

**Experiment Number:** 20515 - 04  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** MICE/B6C3F1

**P17: NEOPLASMS BY INDIVIDUAL ANIMAL (SYSTEMIC LESIONS ABRIDGED)**

Metal working fluids (CIMSTAR 3800)

**CAS Number:** CIMSTAR3800

**Date Report Requested:** 03/08/2013

**Time Report Requested:** 14:13:47

**First Dose M/F:** 05/05/08 / 05/05/08

**Lab:** BNW

F1\_M3

**NTP Study Number:** C20515  
**Lock Date:** 01/12/2011  
**Cage Range:** ALL  
**Date Range:** ALL  
**Reasons For Removal:** ALL  
**Removal Date Range:** ALL  
**Treatment Groups:** Include ALL  
**Study Gender:** Both  
**TDMSE Version:** 3.0.1.1\_001  
**PWG Approval Date:** NONE

Note: Animals arranged according to days on test.

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B6C3F1 MICE MALE	DAY ON TEST	0499	0541	0559	0552	0669	0664	0779	0774	0775	0779	0779	0779	0779	0779	0779	0779	0779	0779	0779	0779	0779	males (cont...)
	ANIMAL ID	00032	00045	00009	00008	00000	00002	00007	00005	00002	00002	00008	00003	00004	00006	00007	00000	00004	00005	00008	00000	00009	

**ALIMENTARY SYSTEM**

Esophagus	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Gallbladder	M	+	+	M	+	+	A	+	+	+	M	+	+	+	+	+	+	+	M	+	+	+	+
Intestine Large, Cecum	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Intestine Large, Colon	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Intestine Large, Rectum	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Intestine Small, Duodenum Adenoma	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Intestine Small, Ileum	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Intestine Small, Jejunum	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Liver	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Hepatocellular Adenoma	X	X		X												X		X				X	
Hepatocellular Adenoma, Multiple								X			X	X	X	X		X							
Hepatocellular Carcinoma			X	X			X		X		X				X								
Hepatocellular Carcinoma, Multiple						X				X													
Mesentery						+		+					+										
Hemangioma																							
Hepatocellular Carcinoma, Metastatic, Liver						X																	
Pancreas	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Carcinoma, Metastatic, Stomach, Glandular										X													

\* .. Total animals with tissue examined microscopically; Total animals with tumor  
 + .. Tissue examined microscopically  
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Lab: BNW

B6C3F1 MICE MALE	DAY ON TEST																								males (cont...)
	0499	0541	0559	0565	0592	0664	0679	0690	0704	0705	0709	0712	0719	0722	0729	0739	0749	0772	0779	0792	0799	0809	0819		
Control	0032	0045	0009	0008	0000	0002	0007	0005	0002	0002	0008	0003	0004	0006	0007	0000	0004	0005	0008	0000	0009	0003	0009		

Salivary Glands	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Stomach, Forestomach	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Stomach, Glandular Carcinoma	+	+	+	+	+	+	+	+	+	+	X	+	+	+	+	+	+	+	+	+	+	+	+
Tooth	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+

CARDIOVASCULAR SYSTEM

Blood Vessel	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Heart Carcinoma, Metastatic, Stomach, Glandular	+	+	+	+	+	+	+	+	+	+	X	+	+	+	+	+	+	+	+	+	+	+	+

ENDOCRINE SYSTEM

Adrenal Cortex Adenoma	+	+	+	+	+	+	I	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Bilateral, Subcapsular, Adenoma																							X
Subcapsular, Adenoma						X						X											
Subcapsular, Adenoma, Multiple																							X
Adrenal Medulla Bilateral, Pheochromocytoma Benign	+	+	+	+	+	+	M	+	+	M	+	+	+	+	+	+	+	+	+	+	+	+	+
								X															
Islets, Pancreatic Adenoma	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	X
Parathyroid Gland	M	M	+	+	+	M	+	M	+	M	+	+	+	M	+	+	M	+	+	M	+	+	+

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CAS Number: CIMSTAR3800

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Lab: BNW

B6C3F1 MICE MALE	DAY ON TEST																								males (cont...)	
	0499	0541	0559	0555	0552	0666	0664	0777	0779	0774	0775	0779	0772	0772	0779	0779	0779	0779	0779	0779	0779	0779	0779	0779		0779
Control	ANIMAL ID																									
	0032	0004	0000	0000	0003	0001	0003	0000	0004	0002	0002	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000
	0032	0004	0000	0000	0003	0001	0003	0000	0004	0002	0002	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000
	0032	0004	0000	0000	0003	0001	0003	0000	0004	0002	0002	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000
	0032	0004	0000	0000	0003	0001	0003	0000	0004	0002	0002	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000

