034 | 0035 | 0036 | 0037 | 0038 | 0039 | 0040 | 0041 | 0042 | 0043 | 0044 | 0045 | |
| Spleen | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Thymus | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 49 | |
| Thymoma Benign | | | | X | | | | | | | | | | | | | | | | | | | | 3 | |
| 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 | 5 | |
| Skin | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Epidermis, Keratoacanthoma | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| Epidermis, Squamous Cell Papilloma | | | | | | | | | | | | | | | | | | | | | | | | 2 | |
| Subcutaneous Tissue, Fibroma | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| Subcutaneous Tissue, Hemangiosarcoma | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| Subcutaneous Tissue, Schwannoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| MUSCULOSKELETAL SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | |
| Bone | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Skeletal Muscle | | | | | | | | | | | | | | | | | | | | | | | | 4 | |
| Mesothelioma Malignant | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| Rhabdomyosarcoma | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| NERVOUS SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | |
| Brain | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Granular Cell Tumor Benign | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| 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: 20523 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (Trim VX)
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014
 Time Report Requested: 10:15:41
 First Dose M/F: 07/20/09 / 07/20/09
 Lab: BNW

| WISTAR HAN RATS MALE
10 mg/m3 | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | * TOTALS |
|----------------------------------|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------|
| | 0730 | 0731 | 0730 | 0731 | 0730 | 0731 | 0730 | 0731 | 0730 | 0731 | 0730 | 0731 | 0730 | 0731 | 0730 | 0731 | 0730 | 0731 | 0730 | 0731 | 0730 | 0731 | 0730 | 0731 | |
| ANIMAL ID | 00226 | 00227 | 00228 | 00229 | 00230 | 00231 | 00232 | 00233 | 00234 | 00235 | 00236 | 00237 | 00238 | 00239 | 00240 | 00241 | 00242 | 00243 | 00244 | 00245 | 00246 | 00247 | 00248 | 00249 | |
| Spinal Cord | | | | | | | | | | | | | | | | | | | | | | | | 2 | |
| RESPIRATORY SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | |
| Larynx | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Lung | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Lymphoma Malignant | | | | | | | | | | | | | | | X | | | | | | | | | 1 | |
| Nose | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Trachea | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| SPECIAL SENSES SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | |
| Eye | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Harderian Gland | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| URINARY SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | |
| Kidney | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Urinary Bladder | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| 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
 I .. Insufficient tissue

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

Experiment Number: 20523 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (Trim VX)
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014
 Time Report Requested: 10:15:41
 First Dose M/F: 07/20/09 / 07/20/09
 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 | | | |
| | 30 mg/m3 | 5 | 6 | 7 | 7 | 6 | 7 | 5 | 7 | 7 | 4 | 7 | 7 | 5 | 7 | 7 | 7 | 7 | 6 | 7 | 7 | | 6 | 7 | 7 | | |
| | ANIMAL ID | 4 | 6 | 3 | 2 | 4 | 3 | 5 | 3 | 3 | 5 | 2 | 2 | 5 | 3 | 2 | 3 | 0 | 3 | 9 | 2 | 3 | 3 | 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 |
| | | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 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 | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Large, Colon | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Large, Rectum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Small, Duodenum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Small, Ileum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Small, Jejunum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Liver | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Mesentery | | | | | + | | | | | | | | | | | | | | | | | | | | | |
| Pancreas | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Salivary Glands | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Stomach, Forestomach | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Stomach, Glandular | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |

CARDIOVASCULAR SYSTEM

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

* .. 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: 20523 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (Trim VX)
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014
 Time Report Requested: 10:15:41
 First Dose M/F: 07/20/09 / 07/20/09
 Lab: BNW

| | DAY ON TEST | ANIMAL ID | | | | | | | | | | | | | | | | | | | | males
(cont...) | |
|---|-------------|-----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--------------------|-----|
| | | 054 | 066 | 073 | 072 | 064 | 073 | 053 | 073 | 043 | 072 | 075 | 073 | 023 | 023 | 030 | 037 | 037 | 066 | 073 | 067 | | 077 |
| WISTAR HAN RATS MALE | | | | | | | | | | | | | | | | | | | | | | | |
| 30 mg/m3 | | | | | | | | | | | | | | | | | | | | | | | |
| | | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | |
| | | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | |
| | | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 01 | 01 | 01 | 01 | 01 | 01 | 01 | 01 | 02 | 02 | 02 | 02 | |
| | | 12 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 00 | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 00 | 01 | |
| Heart
Schwannoma Malignant, Metastatic, Skeletal Muscle | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | | |
| | | | | | | | | | | | | | | | | | | | | | | X | |
| ENDOCRINE SYSTEM | | | | | | | | | | | | | | | | | | | | | | | |
| Adrenal Cortex | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| Adrenal Medulla
Pheochromocytoma Benign
Schwannoma Malignant, Metastatic, Skeletal Muscle | | + | + | M | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | X | X | |
| Islets, Pancreatic | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| Parathyroid Gland | | M | + | + | + | + | + | + | + | + | + | + | + | M | + | + | + | + | + | + | M | + | |
| Pituitary Gland
Pars Distalis, Adenoma
Pars Distalis, Adenoma, Multiple
Pars Intermedia, Adenoma
Pars Nervosa, Granular Cell Tumor Benign | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| | | X | X | | X | | | | | X | | | | | | | | | | | X | X | |
| | | | | | | | | | | | | | | | | X | | | | | | | |
| Thyroid Gland
C-cell, Adenoma
Follicle, Adenoma
Follicle, Carcinoma | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| | | | | | | | | | X | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | X | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | |
| GENERAL BODY SYSTEM | | | | | | | | | | | | | | | | | | | | | | | |
| NONE | | | | | | | | | | | | | | | | | | | | | | | |

* .. 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: 20523 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (Trim VX)
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014
 Time Report Requested: 10:15:41
 First Dose M/F: 07/20/09 / 07/20/09
 Lab: BNW

| WISTAR HAN RATS MALE | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | | males
(cont...) |
|----------------------|-------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--------------------|
| | 054 | 066 | 073 | 072 | 064 | 073 | 053 | 073 | 073 | 043 | 072 | 075 | 077 | 077 | 077 | 077 | 066 | 077 | 077 | 066 | 077 | 067 | 077 | | | |
| 30 mg/m3 | 004 | 004 | 004 | 004 | 004 | 004 | 004 | 004 | 004 | 004 | 004 | 004 | 004 | 004 | 004 | 004 | 004 | 004 | 004 | 004 | 004 | 004 | 004 | | | |
| ANIMAL ID | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | | | |

GENITAL SYSTEM

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

HEMATOPOIETIC SYSTEM

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

* .. 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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 Test Type: CHRONIC
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 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (Trim VX)
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014
 Time Report Requested: 10:15:41
 First Dose M/F: 07/20/09 / 07/20/09
 Lab: BNW

| WISTAR HAN RATS MALE
30 mg/m3 | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | ANIMAL ID | males
(cont...) | |
|---|-------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----------|--------------------|-----|
| | 054 | 066 | 073 | 072 | 064 | 073 | 053 | 073 | 073 | 043 | 077 | 077 | 055 | 077 | 077 | 032 | 033 | 000 | 039 | 033 | 033 | 022 | 022 | 006 | | | 077 |
| Thymus | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| Schwannoma Malignant, Metastatic, Skeletal Muscle | | | | | | | | | | | | | | | | | | | | | | | | | | X | |
| Thymoma Benign | | X | | | | | | | | | | | | | X | X | X | | | | | | | | | | |
| INTEGUMENTARY SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mammary Gland | M | M | M | M | M | M | M | M | M | M | M | M | M | M | M | M | M | M | M | M | M | M | M | M | M | M | |
| Skin | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| Subcutaneous Tissue, Fibroma | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MUSCULOSKELETAL SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Bone | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| Skeletal Muscle | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Schwannoma Malignant | | | | | + | | + | | | + | | | | | | | | | | | | | | | | + | |
| NERVOUS SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Brain | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| Oligodendroglioma Benign | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Peripheral Nerve | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Schwannoma Malignant | | | | | | + | | + | | | + | | | | + | | | | | | | | | | | + | |
| 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: 20523 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (Trim VX)
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014
 Time Report Requested: 10:15:41
 First Dose M/F: 07/20/09 / 07/20/09
 Lab: BNW

| WISTAR HAN RATS MALE
30 mg/m3 | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | | ANIMAL ID | males
(cont...) |
|---|-------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----------|--------------------|
| | 054 | 066 | 073 | 072 | 064 | 073 | 053 | 073 | 073 | 044 | 077 | 077 | 055 | 077 | 077 | 077 | 066 | 077 | 077 | 066 | 077 | 066 | 077 | 077 | 077 | | |
| | 004 | 000 | 000 | 000 | 000 | 000 | 000 | 000 | 000 | 000 | 000 | 000 | 000 | 000 | 000 | 000 | 000 | 000 | 000 | 000 | 000 | 000 | 000 | 000 | 000 | 004 | |
| Larynx | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | | |
| Lung
Schwannoma Malignant, Metastatic, Skeletal Muscle | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | | X |
| Nose | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | | |
| Trachea | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | | |
| SPECIAL SENSES SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Eye | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | | |
| Harderian Gland | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | | |
| URINARY SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Kidney | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | | |
| Urinary Bladder | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | | |
| SYSTEMIC LESIONS | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Multiple Organ
Mesothelioma Nos | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | | 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: 20523 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (Trim VX)
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014
 Time Report Requested: 10:15:41
 First Dose M/F: 07/20/09 / 07/20/09
 Lab: BNW

| WISTAR HAN RATS MALE | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | | * TOTALS |
|----------------------|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------|
| | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | |
| 30 mg/m3 | 00426 | 00426 | 00426 | 00426 | 00426 | 00426 | 00426 | 00426 | 00426 | 00426 | 00426 | 00426 | 00426 | 00426 | 00426 | 00426 | 00426 | 00426 | 00426 | 00426 | 00426 | 00426 | 00426 | 00426 | 00426 | 50 |
| ANIMAL ID | 00426 | 00426 | 00426 | 00426 | 00426 | 00426 | 00426 | 00426 | 00426 | 00426 | 00426 | 00426 | 00426 | 00426 | 00426 | 00426 | 00426 | 00426 | 00426 | 00426 | 00426 | 00426 | 00426 | 00426 | 00426 | 50 |

ALIMENTARY SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|
| Esophagus | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Intestine Large, Cecum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Intestine Large, Colon | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Intestine Large, Rectum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Intestine Small, Duodenum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Intestine Small, Ileum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Intestine Small, Jejunum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Liver | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Mesentery | | | | | | | | | | | | | | | | | | | | | | | | | + | 3 |
| Pancreas | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Salivary Glands | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Stomach, Forestomach | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Stomach, Glandular | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |

CARDIOVASCULAR SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|
| Blood Vessel | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 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: 20523 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (Trim VX)
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014
 Time Report Requested: 10:15:41
 First Dose M/F: 07/20/09 / 07/20/09
 Lab: BNW

| WISTAR HAN RATS MALE | DAY ON TEST | | | | | | | | | | | | | | | | | | | | * TOTALS | |
|---|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------|-------------------------|
| | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | | 0729 |
| 30 mg/m3 | 00426 | 00426 | 00426 | 00426 | 00426 | 00426 | 00426 | 00426 | 00426 | 00426 | 00426 | 00426 | 00426 | 00426 | 00426 | 00426 | 00426 | 00426 | 00426 | 00426 | 00426 | 50 |
| Heart
Schwannoma Malignant, Metastatic, Skeletal Muscle | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 1 |
| ENDOCRINE SYSTEM | | | | | | | | | | | | | | | | | | | | | | |
| Adrenal Cortex | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Adrenal Medulla
Pheochromocytoma Benign
Schwannoma Malignant, Metastatic, Skeletal Muscle | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 49
1
1 |
| Islets, Pancreatic | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Parathyroid Gland | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | M | + | + | + | + | 46 |
| Pituitary Gland
Pars Distalis, Adenoma
Pars Distalis, Adenoma, Multiple
Pars Intermedia, Adenoma
Pars Nervosa, Granular Cell Tumor Benign | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50
14
1
2
1 |
| Thyroid Gland
C-cell, Adenoma
Follicle, Adenoma
Follicle, Carcinoma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50
2
3
1 |
| GENERAL BODY SYSTEM | | | | | | | | | | | | | | | | | | | | | | |
| NONE | | | | | | | | | | | | | | | | | | | | | | |

* .. 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: 20523 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (Trim VX)
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014
 Time Report Requested: 10:15:41
 First Dose M/F: 07/20/09 / 07/20/09
 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 | 0 | 0 | 0 | 0 | 0 | 0 | |
|-----------------------------|-----------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WISTAR HAN RATS MALE | 7 | 7 | 6 | 7 | 7 | 7 | 2 | 7 | 7 | 6 | 7 | 2 | 7 | 7 | 7 | 5 | 7 | 7 | 7 | 7 | 7 | 2 | 7 | 2 | 7 | 6 | 3 | 3 | 3 | 2 | 7 | 7 | 7 | 2 | 7 | 6 | 6 |
| 30 mg/m3 | 9 | 9 | 6 | 9 | 1 | 9 | 2 | 9 | 1 | 9 | 9 | 0 | 1 | 1 | 0 | 9 | 1 | 0 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 9 |
| ANIMAL ID | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | |
| | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 3 | |
| | 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 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 0 | |
| | * TOTALS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

GENITAL SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|----|
| Epididymis | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Mesothelioma Nos | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| Preputial Gland | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Prostate | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Seminal Vesicle | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Testes | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Interstitial Cell, Adenoma | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 | |