Pituitary Gland	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Thyroid Gland	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+

GENERAL BODY SYSTEM

NONE

GENITAL SYSTEM

Epididymis	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Preputial Gland	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Prostate	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Seminal Vesicle	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Testes	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+

HEMATOPOIETIC SYSTEM

Bone Marrow	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Lymph Node			+						+		+														
Lymph Node, Bronchial	+	+	M	+	+	+	M	M	+	M	+	+	M	+	+	+	M	M	M	M	+	+	M	M	+
Lymph Node, Mandibular	+	M	M	+	+	M	+	+	M	+	M	+	+	+	M	M	+	M	+	+	M	+	+	M	M
Lymph Node, Mediastinal	M	+	+	+	+	M	M	+	+	+	+	+	+	M	M	+	+	+	+	+	+	+	+	+	M
Alveolar/Bronchiolar Carcinoma, Metastatic, Lung		X																							

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B6C3F1 MICE MALE	DAY ON TEST																								males (cont...)
	0 4 9 9	0 5 4 1	0 5 5 9	0 5 6 5	0 5 9 2	0 6 6 9	0 6 9 4	0 7 9 0	0 7 0 4	0 7 2 5	0 7 2 5	0 7 2 9	0 7 2 9	0 7 2 9	0 7 2 9	0 7 2 9	0 7 2 9	0 7 2 9	0 7 2 9	0 7 2 9	0 7 2 9	0 7 2 9	0 7 2 9		
Control	ANIMAL ID																								males (cont...)
	0 0 0 3 2	0 0 0 4 5	0 0 0 0 9	0 0 0 0 8	0 0 0 3 0	0 0 0 1 2	0 0 0 3 7	0 0 0 0 5	0 0 0 4 2	0 0 0 2 2	0 0 0 2 2	0 0 0 0 8	0 0 0 2 3	0 0 0 0 4	0 0 0 0 6	0 0 0 0 7	0 0 0 1 0	0 0 0 1 4	0 0 0 1 5	0 0 0 2 8	0 0 0 2 0	0 0 0 3 9	0 0 0 3 9	0 0 0 4 0	
Carcinoma, Metastatic, Stomach, Glandular																									X
Lymph Node, Mesenteric Carcinoma, Metastatic, Stomach, Glandular																									X
Spleen																									
Thymus Carcinoma, Metastatic, Stomach, Glandular																									X
<b>INTEGUMENTARY SYSTEM</b>																									
Mammary Gland																									
Skin Carcinoma, Metastatic, Stomach, Glandular Melanoma Benign																									X
<b>MUSCULOSKELETAL SYSTEM</b>																									
Bone																									
Skeletal Muscle																									
<b>NERVOUS SYSTEM</b>																									
Brain																									
Peripheral Nerve																									
Spinal Cord																									
<b>RESPIRATORY SYSTEM</b>																									

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B6C3F1 MICE MALE	DAY ON TEST																								males (cont...)
	0 4 9 9	0 5 4 1	0 5 5 9	0 5 6 5	0 5 9 2	0 6 6 9	0 6 9 4	0 7 0 9	0 7 2 4	0 7 2 5	0 7 2 5	0 7 2 9	0 7 2 9	0 7 2 9	0 7 2 9	0 7 2 9	0 7 2 9	0 7 2 9	0 7 2 9	0 7 2 9	0 7 2 9	0 7 2 9	0 7 2 9		
Control	ANIMAL ID																								
	0 0 0 3 2	0 0 0 4 5	0 0 0 0 9	0 0 0 0 8	0 0 0 3 0	0 0 0 1 2	0 0 0 3 7	0 0 0 0 5	0 0 0 4 2	0 0 0 2 2	0 0 0 2 8	0 0 0 2 3	0 0 0 0 4	0 0 0 0 6	0 0 0 0 7	0 0 0 1 0	0 0 0 1 4	0 0 0 1 5	0 0 0 2 8	0 0 0 2 0	0 0 0 3 9	0 0 0 3 0	0 0 0 4 0	0 0 0 4 4	
Larynx	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Lung	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Alveolar/Bronchiolar Adenoma																									
Alveolar/Bronchiolar Carcinoma						X							X												
Alveolar/Bronchiolar Carcinoma, Multiple		X																							
Carcinoma, Metastatic, Harderian Gland																									
Carcinoma, Metastatic, Stomach, Glandular												X													
Hepatocellular Carcinoma, Metastatic, Liver				X				X		X	X						X								
Nose	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Pleura		+																							
Alveolar/Bronchiolar Carcinoma, Metastatic, Lung		X																							
Trachea	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	

SPECIAL SENSES SYSTEM

Eye	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Harderian Gland	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Adenoma																						X		
Carcinoma										X													X	X
Bilateral, Carcinoma																								

URINARY SYSTEM

Kidney	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Carcinoma, Metastatic, Stomach, Glandular													X											
Urinary Bladder	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+

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		DAY ON TEST																																																						
<b>B6C3F1 MICE MALE</b>		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	<b>Control</b>		4	5	5	5	5	6	6	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
		9	4	5	6	9	6	9	0	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2																												
		9	1	9	5	2	9	4	9	4	5	5	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9																												
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																												
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		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	4	0	0	3	1	3	0	4	2	2	0	0	0	0	1	1	1	1	2	2	3	3	4	4	4	4		2	5	9	8	0	2	7	5	2	2	8	3	4	6	7	0	4	5	8	0	9	3	9	0	4		
Hemangiosarcoma		X																																																						

### SYSTEMIC LESIONS

Multiple Organ	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Histiocytic Sarcoma										X																						
Lymphoma Malignant											X																					X

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B6C3F1 MICE MALE	DAY ON TEST																								* TOTALS		
	0729	0729	0730	0730	0733	0733	0733	0733	0733	0733	0733	0733	0733	0733	0733	0733	0733	0733	0733	0733	0733	0733	0733	0733			
Control	ANIMAL ID																								* TOTALS		
	0047	0047	0047	0047	0047	0047	0047	0047	0047	0047	0047	0047	0047	0047	0047	0047	0047	0047	0047	0047	0047	0047	0047	0047		0047	
Salivary Glands	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50		
Stomach, Forestomach	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50		
Stomach, Glandular Carcinoma	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50 1		
Tooth	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50		
<b>CARDIOVASCULAR SYSTEM</b>																											
Blood Vessel	+	+	+	+	+	M	M	M	M	+	+	+	+	+	+	+	+	M	+	+	+	+	+	+	45		
Heart Carcinoma, Metastatic, Stomach, Glandular	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50 1		
<b>ENDOCRINE SYSTEM</b>																											
Adrenal Cortex Adenoma	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49 2		
Bilateral, Subcapsular, Adenoma														X											1		
Subcapsular, Adenoma														X				X							7		
Subcapsular, Adenoma, Multiple			X						X					X				X			X				1		
Adrenal Medulla Bilateral, Pheochromocytoma Benign	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	48 1		
Islets, Pancreatic Adenoma	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50 2		
Parathyroid Gland	M	+	+	+	+	M	M	M	+	+	+	+	+	+	M	+	M	+	+	+	M	+	+	+	34		

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B6C3F1 MICE MALE	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																										
Control	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	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3																										
	9	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																										
	4	5	0	1	1	1	1	2	2	2	2	2	2	3	3	3	3	4	4	4	4	0	1	3																									
7	0	1	1	3	6	9	1	3	4	5	6	7	4	5	6	8	1	3	6	9	2	7	1																										
Carcinoma, Metastatic, Stomach, Glandular																								1																									
Lymph Node, Mesenteric																								+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49	
Carcinoma, Metastatic, Stomach, Glandular																								1																									
Spleen																								+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
Thymus																								+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	M	+	+	+	M	+	+	+	M	41	
Carcinoma, Metastatic, Stomach, Glandular																								1																									
<b>INTEGUMENTARY SYSTEM</b>																																																	
Mammary Gland																								M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	1	
Skin																								+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
Carcinoma, Metastatic, Stomach, Glandular																								1																									
Melanoma Benign																								1																									
<b>MUSCULOSKELETAL SYSTEM</b>																																																	
Bone																								+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
Skeletal Muscle																								1																									
<b>NERVOUS SYSTEM</b>																																																	
Brain																								+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
Peripheral Nerve																								1																									
Spinal Cord																								1																									
<b>RESPIRATORY SYSTEM</b>																																																	