HEMATOPOIETIC SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|----|
| Bone Marrow | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Lymph Node | | | + | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 7 |
| Lymph Node, Bronchial | I | + | + | + | + | + | + | + | + | + | + | + | + | M | M | M | + | + | + | M | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 42 | |
| Lymph Node, Mandibular | + | + | + | M | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | M | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 46 |
| Lymph Node, Mediastinal | + | + | + | + | + | + | + | M | + | M | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | M | + | + | + | + | 44 |
| Lymph Node, Mesenteric | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Hemangiosarcoma | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Spleen | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 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: 20523 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (Trim VX)
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014
 Time Report Requested: 10:15:41
 First Dose M/F: 07/20/09 / 07/20/09
 Lab: BNW

| WISTAR HAN RATS MALE
30 mg/m3 | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | * TOTALS |
|----------------------------------|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------|
| | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | |
| ANIMAL ID | 00426 | 00427 | 00428 | 00429 | 00430 | 00431 | 00432 | 00433 | 00434 | 00435 | 00436 | 00437 | 00438 | 00439 | 00440 | 00441 | 00442 | 00443 | 00444 | 00445 | 00446 | 00447 | 00448 | 00449 | 00450 |

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|
| Thymus | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Schwannoma Malignant, Metastatic, Skeletal Muscle | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Thymoma Benign | | | | | | | | | | | | | | | | | | | | | | | | | 4 |

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 | 1 |
| Skin | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Subcutaneous Tissue, Fibroma | | | | | | | | | X | | | | | | | | | | | | | | | | 1 |

MUSCULOSKELETAL SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|
| Bone | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Skeletal Muscle | | | | | | | | | | | | | | | | | | | | | | | | | 8 |
| Schwannoma Malignant | | | | + | | | | | | + | | | | | | | | | | | | | | | 1 |

NERVOUS SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|--------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|
| Brain | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Oligodendroglioma Benign | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Peripheral Nerve | | | | | | | | | | | | | | | | | | | | | | | | | 8 |
| Schwannoma Malignant | | | | + | | | | | | + | | | | | | | | | | | | | | | 1 |
| Spinal Cord | | | | | | | | | | | | | | | | | | | | | | | | | 7 |
| | | | | + | | | | | | + | | | | | | | | | | | | | | | |

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: 20523 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (Trim VX)
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014
 Time Report Requested: 10:15:41
 First Dose M/F: 07/20/09 / 07/20/09
 Lab: BNW

| WISTAR HAN RATS MALE | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | * TOTALS | |
|---|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----------|--|
| | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | 0729 | | |
| 30 mg/m3 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | ANIMAL ID | | | | | | | | | | | | | | | | | | | | | | | | | |
| Larynx | 0042 | 0047 | 0048 | 0049 | 0050 | 0051 | 0052 | 0053 | 0054 | 0055 | 0056 | 0057 | 0058 | 0059 | 0060 | 0061 | 0062 | 0063 | 0064 | 0065 | 0066 | 0067 | 0068 | 0069 | 50 | |
| Lung | 0042 | 0047 | 0048 | 0049 | 0050 | 0051 | 0052 | 0053 | 0054 | 0055 | 0056 | 0057 | 0058 | 0059 | 0060 | 0061 | 0062 | 0063 | 0064 | 0065 | 0066 | 0067 | 0068 | 0069 | 50 | |
| Schwannoma Malignant, Metastatic, Skeletal Muscle | | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| Nose | 0042 | 0047 | 0048 | 0049 | 0050 | 0051 | 0052 | 0053 | 0054 | 0055 | 0056 | 0057 | 0058 | 0059 | 0060 | 0061 | 0062 | 0063 | 0064 | 0065 | 0066 | 0067 | 0068 | 0069 | 50 | |
| Trachea | 0042 | 0047 | 0048 | 0049 | 0050 | 0051 | 0052 | 0053 | 0054 | 0055 | 0056 | 0057 | 0058 | 0059 | 0060 | 0061 | 0062 | 0063 | 0064 | 0065 | 0066 | 0067 | 0068 | 0069 | 50 | |
| SPECIAL SENSES SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Eye | 0042 | 0047 | 0048 | 0049 | 0050 | 0051 | 0052 | 0053 | 0054 | 0055 | 0056 | 0057 | 0058 | 0059 | 0060 | 0061 | 0062 | 0063 | 0064 | 0065 | 0066 | 0067 | 0068 | 0069 | 50 | |
| Harderian Gland | 0042 | 0047 | 0048 | 0049 | 0050 | 0051 | 0052 | 0053 | 0054 | 0055 | 0056 | 0057 | 0058 | 0059 | 0060 | 0061 | 0062 | 0063 | 0064 | 0065 | 0066 | 0067 | 0068 | 0069 | 50 | |
| URINARY SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Kidney | 0042 | 0047 | 0048 | 0049 | 0050 | 0051 | 0052 | 0053 | 0054 | 0055 | 0056 | 0057 | 0058 | 0059 | 0060 | 0061 | 0062 | 0063 | 0064 | 0065 | 0066 | 0067 | 0068 | 0069 | 50 | |
| Urinary Bladder | 0042 | 0047 | 0048 | 0049 | 0050 | 0051 | 0052 | 0053 | 0054 | 0055 | 0056 | 0057 | 0058 | 0059 | 0060 | 0061 | 0062 | 0063 | 0064 | 0065 | 0066 | 0067 | 0068 | 0069 | 50 | |
| SYSTEMIC LESIONS | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Multiple Organ | 0042 | 0047 | 0048 | 0049 | 0050 | 0051 | 0052 | 0053 | 0054 | 0055 | 0056 | 0057 | 0058 | 0059 | 0060 | 0061 | 0062 | 0063 | 0064 | 0065 | 0066 | 0067 | 0068 | 0069 | 50 | |
| Mesothelioma Nos | | | | | | | | | | | | | | | | | | | | | | | | | 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: 20523 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (Trim VX)
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014
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 First Dose M/F: 07/20/09 / 07/20/09
 Lab: BNW

| WISTAR HAN RATS MALE | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | ANIMAL ID | males
(cont...) |
|----------------------|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----------|--------------------|
| | 0730 | 0730 | 0730 | 0730 | 0731 | 0732 | 0733 | 0734 | 0735 | 0736 | 0737 | 0738 | 0739 | 0740 | 0741 | 0742 | 0743 | 0744 | 0745 | 0746 | 0747 | 0748 | | |
| 100 mg/m3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 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 | 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 |

| | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|--|
| Stomach, Forestomach Lymphoma Malignant | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| Squamous Cell Papilloma | | | | | | | | | | | | | | | | | | | | | X | | | |
| Stomach, Glandular Lymphoma Malignant | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |

CARDIOVASCULAR SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | |
|--------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Blood Vessel | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Heart Lymphoma Malignant | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |

ENDOCRINE SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | |
|--|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Adrenal Cortex Carcinoma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | X | X | + | + | + | + | + | + | + |
| Adrenal Medulla Pheochromocytoma Malignant | + | + | + | + | X | + | + | + | + | + | + | + | + | + | + | M | + | + | + | + | + | + | + |
| Islets, Pancreatic Adenoma Carcinoma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Parathyroid Gland | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | M | + | + |
| Pituitary Gland Pars Distalis, Adenoma | X | X | X | | | | | | | | | X | | | | | | | | X | | | |

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

Experiment Number: 20523 - 03
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 Species/Strain: RATS/Wistar Han

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 Metal working fluids (Trim VX)
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 Time Report Requested: 10:15:41
 First Dose M/F: 07/20/09 / 07/20/09
 Lab: BNW

| | | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | males
(cont...) | |
|----------------------|--|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|--------------------|------|
| WISTAR HAN RATS MALE | | 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 |
| 100 mg/m3 | | 0060 | 0060 | 0060 | 0060 | 0060 | 0060 | 0060 | 0060 | 0060 | 0060 | 0060 | 0060 | 0060 | 0060 | 0060 | 0060 | 0060 | 0060 | 0060 | 0060 | 0060 | 0060 | 0060 | 0060 | | 0060 |
| ANIMAL ID | | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | | |

Pars Distalis, Adenoma, Multiple

X

Thyroid Gland

+ +

Lymphoma Malignant

Bilateral, C-cell, Adenoma

X

C-cell, Adenoma

X

Follicle, Adenoma

GENERAL BODY SYSTEM

NONE

GENITAL SYSTEM

Epididymis

+ +

Lymphoma Malignant

Mesothelioma Nos

Preputial Gland

+ +

Lymphoma Malignant

Prostate

+ +

Lymphoma Malignant

Seminal Vesicle

+ +

Testes

+ +

Hemangiosarcoma

Mesothelioma Nos

Interstitial Cell, Adenoma

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

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

HEMATOPOIETIC SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bone Marrow | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| Histiocytic Sarcoma | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lymph Node | + | | | | + | | | | | | | | | + | | | | | | | | + | | | | | |
| Pancreatic, Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Renal, Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lymph Node, Bronchial | + | + | M | + | + | + | + | + | + | + | + | + | + | M | + | + | + | I | + | + | + | + | + | + | I | + | |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lymph Node, Mandibular | M | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | M | + | + | + | + | + | + | + | + | + |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lymph Node, Mediastinal | + | + | + | M | + | M | + | + | + | + | + | M | + | + | + | + | M | + | + | + | + | + | + | + | + | M | |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lymph Node, Mesenteric | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Spleen | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Thymus | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Thymoma Benign | | | | | | | | | | | | | | | | | | | | | | | | | | | |

INTEGUMENTARY 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
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| | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------------|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----|--------------------|
| WISTAR HAN RATS MALE | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | males
(cont...) |
| | 0730 | 0729 | 0770 | 0773 | 0773 | 0773 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | | |
| | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | | |
| 100 mg/m3 | ANIMAL ID | | | | | | | | | | | | | | | | | | | | | | | | |
| | 601 | 602 | 603 | 604 | 605 | 606 | 607 | 608 | 609 | 610 | 611 | 612 | 613 | 614 | 615 | 616 | 617 | 618 | 619 | 620 | 621 | 622 | 623 | 624 | 625 |

| | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 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 | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Epidermis, Keratoacanthoma | | | X | | | | | | | | | | | | | | | | | | | | | |
| Subcutaneous Tissue, Histiocytic Sarcoma | | | | | | | | | | | | | | | | | | | | | | | | |

MUSCULOSKELETAL SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | |
|-----------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bone | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Skeletal Muscle | | | | | | | | | | | | | | | | | | | | | | | | |
| Hemangiosarcoma | | | | | | | | | | | | | | | | | | | | | | + | + | X |

NERVOUS SYSTEM

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

RESPIRATORY SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | |
|--------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Larynx | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | |
| Lung | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Alveolar/Bronchiolar Adenoma | | | | | | | | | | | | | | | | | | | | | | | | |
| Alveolar/Bronchiolar Carcinoma | | | | | | | | | | | | | | | | | | | | | | | | |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | X | | X |

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

M .. Missing tissue
 A .. Autolysis precludes evaluation
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| WISTAR HAN RATS MALE

100 mg/m3 | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | | ANIMAL ID | males
(cont...) |
|---------------------------------------|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----------|--------------------|
| | 0730 | 0739 | 0770 | 0773 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | | |
| Nose | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | | |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Polyp, Multiple | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Squamous Cell Papilloma | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Trachea | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | | |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SPECIAL SENSES SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Eye | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | | |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Harderian Gland | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | | |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lacrimal Gland | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| URINARY SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Kidney | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | | |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Urinary Bladder | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | | |
| SYSTEMIC LESIONS | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Multiple Organ | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | | |
| Histiocytic Sarcoma | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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

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

Experiment Number: 20523 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (Trim VX)
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014
 Time Report Requested: 10:15:41
 First Dose M/F: 07/20/09 / 07/20/09
 Lab: BNW

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

**males
(cont...)**

Mesothelioma Nos

* .. 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: 20523 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (Trim VX)
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014
 Time Report Requested: 10:15:41
 First Dose M/F: 07/20/09 / 07/20/09
 Lab: BNW

| WISTAR HAN RATS MALE
100 mg/m3 | DAY ON TEST | | | | | | | | | | | | | | | | | | | | * TOTALS | | |
|-----------------------------------|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------|-------|------|
| | 0730 | 0730 | 0732 | 0734 | 0738 | 0738 | 0738 | 0738 | 0738 | 0738 | 0738 | 0738 | 0738 | 0738 | 0738 | 0738 | 0738 | 0738 | 0738 | 0738 | | 0738 | 0738 |
| ANIMAL ID | 00626 | 00626 | 00626 | 00626 | 00626 | 00626 | 00626 | 00626 | 00626 | 00626 | 00626 | 00626 | 00626 | 00626 | 00626 | 00626 | 00626 | 00626 | 00626 | 00626 | 00626 | 00626 | |
| | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | |
| | 3 | 3 | 2 | 4 | 3 | 3 | 8 | 1 | 3 | 3 | 2 | 2 | 3 | 0 | 2 | 5 | 6 | 3 | 2 | 5 | 3 | 2 | 3 |
| | 0 | 0 | 9 | 0 | 1 | 0 | 1 | 6 | 0 | 1 | 9 | 6 | 1 | 9 | 9 | 8 | 0 | 7 | 6 | 7 | 9 | 6 | 7 |