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

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

Experiment Number: 20515 - 04  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: MICE/B6C3F1

P17: NEOPLASMS BY INDIVIDUAL ANIMAL (SYSTEMIC LESIONS ABRIDGED)  
 Metal working fluids (CIMSTAR 3800)  
 CAS Number: CIMSTAR3800

Date Report Requested: 03/08/2013  
 Time Report Requested: 14:13:47  
 First Dose M/F: 05/05/08 / 05/05/08  
 Lab: BNW

B6C3F1 MICE MALE	DAY ON TEST																									* TOTALS	
	07 29	07 29	07 30	07 30	07 30	07 30	07 30	07 30	07 30	07 30	07 30	07 30	07 30	07 30	07 30	07 30	07 30	07 30	07 30	07 30	07 30	07 30	07 30	07 30	07 30		
Control	ANIMAL ID																									* TOTALS	
	0047	0000	0000	0001	0001	0003	0006	0009	0001	0003	0004	0005	0006	0007	0004	0005	0006	0008	0001	0003	0006	0009	0002	0007	0001		0008
Larynx	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
Lung	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
Alveolar/Bronchiolar Adenoma											X						X			X				X	5		
Alveolar/Bronchiolar Carcinoma						X				X		X	X	X							X			X	7		
Alveolar/Bronchiolar Carcinoma, Multiple																									1		
Carcinoma, Metastatic, Harderian Gland							X																		1		
Carcinoma, Metastatic, Stomach, Glandular																									1		
Hepatocellular Carcinoma, Metastatic, Liver																									5		
Nose	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50		
Pleura																									1		
Alveolar/Bronchiolar Carcinoma, Metastatic, Lung																									1		
Trachea	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50		
<b>SPECIAL SENSES SYSTEM</b>																											
Eye	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50		
Harderian Gland	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50		
Adenoma			X			X								X				X		X	X				7		
Carcinoma							X																		4		
Bilateral, Carcinoma																				X					1		
<b>URINARY SYSTEM</b>																											
Kidney	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50		
Carcinoma, Metastatic, Stomach, Glandular																									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: 20515 - 04

**P17: NEOPLASMS BY INDIVIDUAL ANIMAL (SYSTEMIC LESIONS ABRIDGED)**

Date Report Requested: 03/08/2013

Test Type: CHRONIC

Metal working fluids (CIMSTAR 3800)

Time Report Requested: 14:13:47

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: CIMSTAR3800

First Dose M/F: 05/05/08 / 05/05/08

Species/Strain: MICE/B6C3F1

Lab: BNW

<b>B6C3F1 MICE MALE</b>	DAY ON TEST	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
		2	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
<b>Control</b>	ANIMAL ID	9	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		4	5	0	1	1	1	1	2	2	2	2	2	2	3	3	3	3	4	4	4	4	0	1	3	4
		7	0	1	1	3	6	9	1	3	4	5	6	7	4	5	6	8	1	3	6	9	2	7	1	8
																								<b>* TOTALS</b>		
Hemangiosarcoma																								<b>1</b>		

**SYSTEMIC LESIONS**

Multiple Organ	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	<b>50</b>
Histiocytic Sarcoma																										<b>1</b>
Lymphoma Malignant					X																					<b>3</b>

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

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



B6C3F1 MICE MALE 10 mg/m3	DAY ON TEST																									males (cont...)
	0 4 3 9	0 5 4 7	0 5 5 6	0 5 6 5	0 5 9 0	0 5 9 1	0 5 9 1	0 5 9 6	0 5 9 8	0 6 2 0	0 6 2 8	0 6 3 2	0 6 4 7	0 6 6 2	0 6 7 7	0 6 7 6	0 7 0 9	0 7 1 3	0 7 2 7	0 7 2 9	0 7 2 9	0 7 2 9	0 7 2 9	0 7 2 9		
	0 0 2 2 5	0 0 2 4 2	0 0 2 3 0	0 0 2 3 4	0 0 2 1 6	0 0 2 3 3	0 0 2 3 2	0 0 2 3 7	0 0 2 4 9	0 0 2 4 5	0 0 2 4 7	0 0 2 1 8	0 0 2 0 4	0 0 2 0 8	0 0 2 4 7	0 0 2 1 0	0 0 2 1 8	0 0 2 2 1	0 0 2 0 1	0 0 2 3 0	0 0 2 0 0	0 0 2 1 1	0 0 2 1 4	0 0 2 1 5	0 0 2 1 7	
ANIMAL ID																										
Salivary Glands	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Stomach, Forestomach	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Stomach, Glandular	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Tooth	+			+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<b>CARDIOVASCULAR SYSTEM</b>																										
Blood Vessel	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Heart	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Pericardium, Alveolar/Bronchiolar Carcinoma, Metastatic, Lung		X																								
<b>ENDOCRINE SYSTEM</b>																										
Adrenal Cortex	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Subcapsular, Adenoma						X																				
Adrenal Medulla	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Islets, Pancreatic	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Adenoma																										
Parathyroid Gland	M	M	+	M	+	+	M	M	+	M	+	+	+	+	+	+	M	M	M	+	M	M	+	+	+	
Pituitary Gland	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Thyroid Gland	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<b>GENERAL BODY SYSTEM</b>																										