ALIMENTARY SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|--------------|
| Esophagus | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Intestine Large, Cecum
Lymphoma Malignant | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50
1 |
| Intestine Large, Colon
Adenoma
Lymphoma Malignant | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50
1
1 |
| Intestine Large, Rectum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Intestine Small, Duodenum
Lymphoma Malignant | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50
1 |
| Intestine Small, Ileum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Intestine Small, Jejunum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Liver
Hepatocellular Adenoma
Lymphoma Malignant | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50
1
1 |
| Mesentery | | | | | | | | | + | + | | | | | | | + | M | | | | | 5 |
| Pancreas | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Salivary Glands
Schwannoma 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: 20523 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (Trim VX)
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014
 Time Report Requested: 10:15:41
 First Dose M/F: 07/20/09 / 07/20/09
 Lab: BNW

| WISTAR HAN RATS MALE
100 mg/m3 | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | * TOTALS | | |
|---|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---|----------|---|----|
| | 0730 | 0730 | 0732 | 0734 | 0733 | 0738 | 0771 | 0773 | 0775 | 0777 | 0777 | 0776 | 0777 | 0774 | 0777 | 0774 | 0775 | 0777 | 0776 | 0777 | 0775 | 0777 | 0773 | | | | |
| ANIMAL ID | 00626 | 00662 | 00662 | 00662 | 00633 | 00633 | 00633 | 00633 | 00633 | 00633 | 00633 | 00633 | 00633 | 00644 | 00644 | 00644 | 00644 | 00644 | 00644 | 00644 | 00644 | 00644 | 00644 | | | | |
| Stomach, Forestomach
Lymphoma Malignant
Squamous Cell Papilloma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | X | + | + | + | + | + | 50 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Stomach, Glandular
Lymphoma Malignant | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| CARDIOVASCULAR SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Blood Vessel | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Heart
Lymphoma Malignant | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| ENDOCRINE SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Adrenal Cortex
Carcinoma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 |
| Adrenal Medulla
Pheochromocytoma Malignant | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 49 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Islets, Pancreatic
Adenoma
Carcinoma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| | | | | X | | | | | | | | | | | | | | | | | | | | | | | 1 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Parathyroid Gland | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 49 |
| Pituitary Gland
Pars Distalis, Adenoma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| | | | X | X | | X | | X | X | X | X | | | | | | X | X | | | X | | | | | | 15 |

* .. 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: 20523 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (Trim VX)
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014
 Time Report Requested: 10:15:41
 First Dose M/F: 07/20/09 / 07/20/09
 Lab: BNW

| WISTAR HAN RATS MALE
100 mg/m3 | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | * TOTALS | | | | | |
|-----------------------------------|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------|-------|-------|-------|-------|-------|
| | 0730 | 0730 | 0729 | 0754 | 0777 | 0775 | 0775 | 0777 | 0777 | 0777 | 0777 | 0766 | 0777 | 0744 | 0777 | 0744 | 0755 | 0766 | 0733 | 0722 | 0777 | 0744 | 0755 | 0777 | | 0777 | 0733 | 0777 | 0733 | 0766 |
| ANIMAL ID | 00626 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 |
| Pars Distalis, Adenoma, Multiple | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Thyroid Gland | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Bilateral, C-cell, Adenoma | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| C-cell, Adenoma | | | | | | X | | | | | X | | | X | X | | | | | X | | | | | | | | | 6 | |
| Follicle, Adenoma | | | | | | | | | | | | | | | | | | | | | | | | | | | X | | | 1 |
| GENERAL BODY SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NONE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GENITAL SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Epididymis | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Mesothelioma Nos | | | | | | | | | | | | | | | X | | | | | | | | | | | | | | | 1 |
| Preputial Gland | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Prostate | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Seminal Vesicle | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Testes | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Hemangiosarcoma | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Mesothelioma Nos | | | | | | | | | | | | | | | X | | | | | | | | | | | | | | | 1 |
| Interstitial Cell, Adenoma | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 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: 20523 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (Trim VX)
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014
 Time Report Requested: 10:15:41
 First Dose M/F: 07/20/09 / 07/20/09
 Lab: BNW

| WISTAR HAN RATS MALE | DAY ON TEST | | | | | | | | | | | | | | | | | | | | * TOTALS | | | | |
|----------------------|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------|-------|-------|-------|-------|
| | 0730 | 0730 | 0732 | 0734 | 0733 | 0738 | 0731 | 0736 | 0737 | 0733 | 0732 | 0732 | 0733 | 0732 | 0739 | 0734 | 0735 | 0737 | 0734 | 0735 | | 0737 | 0737 | 0733 | 0736 |
| 100 mg/m3 | 00626 | 00667 | 00668 | 00669 | 00660 | 00661 | 00662 | 00663 | 00664 | 00665 | 00666 | 00667 | 00668 | 00669 | 00670 | 00671 | 00672 | 00673 | 00674 | 00675 | 00676 | 00677 | 00678 | 00679 | 00680 |
| | 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 |

HEMATOPOIETIC SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|--------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|
| Bone Marrow | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Histiocytic Sarcoma | | | | | | | | | | | | | | | X | | | | | | | | | | 1 |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | X | | | 1 |
| Lymph Node | | | | | | | | | | | + | | | | | | + | | | | | | | | 8 |
| Pancreatic, Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | X | | 1 |
| Renal, Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | X | | 1 |
| Lymph Node, Bronchial | + | M | + | + | + | + | M | + | + | + | + | + | + | + | + | + | + | + | + | + | M | + | I | + | 42 |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | X | | | 1 |
| Lymph Node, Mandibular | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 48 |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | X | | 1 |
| Lymph Node, Mediastinal | + | M | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | M | + | + | 43 |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | X | | | 1 |
| Lymph Node, Mesenteric | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | X | | 1 |
| Spleen | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | X | | 1 |
| Thymus | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | X | | 1 |
| Thymoma Benign | | | | | | | | | | | | | | | | | | | | | | | X | | 1 |

INTEGUMENTARY 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: 20523 - 03
 Test Type: CHRONIC
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 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (Trim VX)
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014
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 First Dose M/F: 07/20/09 / 07/20/09
 Lab: BNW

| WISTAR HAN RATS MALE
100 mg/m3 | DAY ON TEST | | | | | | | | | | | | | | | | | | | | * TOTALS | | | |
|--|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------|-------|-------|------|
| | 0730 | 0733 | 0732 | 0754 | 0773 | 0775 | 0781 | 0771 | 0773 | 0773 | 0762 | 0774 | 0747 | 0744 | 0756 | 0763 | 0722 | 0729 | 0745 | 0753 | | 0772 | 0773 | 0736 |
| ANIMAL ID | 00626 | 00662 | 00662 | 00662 | 00663 | 00663 | 00663 | 00663 | 00663 | 00663 | 00666 | 00667 | 00668 | 00669 | 00670 | 00671 | 00672 | 00673 | 00674 | 00675 | 00676 | 00677 | 00679 | |
| Mammary Gland | M | M | M | M | M | M | M | M | M | M | M | + | M | M | M | M | + | M | M | M | M | M | M | 2 |
| Skin | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Epidermis, Keratoacanthoma | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| Subcutaneous Tissue, Histiocytic Sarcoma | | | | | | | | | | | | | | | X | | | | | | | | 1 | |
| MUSCULOSKELETAL SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | |
| Bone | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Skeletal Muscle | | | | | + | | | | | | | | | | | | | | | | | | 3 | |
| Hemangiosarcoma | | | | | X | | | | | | | | | | | | | | | | | | 2 | |
| NERVOUS SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | |
| Brain | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Peripheral Nerve | | | | | + | | | | | | | | | | | | | | | | | | 2 | |
| Spinal Cord | | | | | + | | | | | | | | | | | | | | | | | | 2 | |
| RESPIRATORY SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | |
| Larynx | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | X | | 1 | |
| Lung | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Alveolar/Bronchiolar Adenoma | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| Alveolar/Bronchiolar Carcinoma | | | | | | | | | | | | | | | | | | | | | | | 2 | |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | X | | 1 | |

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

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

Experiment Number: 20523 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (Trim VX)
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014
 Time Report Requested: 10:15:41
 First Dose M/F: 07/20/09 / 07/20/09
 Lab: BNW

| WISTAR HAN RATS MALE

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 | | | | |
| | 7 | 7 | 7 | 5 | 7 | 7 | 5 | 7 | 7 | 7 | 6 | 7 | 4 | 7 | 4 | 5 | 7 | 6 | 7 | 4 | 5 | | 7 | 7 | 3 | | |
| | 3 | 3 | 2 | 4 | 3 | 3 | 8 | 1 | 3 | 3 | 2 | 2 | 3 | 0 | 2 | 5 | 6 | 3 | 2 | 2 | 5 | 3 | 2 | 3 | 6 | | |
| | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 6 | 0 | 1 | 9 | 6 | 1 | 9 | 9 | 8 | 0 | 7 | 9 | 9 | 6 | 9 | 6 | 9 | 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 | | |
| | 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 | | |
| | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | | |
| | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | | |
| Nose | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | X | | | 1 | | |
| Polyp, Multiple | | | | | | | | | | | | | | | | | | | | | | | X | | 1 | | |
| Squamous Cell Papilloma | | | | | | | | | | | | | | | | | | | | | | X | | | 1 | | |
| Trachea | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | X | | | 1 | | |
| SPECIAL SENSES SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Eye | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | X | | | 1 | | |
| Harderian Gland | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | X | | | 1 | | |
| Lacrimal Gland | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | |
| URINARY SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Kidney | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | X | | | 1 | | |
| Urinary Bladder | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| SYSTEMIC LESIONS | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Multiple Organ | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| Histiocytic Sarcoma | | | | | | | | | | | | | | | | X | | | | | | | | | 1 | | |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | X | | | 1 | | |

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

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

Experiment Number: 20523 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (Trim VX)
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014
 Time Report Requested: 10:15:41
 First Dose M/F: 07/20/09 / 07/20/09
 Lab: BNW

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

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 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | |
| | | 7 | 7 | 7 | 5 | 7 | 7 | 5 | 7 | 7 | 7 | 7 | 6 | 7 | 4 | 7 | 4 | 5 | 7 | 6 | 7 | 4 | 5 | 7 | 7 | 7 | 3 | 6 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | | | | |
| | | 3 | 3 | 2 | 4 | 3 | 3 | 8 | 1 | 3 | 3 | 2 | 2 | 3 | 0 | 2 | 5 | 6 | 3 | 2 | 2 | 5 | 3 | 2 | 3 | 2 | 3 | 6 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | | | |
| | | 0 | 0 | 9 | 0 | 1 | 0 | 1 | 6 | 0 | 1 | 9 | 6 | 1 | 9 | 9 | 8 | 0 | 7 | 7 | 9 | 9 | 6 | 9 | 0 | 7 | 9 | 9 | 6 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | | | |
| | ANIMAL ID | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| | | 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 | 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 | 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 | 3 | 3 | 3 | | | |
| | | 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 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | * TOTALS | | | | | | | | | | | | | | | |
| | | Mesothelioma Nos | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 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: 20523 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (Trim VX)
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014
 Time Report Requested: 10:15:41
 First Dose M/F: 07/20/09 / 07/20/09
 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 | 6 | 7 | 7 | 7 | 5 | 7 | 7 | 7 | 7 | 7 | 6 | 5 | 7 | 5 | 5 | 6 | 7 | 6 | 7 | 7 | 6 | 7 | 7 |
| | | 3 | 1 | 3 | 3 | 0 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 3 | 3 | 8 | 4 | 1 | 3 | 9 | 0 | 3 | 0 | 3 | 3 |
| Control | | 2 | 5 | 1 | 3 | 2 | 5 | 1 | 1 | 1 | 2 | 3 | 5 | 4 | 2 | 5 | 7 | 8 | 3 | 7 | 8 | 3 | 6 | 3 | 3 |
| | ANIMAL ID | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 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 |

females
(cont...)

ALIMENTARY SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Esophagus | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Large, Cecum
Lymphoma Malignant | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| Intestine Large, Colon | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Large, Rectum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Small, Duodenum
Lymphoma Malignant | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| Intestine Small, Ileum
Lymphoma Malignant | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| Intestine Small, Jejunum
Lymphoma Malignant | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| Liver
Lymphoma Malignant | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| Mesentery | | | + | | | + | | | | | | | | | | | | | | + | | | | |
| Pancreas
Lymphoma Malignant | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| Salivary Glands | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |

* .. 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: 20523 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (Trim VX)
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014
 Time Report Requested: 10:15:41
 First Dose M/F: 07/20/09 / 07/20/09
 Lab: BNW

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

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|---------------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Stomach, Forestomach | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Stomach, Glandular Lymphoma Malignant | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| | | | X | | | | | | | | | | | | | | | | | | | | | | |

CARDIOVASCULAR SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|--------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Blood Vessel | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Heart Lymphoma Malignant | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| | | | X | | | | | | | | | | | | | | | | | | | | | | |

ENDOCRINE SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Adrenal Cortex Lymphoma Malignant | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| | | | X | | | | | | | | | | | | | | | | | | | | | | |
| Adrenal Medulla | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Islets, Pancreatic | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Parathyroid Gland Adenoma | M | M | + | + | + | + | + | + | + | + | M | + | + | + | + | + | M | + | + | + | + | M | + | + | |
| Pituitary Gland Pars Distalis, Adenoma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Pituitary Gland Pars Intermedia, Adenoma | X | X | | | X | X | X | | X | X | X | | X | X | X | X | X | X | | X | | X | | X | |
| | | | | | | | | | | | | | | | | | | | | | | | X | | |
| Thyroid Gland Bilateral, C-cell, Adenoma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | I | + | + | + | + | + | + | + | |
| Thyroid Gland C-cell, Adenoma | | X | | X | | | | X | | | | | | | | | X | | | | | | X | | |

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

Experiment Number: 20523 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
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P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (Trim VX)
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014
 Time Report Requested: 10:15:41
 First Dose M/F: 07/20/09 / 07/20/09
 Lab: BNW

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

Follicle, Carcinoma

X

GENERAL BODY SYSTEM

NONE

GENITAL SYSTEM

Clitoral Gland

+ +

Ovary

+ +

Granulosa Cell Tumor Malignant

X

Uterus

+ +

Adenocarcinoma

X

Adenoma

Granular Cell Tumor Benign

Histiocytic Sarcoma

X

Polyp Stromal

X

X

Polyp Stromal, Multiple

X

Sarcoma Stromal

X

Schwannoma Malignant

Vagina

Fibrosarcoma

HEMATOPOIETIC SYSTEM

Bone Marrow

+ +

Lymph Node

+ +

* .. 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: 20523 - 03
 Test Type: CHRONIC
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 Lab: BNW

| Wistar Han Rats Female
Control | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | females
(cont...) |
|-----------------------------------|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----------------------|
| | 0732 | 0615 | 0731 | 0733 | 0770 | 0753 | 0771 | 0777 | 0777 | 0777 | 0777 | 0665 | 0557 | 0775 | 0555 | 0554 | 0661 | 0773 | 0669 | 0770 | 0663 | 0770 | 0773 | 0773 | |
| ANIMAL ID | 0010 | 0001 | 0001 | 0001 | 0001 | 0001 | 0001 | 0001 | 0001 | 0001 | 0001 | 0001 | 0001 | 0001 | 0001 | 0001 | 0001 | 0001 | 0001 | 0001 | 0001 | 0001 | 0001 | 0001 | |
| | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | |
| | 2 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | |

Axillary, Lymphoma Malignant X
 Deep Cervical, Lymphoma Malignant X
 Lumbar, Lymphoma Malignant X
 Pancreatic, Lymphoma Malignant X

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lymph Node, Bronchial Lymphoma Malignant | M | + | M | + | + | + | + | + | + | M | + | M | + | M | M | + | + | + | + | + | + | M | + | M | + |
| Lymph Node, Mandibular Lymphoma Malignant | + | + | + | + | M | M | + | + | + | M | + | M | + | + | + | + | + | + | + | + | + | + | + | M | M |
| Lymph Node, Mediastinal Lymphoma Malignant | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | M | + | M | + | + | + | + | + |
| Lymph Node, Mesenteric Lymphoma Malignant | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Spleen Lymphoma Malignant | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Thymus Lymphoma Malignant | M | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | M | + | + | + | + | + | + | + |
| Thymoma Benign | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | X | | | | | | X | X |

INTEGUMENTARY SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mammary Gland Adenoma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Adenoma, Multiple | | | | | | X | | | | | | | | | | | | | | | | | X | | |
| Carcinoma | | | | | X | | | | | | | | | | | | | | | | | | | | X |
| Carcinoma, Multiple | | | | | | | | | | | | | 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: 20523 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (Trim VX)
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014
 Time Report Requested: 10:15:41
 First Dose M/F: 07/20/09 / 07/20/09
 Lab: BNW

| WISTAR HAN RATS FEMALE | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | | females
(cont...) | |
|-------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| | 07
32 | 06
15 | 07
13 | 07
13 | 07
02 | 05
35 | 07
11 | 07
11 | 07
11 | 07
12 | 07
13 | 06
34 | 05
33 | 07
43 | 05
34 | 05
34 | 06
18 | 07
13 | 06
09 | 07
08 | 07
03 | 06
06 | 07
03 | 07
03 | 07
02 | | |
| Control | ANIMAL ID | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 00
11
00
11 | 00
01
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02 | 00
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02 | 00
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03 | 00
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04 | 00
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00
05 | 00
01
00
06 | 00
01
00
07 |
| Fibroadenoma | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Skin | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| MUSCULOSKELETAL SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Bone | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Skeletal Muscle | | | | | + | + | | | | | | | | | | | | | | | | | | | | | |
| NERVOUS SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Brain | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Peripheral Nerve | | | | | + | + | | | | | | | | | | | | | | | | | | | | | |
| Spinal Cord | | | | | + | + | | | | | | | | | | | | | | | | | | | | | |
| RESPIRATORY SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Larynx | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Lung | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Nose | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Trachea | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| SPECIAL SENSES 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: 20523 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (Trim VX)
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014
 Time Report Requested: 10:15:41
 First Dose M/F: 07/20/09 / 07/20/09
 Lab: BNW

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

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

URINARY SYSTEM

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

SYSTEMIC LESIONS

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|---------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Multiple Organ | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Histiocytic Sarcoma | | | | | | | | | | | | | | X | | | | | | | | | | | |
| 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: 20523 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (Trim VX)
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014
 Time Report Requested: 10:15:41
 First Dose M/F: 07/20/09 / 07/20/09
 Lab: BNW

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

ALIMENTARY SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---------|
| Esophagus | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Intestine Large, Cecum
Lymphoma Malignant | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50
1 |
| Intestine Large, Colon | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Intestine Large, Rectum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Intestine Small, Duodenum
Lymphoma Malignant | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50
1 |
| Intestine Small, Ileum
Lymphoma Malignant | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50
1 |
| Intestine Small, Jejunum
Lymphoma Malignant | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50
1 |
| Liver
Lymphoma Malignant | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50
1 |
| Mesentery | + | | | | | | | | | | | | | | | | | | | | | | 4 |
| Pancreas
Lymphoma Malignant | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50
1 |
| Salivary Glands | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 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: 20523 - 03

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL

Metal working fluids (Trim VX)

CAS Number: TRIMVX

Date Report Requested: 10/29/2014

Time Report Requested: 10:15:41

First Dose M/F: 07/20/09 / 07/20/09

Lab: BNW

| | | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | |
|---|-----------|-------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---------------|-----------------|
| WISTAR HAN RATS FEMALE | | 07 | 07 | 07 | 07 | 07 | 07 | 07 | 07 | 07 | 07 | 07 | 07 | 07 | 07 | 07 | 07 | 07 | 07 | 07 | 07 | | 07 | |
| Control | ANIMAL ID | 31 | 33 | 52 | 33 | 31 | 36 | 33 | 33 | 66 | 88 | 33 | 24 | 66 | 22 | 22 | 33 | 33 | 33 | 74 | 33 | 66 | | |
| | | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | |
| | | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | |
| | | 22 | 22 | 22 | 22 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | |
| | | 66 | 77 | 88 | 99 | 00 | 11 | 22 | 33 | 44 | 55 | 66 | 77 | 88 | 99 | 00 | 11 | 22 | 33 | 44 | 55 | 66 | 77 | * TOTALS |
| Stomach, Forestomach | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Stomach, Glandular
Lymphoma Malignant | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50
1 | |
| CARDIOVASCULAR SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | |
| Blood Vessel | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Heart
Lymphoma Malignant | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50
1 | |
| ENDOCRINE SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | |
| Adrenal Cortex
Lymphoma Malignant | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50
1 | |
| Adrenal Medulla | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Islets, Pancreatic | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Parathyroid Gland
Adenoma | | + | + | + | + | + | + | + | + | M | + | + | + | + | + | + | + | + | M | + | + | M | 42
1 | |
| Pituitary Gland
Pars Distalis, Adenoma
Pars Intermedia, Adenoma | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50
34
1 | |
| Thyroid Gland
Bilateral, C-cell, Adenoma
C-cell, Adenoma | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 49
1
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: 20523 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (Trim VX)
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014
 Time Report Requested: 10:15:41
 First Dose M/F: 07/20/09 / 07/20/09
 Lab: BNV

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

Follicle, Carcinoma

1

GENERAL BODY SYSTEM

NONE

GENITAL SYSTEM

Clitoral Gland

+ 50

Ovary
Granulosa Cell Tumor Malignant

+ 50
1

Uterus
Adenocarcinoma
Adenoma
Granular Cell Tumor Benign
Histiocytic Sarcoma
Polyp Stromal
Polyp Stromal, Multiple
Sarcoma Stromal
Schwannoma Malignant

+ 50
1
1
1
2
4
2
1
2
X X

Vagina
Fibrosarcoma

+ 1
1

HEMATOPOIETIC SYSTEM

Bone Marrow

+ 50

Lymph Node

+ 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: 20523 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (Trim VX)
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014
 Time Report Requested: 10:15:41
 First Dose M/F: 07/20/09 / 07/20/09
 Lab: BNW

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

Axillary, Lymphoma Malignant 1
 Deep Cervical, Lymphoma Malignant 1
 Lumbar, Lymphoma Malignant 1
 Pancreatic, Lymphoma Malignant 1

Lymph Node, Bronchial Lymphoma Malignant + + + + + + + + M + + + + + M + M M + + + + M + 37
 1

Lymph Node, Mandibular Lymphoma Malignant M + + + + + M M + + + + + + + + + M + + + + 40
 1

Lymph Node, Mediastinal Lymphoma Malignant + + + + + + + + + + + + + + + + + M + + + M 46
 1

Lymph Node, Mesenteric Lymphoma Malignant + 50
 1

Spleen Lymphoma Malignant + 50
 1

Thymus Lymphoma Malignant + 48
 1
 Thymoma Benign X X X X X 8

INTEGUMENTARY SYSTEM

Mammary Gland Adenoma + 50
 Adenoma, Multiple X 3
 Carcinoma X 1
 Carcinoma, Multiple 3
 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: 20523 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (Trim VX)
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014
 Time Report Requested: 10:15:41
 First Dose M/F: 07/20/09 / 07/20/09
 Lab: BNW

| WISTAR HAN RATS FEMALE | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | * TOTALS | |
|-------------------------------|-------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|----------|---|
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Control | 7 | 7 | 3 | 7 | 7 | 7 | 7 | 7 | 5 | 5 | 6 | 7 | 6 | 5 | 7 | 7 | 7 | 7 | 7 | 6 | 7 | 5 | 7 | 7 | | |
| | 3 | 3 | 5 | 3 | 3 | 1 | 3 | 3 | 3 | 9 | 1 | 3 | 5 | 8 | 3 | 3 | 3 | 3 | 3 | 7 | 7 | 3 | 3 | 3 | | |
| | 1 | 3 | 2 | 3 | 3 | 6 | 3 | 3 | 6 | 8 | 3 | 2 | 4 | 6 | 2 | 2 | 2 | 3 | 3 | 4 | 3 | 6 | 2 | 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 | | |
| | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | |
| 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | | | |
| 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | | | |
| Fibroadenoma | | | | | | | | | | | | | | | | | | | | | | | | X | 2 | |
| Skin | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| MUSCULOSKELETAL SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Bone | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| Skeletal Muscle | | | | | | | | | | | | | | | | | | | | | | | | + | + | 4 |
| NERVOUS SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Brain | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| Peripheral Nerve | | | | | | | | | | | | | | | | | | | | | | | | + | + | 4 |
| Spinal Cord | | | | | | | | | | | | | | | | | | | | | | | | + | + | 4 |
| RESPIRATORY SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Larynx | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| Lung | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| Nose | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| Trachea | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 49 | | |
| SPECIAL SENSES 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: 20523 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (Trim VX)
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014
 Time Report Requested: 10:15:41
 First Dose M/F: 07/20/09 / 07/20/09
 Lab: BNW

| | | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | * TOTALS | |
|-------------------------|-----------|-------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----------|----|
| WISTAR HAN RATS FEMALE | | 07 | 07 | 03 | 07 | 07 | 07 | 07 | 07 | 05 | 05 | 06 | 07 | 06 | 05 | 07 | 07 | 07 | 07 | 07 | 06 | 07 | 05 | 07 | 07 | | 07 |
| Control | ANIMAL ID | 01 | 03 | 05 | 03 | 03 | 01 | 06 | 03 | 03 | 06 | 08 | 03 | 02 | 04 | 06 | 02 | 02 | 02 | 03 | 03 | 04 | 03 | 07 | 03 | 03 | |
| | | 02 | 07 | 08 | 09 | 00 | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 00 | 01 | 01 | 01 | 01 | 01 | 01 | 01 | 01 | 01 | 01 | 01 |
| Eye | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Harderian Gland | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| URINARY SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Kidney | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Urinary Bladder | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| SYSTEMIC LESIONS | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Multiple Organ | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Histiocytic Sarcoma | | | | X | | | | | | | | | | | | | | | | | | | | | | 2 | |
| 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: 20523 - 03
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 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

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 Metal working fluids (Trim VX)
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014
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 First Dose M/F: 07/20/09 / 07/20/09
 Lab: BNW

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

ALIMENTARY SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | |
|--|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Esophagus | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Large, Cecum
Neoplasm Nos | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | X | + |
| Intestine Large, Colon
Neoplasm Nos | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | X | + |
| Intestine Large, Rectum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Small, Duodenum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Small, Ileum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Small, Jejunum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Liver
Cholangioma | + | + | + | + | + | + | + | + | + | + | X | + | + | + | + | + | + | + | + | + | + | + | + |
| Mesentery
Neoplasm Nos | | | + | | | | | | | + | | | | | | | | | | | | + | X |
| Pancreas
Neoplasm Nos | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | X |
| Salivary Glands | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Stomach, Forestomach | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |

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

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

Experiment Number: 20523 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (Trim VX)
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014
 Time Report Requested: 10:15:41
 First Dose M/F: 07/20/09 / 07/20/09
 Lab: BNW

| WISTAR HAN RATS FEMALE | DAY ON TEST | | | | | | | | | | | | | | | | | | | | ANIMAL ID | females
(cont...) | | | |
|------------------------|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----------|----------------------|------|------|------|
| | 0733 | 0732 | 0731 | 0735 | 0733 | 0732 | 0734 | 0716 | 0767 | 0773 | 0767 | 0773 | 0772 | 0773 | 0767 | 0767 | 0773 | 0772 | 0773 | 0771 | | | 0758 | 0749 | 0759 |
| 10 mg/m3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0030 | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0033 | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0030 | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 0031 | |

Neoplasm Nos

X

Stomach, Glandular
 Neoplasm Nos

+
 X

CARDIOVASCULAR SYSTEM

Blood Vessel

+ +

Heart
 Lymphoma Malignant

+
 X

ENDOCRINE SYSTEM

Adrenal Cortex

+ +

Adrenal Medulla

+ +

Islets, Pancreatic

+ +

Parathyroid Gland

+ + + M + + M + + + + M + M + + + + + + + + + +

Pituitary Gland
 Pars Distalis, Adenoma
 Pars Distalis, Adenoma, Multiple

+
 X X
 X

Thyroid Gland
 Bilateral, C-cell, Adenoma
 C-cell, Adenoma
 Follicle, Adenoma
 Follicle, Carcinoma

+
 X
 X

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

M .. Missing tissue
 A .. Autolysis precludes evaluation
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Experiment Number: 20523 - 03
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 Metal working fluids (Trim VX)
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 Lab: BNW

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

GENERAL BODY SYSTEM

NONE

GENITAL SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | |
|--------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Clitoral Gland | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Squamous Cell Papilloma | | | | | | | | | | | | | | | | | | | | X | | | |
| Ovary | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Granulosa Cell Tumor Benign | | X | | | | | | | | | | | | | | | | | | | | | |
| Granulosa Cell Tumor Malignant | | | | | | | | | | | | | | | | | | | | | | | |
| Uterus | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Adenocarcinoma | | | | | | | | X | | | | | | | | | | | | | | | |
| Adenoma | | | | | | | | | | | | | | | | | | | | | | | |

HEMATOPOIETIC SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | |
|-------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bone Marrow | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Neoplasm Nos | | | | | | | | | | | | | | | | | | | | | | X | |
| Lymph Node | | | | | | | | | | | | | | | | | | | | | | | |
| Lumbar, Hemangiosarcoma | | | | | | | | | | | | | | | | | | | | | | | |
| Lymph Node, Bronchial | + | + | M | + | M | + | + | + | + | + | M | + | M | + | M | + | + | + | + | + | M | + | + |
| Lymphoma Malignant | | | | | | | | | | | X | | | | | | | | | | | | |
| Lymph Node, Mandibular | + | + | + | + | M | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Lymph Node, Mediastinal | + | + | + | + | + | 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
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 Lab: BNW

| WISTAR HAN RATS FEMALE
10 mg/m3 | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | ANIMAL ID | females
(cont...) | |
|--|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----------|----------------------|--|
| | 0733 | 0732 | 0731 | 0735 | 0733 | 0733 | 0734 | 0716 | 0776 | 0777 | 0766 | 0777 | 0777 | 0777 | 0766 | 0777 | 0766 | 0777 | 0777 | 0777 | 0777 | 0755 | 0744 | 0755 | | | |
| Neoplasm Nos | | | | | | | | | | | | | | | | | | | | | | | | | X | | |
| Lymph Node, Mesenteric Neoplasm Nos | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | | | |
| Spleen Lymphoma Malignant | + | + | + | + | + | + | + | | | | | | | | | | | | | | | | | | | | |
| Thymus Lymphoma Malignant | + | + | + | + | + | + | | | | | | | | | | | | | | | | | | | | | |
| Thymoma Benign | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| INTEGUMENTARY SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mammary Gland Adenoma | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mammary Gland Carcinoma | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mammary Gland Carcinoma, Multiple | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mammary Gland Fibroadenoma | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mammary Gland Fibroadenoma, Multiple | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Skin Subcutaneous Tissue, Lipoma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | | |
| Skin Subcutaneous Tissue, Neoplasm Nos | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MUSCULOSKELETAL SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Bone | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | | |
| Skeletal Muscle | | | | | | | | | | | | | | | | | | | | | | | | | | | |

* .. 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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 Species/Strain: RATS/Wistar Han

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 First Dose M/F: 07/20/09 / 07/20/09
 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 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
|-------------------------------|-----------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----------------------|---|---|---|---|---|---|---|---|---|
| WISTAR HAN RATS FEMALE | | 7 | 7 | 7 | 3 | 7 | 7 | 1 | 6 | 7 | 7 | 6 | 7 | 7 | 7 | 6 | 7 | 6 | 7 | 7 | 7 | 7 | 5 | 4 | 5 | 4 | 5 | 4 | 5 | 4 | 5 | 4 | 5 | 4 | 5 | 4 | 5 | 4 | 5 |
| | 10 mg/m3 | 3 | 3 | 3 | 5 | 3 | 3 | 0 | 4 | 3 | 3 | 7 | 1 | 3 | 3 | 0 | 3 | 5 | 3 | 3 | 3 | 3 | 8 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 |
| | ANIMAL ID | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 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 | 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 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 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 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | females
(cont...) | | | | | | | | | |

NERVOUS SYSTEM

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

RESPIRATORY SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Larynx | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | | |
| Lung | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| Carcinoma, Metastatic, Kidney | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | X | |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | X | |
| Neoplasm Nos | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Nose | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| Trachea | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |

SPECIAL SENSES SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Eye | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | | |
| Harderian Gland | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| Zymbal's Gland | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | + |
| Carcinoma | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | X |
| Squamous Cell Papilloma | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

* .. 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: 20523 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (Trim VX)
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014
 Time Report Requested: 10:15:41
 First Dose M/F: 07/20/09 / 07/20/09
 Lab: BNW

| Wistar Han Rats Female
10 mg/m3 | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | | ANIMAL ID | females
(cont...) | | | |
|------------------------------------|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----------|----------------------|------|------|------|
| | 0733 | 0732 | 0731 | 0735 | 0733 | 0733 | 0734 | 0739 | 0733 | 0731 | 0734 | 0733 | 0731 | 0732 | 0733 | 0732 | 0734 | 0731 | 0733 | 0732 | 0733 | 0733 | 0733 | 0731 | 0732 | | | 0733 | 0734 | 0735 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0030 | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0033 | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0030 | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0031 | |

URINARY SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|--|---|
| Kidney | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | | |
| Neoplasm Nos | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Transitional Epithelium, Carcinoma | | | | | | | | | | | | | | | X | | | | | | | | | | | | | | | |
| Urinary Bladder | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | | |
| Neoplasm Nos | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | X |

SYSTEMIC LESIONS

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

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

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

Experiment Number: 20523 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (Trim VX)
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014
 Time Report Requested: 10:15:41
 First Dose M/F: 07/20/09 / 07/20/09
 Lab: BNW

| WISTAR HAN RATS FEMALE | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | * TOTALS |
|------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|----------|
| | 0
7
3
3 | 0
6
3
5 | 0
6
3
8 | 0
7
3
2 | 0
6
6
3 | 0
7
3
3 | 0
7
3
2 | 0
7
3
1 | 0
7
3
2 | 0
5
9
6 | 0
7
3
2 | 0
3
4
6 | 0
7
3
2 | 0
7
3
2 | 0
7
3
2 | 0
7
3
2 | 0
7
3
3 | 0
7
3
1 | 0
7
3
3 | 0
5
3
2 | 0
7
3
3 | 0
7
3
3 | | | |
| 10 mg/m3 | 0
0
3
2
6 | 0
0
3
2
7 | 0
0
3
2
8 | 0
0
3
2
9 | 0
0
3
3
0 | 0
0
3
3
1 | 0
0
3
3
2 | 0
0
3
3
3 | 0
0
3
3
4 | 0
0
3
3
5 | 0
0
3
3
6 | 0
0
3
3
7 | 0
0
3
3
8 | 0
0
3
3
9 | 0
0
3
4
0 | 0
0
3
4
1 | 0
0
3
4
2 | 0
0
3
4
3 | 0
0
3
4
4 | 0
0
3
4
5 | 0
0
3
4
6 | 0
0
3
4
7 | 0
0
3
4
8 | 0
0
3
4
9 | 50
1 |

ALIMENTARY SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---------|
| Esophagus | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Intestine Large, Cecum
Neoplasm Nos | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50
1 |
| Intestine Large, Colon
Neoplasm Nos | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50
1 |
| Intestine Large, Rectum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Intestine Small, Duodenum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Intestine Small, Ileum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Intestine Small, Jejunum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Liver
Cholangioma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50
1 |
| Mesentery
Neoplasm Nos | | | | | | | | | | | | | | | | | | | | | | | | | 5
1 |
| Pancreas
Neoplasm Nos | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50
1 |
| Salivary Glands | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| 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: 20523 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (Trim VX)
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014
 Time Report Requested: 10:15:41
 First Dose M/F: 07/20/09 / 07/20/09
 Lab: BNW

| Wistar Han Rats Female
10 mg/m3 | DAY ON TEST | | | | | | | | | | | | | | | | | | | | * TOTALS | |
|------------------------------------|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------|------|
| | 0733 | 0663 | 0663 | 0773 | 0773 | 0773 | 0773 | 0773 | 0573 | 0773 | 0773 | 0773 | 0773 | 0773 | 0773 | 0773 | 0773 | 0773 | 0773 | 0573 | | 0773 |
| ANIMAL ID | 00326 | 00327 | 00328 | 00329 | 00330 | 00331 | 00332 | 00333 | 00334 | 00335 | 00336 | 00337 | 00338 | 00339 | 00340 | 00341 | 00342 | 00343 | 00344 | 00345 | 00346 | |
| Neoplasm Nos | | | | | | | | | | | | | | | | | | | | | | 1 |
| Stomach, Glandular
Neoplasm Nos | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| | | | | | | | | | | | | | | | | | | | | | | 1 |

CARDIOVASCULAR SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | |
|-----------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|
| Blood Vessel | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Heart
Lymphoma Malignant | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| | | | | | | | | | | | | | | | | | | | | | | 1 |

ENDOCRINE SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | |
|----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|
| Adrenal Cortex | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Adrenal Medulla | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Islets, Pancreatic | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Parathyroid Gland | + | + | + | + | M | + | + | + | + | M | + | + | + | + | + | M | + | + | + | + | + | 43 |
| Pituitary Gland | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Pars Distalis, Adenoma | X | X | X | | X | X | | X | X | X | | X | X | | X | X | X | X | | | X | 31 |
| Pars Distalis, Adenoma, Multiple | | | | | | | | | | | | | | | | | | | | | | 2 |
| Thyroid Gland | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Bilateral, C-cell, Adenoma | | | | | | | | | | | | | X | | | | | | | | | 1 |
| C-cell, Adenoma | | | | | | | | | | | | | | | | | | | | X | | 3 |
| Follicle, Adenoma | | | | | | | | | | | | | | | | | | | | | X | 1 |
| Follicle, Carcinoma | | | | | | | | | | | | | | | X | | | 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: 20523 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (Trim VX)
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014
 Time Report Requested: 10:15:41
 First Dose M/F: 07/20/09 / 07/20/09
 Lab: BNW

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------------------------------|-----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| WISTAR HAN RATS FEMALE | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | |
| | 0733 | 0663 | 0663 | 0732 | 0663 | 0732 | 0773 | 0773 | 0773 | 0773 | 0572 | 0734 | 0773 | 0773 | 0773 | 0773 | 0773 | 0773 | 0773 | 0573 | | 0773 | 0773 | | |
| 10 mg/m3 | ANIMAL ID | | | | | | | | | | | | | | | | | | | | | | | | |
| | 00326 | 00327 | 00328 | 00329 | 00330 | 00331 | 00332 | 00333 | 00334 | 00335 | 00336 | 00337 | 00338 | 00339 | 00340 | 00341 | 00342 | 00343 | 00344 | 00345 | 00346 | 00347 | 00348 | 00349 | 00350 |
| | * TOTALS | | | | | | | | | | | | | | | | | | | | | | | | |

GENERAL BODY SYSTEM

NONE

GENITAL SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----------------------------------|
| Clitoral Gland
Squamous Cell Papilloma | + | + | M | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | M | 48
1 |
| Ovary
Granulosa Cell Tumor Benign
Granulosa Cell Tumor Malignant | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50
2
1 |
| Uterus
Adenocarcinoma
Adenoma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50
1
1 |

HEMATOPOIETIC SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----------------------|----------------------|-----------------------|
| Bone Marrow
Neoplasm Nos | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50
1 | | |
| Lymph Node
Lumbar, Hemangiosarcoma | | | | | | | | | | | | | | | | | | | | | | | + | X | 1
1 | |
| Lymph Node, Bronchial
Lymphoma Malignant | + | M | + | + | + | + | + | M | + | + | + | M | + | + | + | + | I | + | I | I | + | + | + | I | + | 37
1 |
| Lymph Node, Mandibular | + | + | + | + | M | + | + | + | + | + | + | + | M | + | + | + | + | + | + | + | + | + | + | M | + | 46 |
| Lymph Node, Mediastinal | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 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: 20523 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (Trim VX)
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014
 Time Report Requested: 10:15:41
 First Dose M/F: 07/20/09 / 07/20/09
 Lab: BNW

| WISTAR HAN RATS FEMALE
10 mg/m3 | DAY ON TEST | | | | | | | | | | | | | | | | | | | | * TOTALS | | |
|--|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------|-------|---------|
| | 0733 | 0663 | 0663 | 0772 | 0663 | 0773 | 0773 | 0773 | 0773 | 0573 | 0773 | 0773 | 0773 | 0773 | 0773 | 0773 | 0773 | 0773 | 0773 | 0773 | | 0773 | 0773 |
| ANIMAL ID | 00326 | 00327 | 00328 | 00329 | 00330 | 00331 | 00332 | 00333 | 00334 | 00335 | 00336 | 00337 | 00338 | 00339 | 00340 | 00341 | 00342 | 00343 | 00344 | 00345 | 00346 | 00347 | |
| Neoplasm Nos | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Lymph Node, Mesenteric
Neoplasm Nos | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50
1 |
| Spleen
Lymphoma Malignant | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50
1 |
| Thymus
Lymphoma Malignant | + | + | + | + | + | + | + | + | + | + | + | M | + | + | + | + | + | + | + | + | + | + | 49
1 |
| Thymoma Benign | | | | | | | | | X | | | | | | | X | X | | | | | | 4 |
| INTEGUMENTARY SYSTEM | | | | | | | | | | | | | | | | | | | | | | | |
| Mammary Gland
Adenoma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50
1 |
| Carcinoma | X | | | | | | | | | | | | | | | | | | | | | | 2 |
| Carcinoma, Multiple | | | | | | | | | | | | | | | | | | | | | X | | 2 |
| Fibroadenoma | | X | | | | | | | | | | | | X | | | | X | | | | | 7 |
| Fibroadenoma, Multiple | | | | | | | | X | | | | | | X | | | | | | | | | 2 |
| Skin
Subcutaneous Tissue, Lipoma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50
1 |
| Subcutaneous Tissue, Neoplasm Nos | | | | | | | | | X | | | | | | | | | | | | | | 1 |
| MUSCULOSKELETAL SYSTEM | | | | | | | | | | | | | | | | | | | | | | | |
| Bone | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Skeletal Muscle | | + | + | | | | | | | | | | | | | | | | | | | | 3 |

* .. 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: 20523 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (Trim VX)
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014
 Time Report Requested: 10:15:41
 First Dose M/F: 07/20/09 / 07/20/09
 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 | 0 | 0 | 0 | 0 | 0 | 0 | |
|-------------------------------|-----------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----------------|---|---|---|---|---|---|---|---|---|---|
| | | 7 | 6 | 6 | 7 | 6 | 7 | 7 | 7 | 7 | 5 | 7 | 3 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 3 | 7 | 5 | 7 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| WISTAR HAN RATS FEMALE | | 3 | 3 | 3 | 3 | 6 | 3 | 3 | 3 | 3 | 3 | 9 | 3 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | |
| | 10 mg/m3 | 3 | 5 | 8 | 2 | 3 | 3 | 2 | 1 | 2 | 6 | 2 | 6 | 2 | 2 | 2 | 2 | 2 | 3 | 2 | 1 | 3 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 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 | 0 | 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 | 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 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 5 |
| | | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 0 | 0 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | * TOTALS | | | | | | | | | | |

NERVOUS SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------------------|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|----------|-----------|
| Brain | + | | | | | | | | | | | | | | | | | | | | | | | | | | 50 |
| Peripheral Nerve | + | | | | | | | | | | | | | | | | | | | | | | | | | 3 | |
| Spinal Cord | + | | | | | | | | | | | | | | | | | | | | | | | | | 3 | |

RESPIRATORY SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------------------------------|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|----------|-----------|
| Larynx | + | | | | | | | | | | | | | | | | | | | | | | | | | | 50 |
| Lung | + | | | | | | | | | | | | | | | | | | | | | | | | | | 50 |
| Carcinoma, Metastatic, Kidney | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| Lymphoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| Neoplasm Nos | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| Nose | + | | | | | | | | | | | | | | | | | | | | | | | | | | 50 |
| Trachea | + | | | | | | | | | | | | | | | | | | | | | | | | | | 50 |

SPECIAL SENSES SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------------------------|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|----------|-----------|
| Eye | + | | | | | | | | | | | | | | | | | | | | | | | | | | 50 |
| Harderian Gland | + | | | | | | | | | | | | | | | | | | | | | | | | | | 50 |
| Zymbal's Gland | | | | | | | | | | | | | | | | | | | | | | | | | | 2 | |
| Carcinoma | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| Squamous Cell Papilloma | | | | | | | | | | | | | | | | | | | | | | | | | | 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: 20523 - 03

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL

Metal working fluids (Trim VX)

CAS Number: TRIMVX

Date Report Requested: 10/29/2014

Time Report Requested: 10:15:41

First Dose M/F: 07/20/09 / 07/20/09

Lab: BNW

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

URINARY SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------------------------------------|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|----|
| Kidney | + | | | | | | | | | | | | | | | | | | | | | | | | | 50 |
| Neoplasm Nos | | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Transitional Epithelium, Carcinoma | | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Urinary Bladder | + | | | | | | | | | | | | | | | | | | | | | | | | | 50 |
| Neoplasm Nos | | | | | | | | | | | | | | | | | | | | | | | | | | 1 |

SYSTEMIC LESIONS

| | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--------------------|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|----|
| Multiple Organ | + | | | | | | | | | | | | | | | | | | | | | | | | | 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: 20523 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (Trim VX)
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014
 Time Report Requested: 10:15:41
 First Dose M/F: 07/20/09 / 07/20/09
 Lab: BNW

| | | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | | females
(cont...) |
|-------------------------------|-----------------|-------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----------------------|
| WISTAR HAN RATS FEMALE | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | 30 mg/m3 | 6 | 7 | 6 | 6 | 6 | 5 | 7 | 5 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 6 | 7 | 7 | 7 | 7 | |
| | ANIMAL ID | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | | |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 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 | | |

ALIMENTARY SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Esophagus | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Large, Cecum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Large, Colon
Schwannoma Malignant, Metastatic, Uterus | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Large, Rectum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Small, Duodenum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Small, Ileum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Small, Jejunum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Liver | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Mesentery | | | | | | | | | | + | | | | | + | + | | | | | + | | | |
| Adenocarcinoma, Metastatic, Uterus
Schwannoma Malignant, Metastatic, Uterus | | | | | | | | | | | | | | | | | | | | | | | | |
| Pancreas | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Adenocarcinoma, Metastatic, Uterus | | | | | | | | | | | | | | | | | | | | | | | | |
| Salivary Glands | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Stomach, Forestomach | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |

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

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

Experiment Number: 20523 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (Trim VX)
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014
 Time Report Requested: 10:15:41
 First Dose M/F: 07/20/09 / 07/20/09
 Lab: BNW

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

Stomach, Glandular +

CARDIOVASCULAR SYSTEM

Blood Vessel +
 Heart +

ENDOCRINE SYSTEM

Adrenal Cortex +
 Adrenal Medulla +
 Pheochromocytoma Malignant
 Islets, Pancreatic +
 Parathyroid Gland + M + +
 Pituitary Gland +
 Pars Distalis, Adenoma X
 Pars Distalis, Adenoma, Multiple X
 Pars Intermedia, Adenoma
 Thyroid Gland +
 C-cell, Adenoma X
 Follicle, Adenoma

GENERAL BODY SYSTEM

NONE

* .. 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: 20523 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (Trim VX)
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014
 Time Report Requested: 10:15:41
 First Dose M/F: 07/20/09 / 07/20/09
 Lab: BNW

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

GENITAL SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Clitoral Gland | + | + | + | + | M | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Ovary | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Uterus | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Adenocarcinoma | | | | | | | | | | | | | | | | | | | | | | | | X | |
| Adenoma | | | | | | | | | | | | | | | | | | | | | | | | | X |
| Polyp Stromal | | | | | | | | | | X | | | | | | | X | | | | | | | X | |
| Polyp Stromal, Multiple | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sarcoma Stromal | | | | | | | | | | | | | | | | | | | | | | | | | |
| Schwannoma Malignant | | | | | | | | | | X | X | | | | | | | | | | | | | | |

HEMATOPOIETIC SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bone Marrow | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Lymph Node | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pancreatic, Adenocarcinoma, Metastatic, Uterus | | | | | | | | | | | | | | | | | | | | | | | | | + |
| Renal, Schwannoma Malignant, Metastatic, Uterus | | | | | | | | | | | | | | | | | | | | | | | | | X |
| Lymph Node, Bronchial | + | + | + | + | + | + | + | M | + | M | + | M | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Lymph Node, Mandibular | + | + | M | + | + | + | + | + | + | M | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Lymph Node, Mediastinal | + | + | + | + | + | + | + | + | M | + | + | + | + | + | M | + | + | + | + | + | + | + | + | + | + |
| Lymph Node, Mesenteric | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |

* .. 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: 20523 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (Trim VX)
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014
 Time Report Requested: 10:15:41
 First Dose M/F: 07/20/09 / 07/20/09
 Lab: BNW

| WISTAR HAN RATS FEMALE
30 mg/m3 | DAY ON TEST | | | | | | | | | | | | | | | | | | | | ANIMAL ID | females
(cont...) | | | |
|------------------------------------|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----------|----------------------|------|------|------|
| | 0604 | 0732 | 0684 | 0664 | 0666 | 0571 | 0757 | 0575 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0676 | 0777 | | | 0777 | 0777 | 0777 |
| | 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 | 2 | 4 | 6 | 6 | 3 | 0 | 3 | 3 | 3 | 1 | 3 | 2 | 1 | 1 | 2 | 3 | 3 | 1 | 2 | 2 | 2 | 2 | 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 | |
| | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 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 |

| | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Spleen | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Thymus | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Thymoma Benign | | | | | | | | | | | | | | X | | | | | | | | X | | |

INTEGUMENTARY SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | |
|------------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mammary Gland | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Adenoma | | | | | X | | | | | | | | | | | | | X | | | | | | |
| Carcinoma | | | | | X | | | | | | | | | | | | | | X | | | | | |
| Carcinoma, Multiple | | X | | | | | | | | | | | | | | | | | | | | X | | |
| Fibroadenoma | X | | | X | | | | | X | | | | X | | | | | | | | X | X | X | |
| Skin | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Epidermis, Squamous Cell Papilloma | | | | | | | | | | | | | | | | | | | | | | | | |

MUSCULOSKELETAL SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | |
|------------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bone | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Skeletal Muscle | | | | | + | | | | + | | | | | | | | | | | | | | | |
| Adenocarcinoma, Metastatic, Uterus | | | | | | | | | | | | | | | | | | | | | | | | |

NERVOUS SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Brain | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Granular Cell Tumor Benign | | | | | | | | | X | | | | | | | | | | | | | | | |
| Oligodendroglioma Benign | | | | | | | | | | | | | | | | | | | | | | | | |
| 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: 20523 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (Trim VX)
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014
 Time Report Requested: 10:15:41
 First Dose M/F: 07/20/09 / 07/20/09
 Lab: BNW

| Wistar Han Rats Female
30 mg/m3 | DAY ON TEST | | | | | | | | | | | | | | | | | | | | ANIMAL ID | females
(cont...) | |
|------------------------------------|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----------|----------------------|------|
| | 0604 | 0732 | 0684 | 0664 | 0666 | 0572 | 0757 | 0575 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0676 | 0777 | 0777 | | | 0777 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 6 | 7 | 6 | 6 | 6 | 5 | 7 | 5 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 6 | 7 | 7 | 7 | 7 | 7 |
| | 0 | 3 | 8 | 4 | 2 | 1 | 3 | 9 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 8 | 3 | 3 | 3 | 3 | 3 |
| | 4 | 2 | 4 | 6 | 6 | 6 | 3 | 0 | 3 | 3 | 1 | 3 | 2 | 1 | 1 | 2 | 3 | 1 | 2 | 2 | 2 | 2 | 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 | 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 |

Spinal Cord + +

RESPIRATORY SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | |
|--|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Larynx | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Lung | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Alveolar/Bronchiolar Adenoma | | | | | | | | | | | | | | | | | | | | | | | X |
| Carcinoma, Metastatic, Uterus | | | | | | | | | | | | | | | | | | | | | | | |
| Schwannoma Malignant, Metastatic, Uterus | | | | | | | | | X | | | | | | | | | | | | | | |
| Nose | + | + | + | + | + | A | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Trachea | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |

SPECIAL SENSES SYSTEM

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

URINARY SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | |
|--|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kidney | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Urinary Bladder | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Schwannoma Malignant, Metastatic, Uterus | | | | | | | | | 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: 20523 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (Trim VX)
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014
 Time Report Requested: 10:15:41
 First Dose M/F: 07/20/09 / 07/20/09
 Lab: BNW

| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------------------------|-------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----------------------|
| WISTAR HAN RATS FEMALE | DAY ON TEST | 06 | 07 | 06 | 06 | 06 | 05 | 07 | 05 | 07 | 07 | 07 | 07 | 07 | 07 | 07 | 07 | 07 | 07 | 06 | 07 | 07 | 07 | 07 | 07 | 07 | females
(cont...) |
| | 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 | 00 | 00 | |
| | | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | |

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: 20523 - 03
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 First Dose M/F: 07/20/09 / 07/20/09
 Lab: BNW

| Wistar Han Rats Female
30 mg/m3 | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | | | * TOTALS |
|------------------------------------|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------|
| | 0733 | 0732 | 0733 | 0731 | 0733 | 0762 | 0773 | 0773 | 0763 | 0773 | 0766 | 0776 | 0776 | 0766 | 0756 | 0766 | 0773 | 0759 | 0768 | 0766 | 0773 | 0773 | 0773 | 0773 | 0773 | | |
| 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 | 00551 | |

ALIMENTARY SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|
| Esophagus | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Intestine Large, Cecum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Intestine Large, Colon | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Schwannoma Malignant, Metastatic, Uterus | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Intestine Large, Rectum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Intestine Small, Duodenum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Intestine Small, Ileum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Intestine Small, Jejunum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Liver | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Mesentery | | | | + | | | | | | | | | | | | | | | + | + | + | + | | | | | | 9 |
| Adenocarcinoma, Metastatic, Uterus | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Schwannoma Malignant, Metastatic, Uterus | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Pancreas | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Adenocarcinoma, Metastatic, Uterus | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Salivary Glands | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| 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: 20523 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (Trim VX)
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014
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 First Dose M/F: 07/20/09 / 07/20/09
 Lab: BNW

| WISTAR HAN RATS FEMALE
30 mg/m3 | DAY ON TEST | | | | | | | | | | | | | | | | | | | | * TOTALS | | | | | |
|---|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------|-------|-------|-------|---------|--|
| | 0733 | 0733 | 0732 | 0733 | 0731 | 0733 | 0673 | 0773 | 0773 | 0673 | 0773 | 0673 | 0673 | 0567 | 0667 | 0773 | 0567 | 0667 | 0667 | 0773 | | 0773 | 0773 | 0773 | 0773 | |
| 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 | |
| Stomach, Glandular | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| CARDIOVASCULAR SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Blood Vessel | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Heart | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| ENDOCRINE SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Adrenal Cortex | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Adrenal Medulla
Pheochromocytoma Malignant | + | + | + | + | + | + | + | + | + | + | + | + | X | + | + | + | + | + | + | + | + | + | + | + | 50
1 | |
| Islets, Pancreatic | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| 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 | 26 | |
| Pars Distalis, Adenoma, Multiple | X | | | | | | X | | | | | | | | | | | | | | | | | 6 | | |
| Pars Intermedia, Adenoma | | | | | X | | | | | | | | | | | | | | | | | | | 1 | | |
| Thyroid Gland | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| C-cell, Adenoma | | | | | | | | | | | | | | | | | | | | X | | X | | 4 | | |
| Follicle, Adenoma | X | | | | | | | | | | | | | | X | | | | | | | | | 2 | | |
| GENERAL BODY SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NONE | | | | | | | | | | | | | | | | | | | | | | | | | | |

* .. 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: 20523 - 03
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 Lab: BNW

| WISTAR HAN RATS FEMALE | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | * TOTALS | |
|------------------------|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------|----|
| | 0733 | 0733 | 0732 | 0733 | 0731 | 0733 | 0672 | 0773 | 0773 | 0673 | 0773 | 0676 | 0676 | 0566 | 0677 | 0677 | 0573 | 0669 | 0668 | 0661 | 0733 | 0773 | 0773 | 0773 | | |
| 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 | 49 |

GENITAL SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|
| Clitoral Gland | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 49 |
| Ovary | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Uterus | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Adenocarcinoma | | | | | X | X | | | | | | | | | | | | | | | X | | | | | 4 |
| Adenoma | | | | | | | | | | | | | | | | | X | | | | | | | | | 2 |
| Polyp Stromal | | | X | | X | | | | | | | | X | | | | | | | | | | | | | 7 |
| Polyp Stromal, Multiple | | | | | | | | X | | | | | | | | | | | | | | | | | | 1 |
| Sarcoma Stromal | | | | | | | | | | | | | | | | | | | | | X | | | | | 1 |
| Schwannoma Malignant | | | | | | | X | | | | | | | | | | | | X | | | | | | | 4 |

HEMATOPOIETIC SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|
| Bone Marrow | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Lymph Node | | | | | | | | | | | | | | | | | | | | | | | | | | 2 |
| Pancreatic, Adenocarcinoma, Metastatic, Uterus | | | | | | | | | | | | | | | | | | | | | X | | | | | 1 |
| Renal, Schwannoma Malignant, Metastatic, Uterus | | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Lymph Node, Bronchial | + | + | + | + | I | + | + | + | + | M | + | + | + | + | + | + | + | + | + | + | + | M | + | + | + | 44 |
| Lymph Node, Mandibular | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | M | + | + | + | + | + | + | + | + | 47 |
| Lymph Node, Mediastinal | + | + | + | + | + | + | + | + | + | + | M | + | + | + | + | M | + | + | + | + | + | + | + | + | + | 46 |
| Lymph Node, Mesenteric | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |

* .. Total animals with tissue examined microscopically; Total animals with tumor
 + .. Tissue examined microscopically
 X .. Lesion present
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| WISTAR HAN RATS FEMALE
30 mg/m3 | DAY ON TEST | | | | | | | | | | | | | | | | | | | | * TOTALS | | |
|------------------------------------|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------|-------|------|
| | 0733 | 0733 | 0732 | 0733 | 0731 | 0733 | 0673 | 0773 | 0763 | 0773 | 0766 | 0666 | 0566 | 0676 | 0567 | 0673 | 0683 | 0664 | 0673 | 0673 | | 0673 | 0673 |
| ANIMAL ID | 00526 | 00527 | 00528 | 00529 | 00530 | 00531 | 00532 | 00533 | 00534 | 00535 | 00536 | 00537 | 00538 | 00539 | 00540 | 00541 | 00542 | 00543 | 00544 | 00545 | 00546 | 00547 | |
| Spleen | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Thymus | M | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 49 |
| Thymoma Benign | | | | X | | | | | | X | | | | | | | | X | X | X | | | 7 |
| INTEGUMENTARY SYSTEM | | | | | | | | | | | | | | | | | | | | | | | |
| Mammary Gland | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Adenoma | | | | | | | | | | | | | | | | | | | | | | | 2 |
| Carcinoma | | | | | | | | | | | | | | | | | | | | | | | 2 |
| Carcinoma, Multiple | | | | | | | | | | | | | | | | | | | | X | | | 3 |
| Fibroadenoma | | | | | | | | | | | | | | | | | | | | | | | 7 |
| Skin | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Epidermis, Squamous Cell Papilloma | | | | | | | | | | | | | | | | | | | | | | X | 1 |
| MUSCULOSKELETAL SYSTEM | | | | | | | | | | | | | | | | | | | | | | | |
| Bone | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Skeletal Muscle | | | | | | | | | | | | | | | | | | | | | | + | 3 |
| Adenocarcinoma, Metastatic, Uterus | | | | | | | | | | | | | | | | | | | | | X | | 1 |
| NERVOUS SYSTEM | | | | | | | | | | | | | | | | | | | | | | | |
| Brain | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Granular Cell Tumor Benign | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Oligodendroglioma Benign | | | | | | | | | | | X | | | | | | | | | | | | 1 |
| 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: 20523 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (Trim VX)
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014
 Time Report Requested: 10:15:41
 First Dose M/F: 07/20/09 / 07/20/09
 Lab: BNW

| WISTAR HAN RATS FEMALE

30 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 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
|--|-------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----------------|---|---|---|---|---|---|---|---|-----------|
| | ANIMAL ID | 7 | 7 | 7 | 7 | 7 | 7 | 6 | 7 | 7 | 6 | 7 | 7 | 6 | 6 | 5 | 6 | 7 | 5 | 6 | 6 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 |
| | | 3 | 3 | 3 | 3 | 3 | 1 | 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 | 3 | 3 | 3 | 3 | 3 |
| | | 3 | 3 | 2 | 3 | 1 | 3 | 3 | 2 | 3 | 3 | 2 | 8 | 4 | 7 | 6 | 7 | 2 | 3 | 9 | 8 | 1 | 4 | 3 | 2 | 3 | 3 | 2 | 3 | 2 | 3 | 2 | 3 | 2 | 3 | 1 | 3 | 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 |
| | | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 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 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 |
| | | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 0 | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | * TOTALS | | | | | | | | | |
| Spinal Cord | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 | | | | | | | | | |
| RESPIRATORY SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Larynx | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Lung | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Alveolar/Bronchiolar Adenoma | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | |
| Carcinoma, Metastatic, Uterus | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | |
| Schwannoma Malignant, Metastatic, Uterus | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | |
| Nose | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 49 |
| Trachea | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| SPECIAL SENSES SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Eye | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Harderian Gland | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Zymbal's Gland | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | |
| Carcinoma | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | |
| URINARY SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Kidney | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Urinary Bladder | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Schwannoma Malignant, Metastatic, Uterus | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 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: 20523 - 03
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (Trim VX)
CAS Number: TRIMVX

Date Report Requested: 10/29/2014
Time Report Requested: 10:15:41
First Dose M/F: 07/20/09 / 07/20/09
Lab: BNW

| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------------------------------|-------------|-----------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|--|
| WISTAR HAN RATS FEMALE | 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 | |
| | ANIMAL ID | 7 | 7 | 7 | 7 | 7 | 6 | 7 | 7 | 6 | 7 | 7 | 6 | 6 | 5 | 6 | 7 | 5 | 6 | 6 | 7 | 7 | 7 | 7 | 7 | 7 | |
| 30 mg/m3 | | 3 | 3 | 3 | 3 | 3 | 1 | 3 | 3 | 3 | 3 | 3 | 0 | 7 | 6 | 1 | 7 | 3 | 9 | 8 | 1 | 3 | 3 | 3 | 3 | 3 | |
| | | 3 | 3 | 2 | 3 | 1 | 3 | 2 | 3 | 3 | 3 | 2 | 8 | 4 | 7 | 6 | 7 | 2 | 3 | 9 | 4 | 4 | 3 | 2 | 3 | 2 | |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | |
| | | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | |
| | | 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 | |
| | | * TOTALS | | | | | | | | | | | | | | | | | | | | | | | | | |

SYSTEMIC LESIONS

Multiple Organ

+ +

50

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

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

Experiment Number: 20523 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (Trim VX)
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014
 Time Report Requested: 10:15:41
 First Dose M/F: 07/20/09 / 07/20/09
 Lab: BNW

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

ALIMENTARY SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Esophagus | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| Intestine Large, Cecum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Large, Colon | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Large, Rectum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Small, Duodenum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Small, Ileum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Small, Jejunum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Liver | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Hepatocellular Adenoma | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mesentery | | | | | | | | | | | | | + | | | | | | + | | | | | | | | | | | |
| Pancreas | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Salivary Glands | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Stomach, Forestomach | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Stomach, Glandular | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| 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: 20523 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (Trim VX)
 CAS Number: TRIMVX

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 Lab: BNW

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

CARDIOVASCULAR SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Blood Vessel | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Heart | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Schwannoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | X |

ENDOCRINE SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Adrenal Cortex | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Adenoma | | | | | | | | | | | | | X | | | | | | | | | | | | X |
| Adrenal Medulla | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | M | + | + | + | + | + | + | + | + |
| Pheochromocytoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | |
| Islets, Pancreatic | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Adenoma | | | | | | | | | | | | | | | | | | | | | | | | | |
| Parathyroid Gland | + | + | + | + | + | + | M | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Pituitary Gland | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Pars Distalis, Adenoma | X | X | | | | | | | X | | | X | | | X | | X | X | | | | | | X | X |
| Pars Distalis, Adenoma, Multiple | | | | X | | | | | | | | | | | | | | | | | | | | | |
| Thyroid Gland | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| C-cell, Adenoma | | | | | | | | | X | | | | | | | | X | | | | | | | X | |
| Follicle, Adenoma | | | | | | | | | | | | | | | | | | | | | | | | | |

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: 20523 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

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 Metal working fluids (Trim VX)
 CAS Number: TRIMVX

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 Time Report Requested: 10:15:41
 First Dose M/F: 07/20/09 / 07/20/09
 Lab: BNW

| WISTAR HAN RATS FEMALE | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | | females
(cont...) |
|------------------------|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------------------|
| | 06033 | 0436 | 0733 | 0733 | 0733 | 0733 | 0733 | 0733 | 0733 | 0733 | 0733 | 0733 | 0733 | 0733 | 0733 | 0733 | 0733 | 0733 | 0733 | 0733 | 0733 | 0733 | 0733 | 0733 | 0733 | |
| 100 mg/m3 | 007 | 007 | 007 | 007 | 007 | 007 | 007 | 007 | 007 | 007 | 007 | 007 | 007 | 007 | 007 | 007 | 007 | 007 | 007 | 007 | 007 | 007 | 007 | 007 | 007 | |
| ANIMAL ID | 07001 | 07002 | 07003 | 07004 | 07005 | 07006 | 07007 | 07008 | 07009 | 07010 | 07011 | 07012 | 07013 | 07014 | 07015 | 07016 | 07017 | 07018 | 07019 | 07020 | 07021 | 07022 | 07023 | 07024 | 07025 | |

NONE

GENITAL SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Clitoral Gland | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Ovary | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Granulosa Cell Tumor Benign | | | | | | | | | | | X | | | | | | | | | | | | | | |
| Tubulostromal Adenoma | | | | | | | | | | | | | | | | | | | | | | | | | |
| Tubulostromal Carcinoma | | | | | | | | | | | | | | | | | | | | | | | | | |
| Bilateral, Tubulostromal Adenoma | | | | | | | | | | | | | | | | | | | | | | | | | X |
| Uterus | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Adenocarcinoma | | | | | | | | | | | | | | | | | | | | | | | | | |
| Adenoma | | | | | | | | | | X | | | | | | | | | | | | | | | |
| Polyp Stromal | | | | | | | | X | | | | | | | | | | | | | | | | | |
| Schwannoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | X |

HEMATOPOIETIC SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bone Marrow | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Lymph Node | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lymph Node, Bronchial | + | + | I | + | + | + | + | + | M | + | + | M | + | M | + | + | + | + | M | + | + | M | + | M | M |
| Lymph Node, Mandibular | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Lymph Node, Mediastinal | + | + | + | + | + | + | + | + | + | M | + | + | + | + | M | + | + | + | + | + | + | + | + | + | + |
| Schwannoma Malignant, Metastatic, Lung | | | | | | | | | | | | | | | | | | | | | | | | | |

* .. 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: 20523 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (Trim VX)
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014
 Time Report Requested: 10:15:41
 First Dose M/F: 07/20/09 / 07/20/09
 Lab: BNW

| WISTAR HAN RATS FEMALE
100 mg/m3 | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | ANIMAL ID | females
(cont...) | | |
|--|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|-----------|----------------------|--|---|
| | 0
6
0
3 | 0
4
3
6 | 0
7
3
3 | 0
7
3
2 | 0
7
3
2 | 0
7
3
1 | 0
7
3
1 | 0
7
3
2 | 0
7
3
2 | 0
7
3
2 | 0
7
3
2 | 0
6
3
7 | 0
7
3
2 | 0
7
3
2 | 0
7
3
2 | 0
7
3
3 | 0
7
3
3 | 0
5
3
6 | 0
7
3
2 | 0
6
3
3 | 0
7
3
2 | 0
7
3
2 | 0
6
3
3 | 0
7
3
2 | | | | |
| Lymph Node, Mesenteric Hemangiosarcoma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | | | |
| Spleen | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | | |
| Thymus Schwannoma Malignant, Metastatic, Lung Thymoma Benign | + | + | + | M | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | | |
| | | X | | | | | | X | X | X | | | X | | | X | | | | | X | | | | | | | |
| INTEGUMENTARY SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mammary Gland Adenoma Carcinoma Carcinoma, Multiple Fibroadenoma Fibroadenoma, Multiple | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | | |
| | | | | | | | | | | | | | X | | | | | | | | | | | | | | | |
| | | | | | | | | | | X | | | | | | | | | | | | | | | | | | |
| Skin Epidermis, Squamous Cell Papilloma Subcutaneous Tissue, Histiocytic Sarcoma Subcutaneous Tissue, Schwannoma Malignant | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | X |
| MUSCULOSKELETAL SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Bone | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | | |
| Skeletal Muscle Schwannoma Malignant, Metastatic, 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: 20523 - 03
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
Metal working fluids (Trim VX)
CAS Number: TRIMVX

Date Report Requested: 10/29/2014
Time Report Requested: 10:15:41
First Dose M/F: 07/20/09 / 07/20/09
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 | ANIMAL ID | females
(cont...) | |
|-------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----------|----------------------|---|
| | 6 | 4 | 7 | 7 | 7 | 7 | 7 | 7 | 6 | 7 | 7 | 7 | 7 | 7 | 7 | 5 | 7 | 6 | 7 | 7 | 7 | 6 | 7 | | | |
| WISTAR HAN RATS FEMALE | 0 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 1 | 3 | 5 | 3 | | | |
| | 3 | 6 | 3 | 2 | 2 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 1 | 1 | 2 | 3 | 6 | 3 | 2 | 2 | 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 |
| 100 mg/m3 | 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 | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | |

NERVOUS SYSTEM

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

RESPIRATORY SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|--|---|
| Larynx | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | | |
| Lung | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | | |
| Alveolar/Bronchiolar Adenoma | | | | | | | | | | | | | | | | | | | | | | | | | |
| Alveolar/Bronchiolar Adenoma, Multiple | | | | | | | | | | X | | | | | | X | | | | | | | | | |
| Cystic Keratinizing Epithelioma | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mediastinum, Schwannoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | |
| Nose | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | | |
| Polyp | | | | | | | | | | | | | | | | | | | | | | | | | |
| Schwannoma Benign | | | | | | | | | | | | | | | | | | | | | | | | | |
| Schwannoma Malignant, Metastatic, Skin | | | | | | | | | | | | | | | | | | | | | | | | | X |
| Trachea | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | | |

SPECIAL SENSES SYSTEM

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

* .. 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: 20523 - 03
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
Metal working fluids (Trim VX)
CAS Number: TRIMVX

Date Report Requested: 10/29/2014
Time Report Requested: 10:15:41
First Dose M/F: 07/20/09 / 07/20/09
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 |
|-------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WISTAR HAN RATS FEMALE | 6 | 4 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 6 | 7 | 7 | 7 | 7 | 7 | 7 | 5 | 7 | 6 | 7 | 7 | 7 | 6 | 7 | 7 | |
| | 0 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 8 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 1 | 3 | 5 | 3 | 3 | 3 | |
| | 3 | 6 | 3 | 2 | 2 | 1 | 1 | 2 | 2 | 2 | 7 | 2 | 2 | 2 | 3 | 1 | 1 | 2 | 3 | 6 | 3 | 2 | 2 | 3 | 2 | 2 | |
| 100 mg/m3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 0 | 0 | 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 | 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 | 6 | |

females
(cont...)

Zymbal's Gland
Carcinoma

URINARY SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kidney | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Ureter | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Urinary Bladder
Adenocarcinoma, Metastatic, Uterus | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |

SYSTEMIC LESIONS

| | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---------------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Multiple Organ
Histiocytic Sarcoma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
|---------------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

* .. 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: 20523 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (Trim VX)
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014
 Time Report Requested: 10:15:41
 First Dose M/F: 07/20/09 / 07/20/09
 Lab: BNW

| WISTAR HAN RATS FEMALE | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | * TOTALS |
|------------------------|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----------|
| | 0733 | 0732 | 0733 | 0731 | 0732 | 0736 | 0735 | 0733 | 0733 | 0733 | 0734 | 0733 | 0733 | 0732 | 0734 | 0737 | 0736 | 0736 | 0737 | 0737 | 0737 | 0737 | 0736 | 0736 | |
| 100 mg/m3 | 00726 | 0077 | 0078 | 0079 | 0070 | 0071 | 0072 | 0073 | 0074 | 0075 | 0076 | 0077 | 0078 | 0079 | 0070 | 0071 | 0072 | 0073 | 0074 | 0075 | 0076 | 0077 | 0078 | 0079 | 0070 |
| ANIMAL ID | 0733 | 0732 | 0733 | 0731 | 0732 | 0736 | 0735 | 0733 | 0733 | 0733 | 0734 | 0733 | 0733 | 0732 | 0734 | 0737 | 0736 | 0736 | 0737 | 0737 | 0737 | 0737 | 0736 | 0736 | |

CARDIOVASCULAR SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|
| Blood Vessel | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Heart | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Schwannoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | 1 |

ENDOCRINE SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|---|
| Adrenal Cortex | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Adenoma | | | | | | | | | | | | | | | | | | | | | | | | | 2 |
| Adrenal Medulla | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 49 | |
| Pheochromocytoma Malignant | | | | | | | | | | | | | | | | | | | | | | | X | 1 | |
| Islets, Pancreatic | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Adenoma | | | | | | | | | | | | | | | | | | | | | | | X | 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 | 22 | |
| Pars Distalis, Adenoma, Multiple | | | | | | | | | | | | | | | | | | | | | | X | | 2 | |
| Thyroid Gland | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| C-cell, Adenoma | | | | | | | | | X | X | | | | | | | | X | | | | | | 6 | |
| Follicle, Adenoma | | | | | | | | | | | | | | | | | | | | | | 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: 20523 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (Trim VX)
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014
 Time Report Requested: 10:15:41
 First Dose M/F: 07/20/09 / 07/20/09
 Lab: BNW

| WISTAR HAN RATS FEMALE | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | * TOTALS | | |
|------------------------|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----------|------|----|
| | 0733 | 0732 | 0733 | 0731 | 0732 | 0776 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | | 0777 | |
| 100 mg/m3 | 00726 | 0077 | 0078 | 0079 | 0070 | 0071 | 0072 | 0073 | 0074 | 0075 | 0076 | 0077 | 0078 | 0079 | 0070 | 0071 | 0072 | 0073 | 0074 | 0075 | 0076 | 0077 | 0078 | 0079 | 0070 | 50 | |
| | 0077 | 0077 | 0077 | 0077 | 0077 | 0077 | 0077 | 0077 | 0077 | 0077 | 0077 | 0077 | 0077 | 0077 | 0077 | 0077 | 0077 | 0077 | 0077 | 0077 | 0077 | 0077 | 0077 | 0077 | 0077 | 0077 | 50 |

NONE

GENITAL SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|
| Clitoral Gland | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Ovary | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Granulosa Cell Tumor Benign | | | | | | | | | | | X | | | | | | | | | | | | | | | 2 |
| Tubulostromal Adenoma | | | | | | | | | | | | | | | | | | | X | | | | | | | 1 |
| Tubulostromal Carcinoma | | | | | | | | | | X | | | | | | | | | | | | | | | | 1 |
| Bilateral, Tubulostromal Adenoma | | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Uterus | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Adenocarcinoma | | | | | | | | X | | | | | | | | | | | | | | | | | | 1 |
| Adenoma | | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Polyp Stromal | | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Schwannoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | | 1 |

HEMATOPOIETIC SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|
| Bone Marrow | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Lymph Node | | | | + | | | | | | | | | | | | | | | | | | | | | | 1 |
| Lymph Node, Bronchial | + | + | + | + | + | + | M | M | + | M | + | + | + | + | + | + | M | + | + | + | + | M | M | + | + | 36 |
| Lymph Node, Mandibular | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Lymph Node, Mediastinal | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 45 |
| Schwannoma Malignant, Metastatic, Lung | | | | | | | | | | | | | | | | | | | | | | | | | | 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: 20523 - 03
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (Trim VX)
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014
 Time Report Requested: 10:15:41
 First Dose M/F: 07/20/09 / 07/20/09
 Lab: BNW

| WISTAR HAN RATS FEMALE
100 mg/m3 | DAY ON TEST | | | | | | | | | | | | | | | | | | | | | | | | * TOTALS |
|--|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------|
| | 0733 | 0732 | 0733 | 0731 | 0732 | 0736 | 0735 | 0733 | 0733 | 0733 | 0734 | 0733 | 0733 | 0733 | 0732 | 0734 | 0737 | 0736 | 0736 | 0737 | 0737 | 0737 | 0736 | 0736 | |
| ANIMAL ID | 00726 | 00707 | 00708 | 00700 | 00700 | 00700 | 00700 | 00700 | 00700 | 00700 | 00700 | 00700 | 00700 | 00700 | 00700 | 00700 | 00700 | 00700 | 00700 | 00700 | 00700 | 00700 | 00700 | 00700 | |
| Lymph Node, Mesenteric Hemangiosarcoma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 501 | |
| Spleen | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Thymus Schwannoma Malignant, Metastatic, Lung | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 491 | |
| Thymoma Benign | | | | | | X | | | | | | | | | | X | | | | X | | | | 10 | |
| INTEGUMENTARY SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mammary Gland Adenoma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 501 | |
| Mammary Gland Carcinoma | X | | | | | | | | | | | X | | | | | | | | | X | | | 4 | |
| Mammary Gland Carcinoma, Multiple | | | | | | | X | | | | | | | | | | | | X | | | | | 2 | |
| Mammary Gland Fibroadenoma | | | | | | | | | | | | | | X | | | | | X | | | | X | 4 | |
| Mammary Gland Fibroadenoma, Multiple | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| Skin Epidermis, Squamous Cell Papilloma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 502 | |
| Skin Subcutaneous Tissue, Histiocytic Sarcoma | | | | | | | | | | | | | | | X | | | | | | | X | | 1 | |
| Skin Subcutaneous Tissue, Schwannoma Malignant | | | | | X | | | | | | | | | | | | | | | | | | | 2 | |
| MUSCULOSKELETAL SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | |
| Bone | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| Skeletal Muscle Schwannoma Malignant, Metastatic, Skin | | | | | + | | | | | + | | | | | + | | | | | | | | | 41 | |

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

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Experiment Number: 20523 - 03
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL
 Metal working fluids (Trim VX)
CAS Number: TRIMVX

Date Report Requested: 10/29/2014
Time Report Requested: 10:15:41
First Dose M/F: 07/20/09 / 07/20/09
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 | 0 | 0 | 0 | |
|---|-----------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WISTAR HAN RATS FEMALE
100 mg/m3 | | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 6 | 5 | 7 | 5 | 6 | 5 | 7 | 6 | 6 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | |
| | | 3 | 3 | 3 | 1 | 3 | 1 | 0 | 3 | 3 | 3 | 8 | 9 | 3 | 7 | 8 | 7 | 3 | 1 | 0 | 0 | 3 | 3 | 3 | 2 | 3 | 3 | 3 | 5 | 2 | 3 | 6 | 6 | 6 | 6 |
| | | 3 | 2 | 3 | 1 | 2 | 6 | 5 | 3 | 3 | 3 | 4 | 3 | 3 | 2 | 4 | 7 | 2 | 3 | 9 | 8 | 3 | 3 | 5 | 2 | 5 | 2 | 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 |
| | | 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 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 |
| | | 2 | 2 | 2 | 2 | 3 | 3 | 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 | 4 | 4 | 4 |
| | | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | | | | | | | | | |
| * TOTALS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

NERVOUS SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|--|--|---|
| Brain | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | | | |
| Peripheral Nerve | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 3 |
| Spinal Cord | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 3 |

RESPIRATORY SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Larynx | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | | |
| Lung | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Alveolar/Bronchiolar Adenoma | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Alveolar/Bronchiolar Adenoma, Multiple | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 |
| Cystic Keratinizing Epithelioma | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Mediastinum, Schwannoma Malignant | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Nose | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| Polyp | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Schwannoma Benign | | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Schwannoma Malignant, Metastatic, Skin | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Trachea | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |

SPECIAL SENSES SYSTEM

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

* .. Total animals with tissue examined microscopically; Total animals with tumor
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 X .. Lesion present
 I .. Insufficient tissue
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Experiment Number: 20523 - 03
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 Species/Strain: RATS/Wistar Han

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 Metal working fluids (Trim VX)
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 Time Report Requested: 10:15:41
 First Dose M/F: 07/20/09 / 07/20/09
 Lab: BNW

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

Zymbal's Gland
 Carcinoma

+ 1
 X 1

URINARY SYSTEM

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|------------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|
| Kidney | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Ureter | | | | | | | | | + | | | | | | | | | | | | | | | | 1 |
| Urinary Bladder | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Adenocarcinoma, Metastatic, Uterus | | | | | | | | | X | | | | | | | | | | | | | | | | 1 |

SYSTEMIC LESIONS

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|---------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|
| Multiple Organ | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Histiocytic Sarcoma | | | | | | | | | | | | | | | X | | | | | | | | | | 1 |

*** END OF REPORT ***

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

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