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

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

Experiment Number: 20515 - 04  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: MICE/B6C3F1

**P17: NEOPLASMS BY INDIVIDUAL ANIMAL (SYSTEMIC LESIONS ABRIDGED)**  
 Metal working fluids (CIMSTAR 3800)  
 CAS Number: CIMSTAR3800

Date Report Requested: 03/08/2013  
 Time Report Requested: 14:13:47  
 First Dose M/F: 05/05/08 / 05/05/08  
 Lab: BNW

B6C3F1 MICE 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...)
		4	5	5	5	5	5	5	5	5	6	6	6	6	6	7	7	7	7	7	7	7	7	7		
		3	4	5	6	9	9	9	9	2	2	3	4	6	7	0	0	1	2	2	2	2	2	2		
		9	7	6	5	0	1	1	6	8	0	8	2	7	2	6	9	3	7	9	9	9	9	9		
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
		2	4	3	3	1	2	3	3	4	4	2	1	0	0	4	1	2	0	3	0	0	1	1		
		5	2	0	4	6	3	2	7	9	5	7	8	4	8	7	0	8	1	1	2	5	1	4		

Tissue NOS +  
 Mediastinum, Alveolar/Bronchiolar Carcinoma, Metastatic, Lung X  
 Mediastinum, Hepatocellular Carcinoma, Metastatic, Liver X

**GENITAL SYSTEM**

Epididymis	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Preputial Gland	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Prostate	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	+
Seminal Vesicle Adenoma	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	X	+	+	+	+	+	+	+
Testes Interstitial Cell, Adenoma	+	+	+	+	+	+	+	+	+	X	+	+	+	+	+	+	+	+	+	+	+	+	+	+

**HEMATOPOIETIC SYSTEM**

Bone Marrow	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Lymph Node											+					+									
Lymph Node, Bronchial Alveolar/Bronchiolar Carcinoma, Metastatic, Lung	M	+	+	+	+	M	M	+	+	M	+	M	M	+	M	M	+	+	+	+	+	+	+	+	
Lymph Node, Mandibular	+	M	M	+	+	+	+	+	+	+	M	+	M	+	+	+	M	+	+	+	+	+	M	M	M
Lymph Node, Mediastinal	+	+	+	+	+	+	+	+	+	+	+	+	+	+	M	+	+	M	+	M	+	+	+	M	+

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



Experiment Number: 20515 - 04

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P17: NEOPLASMS BY INDIVIDUAL ANIMAL (SYSTEMIC LESIONS ABRIDGED)

Metal working fluids (CIMSTAR 3800)

CAS Number: CIMSTAR3800

Date Report Requested: 03/08/2013

Time Report Requested: 14:13:47

First Dose M/F: 05/05/08 / 05/05/08

Lab: BNW

<b>B6C3F1 MICE MALE</b>	<b>10 mg/m3</b>	DAY ON TEST	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		ANIMAL ID	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			4	5	5	5	5	5	5	5	5	5	6	6	6	6	6	6	7	7	7	7	7	7	7	7	7	7

males (cont...)

Alveolar/Bronchiolar Carcinoma, Metastatic, Lung	X																										
Lymph Node, Mesenteric Hemangiosarcoma	+ +																										
Spleen Hemangiosarcoma	+ X																										
Thymus	M M M + + + + M + + + + + + M + + + + M M + + + + +																										

**INTEGUMENTARY SYSTEM**

Mammary Gland	M M
Skin	+ +

**MUSCULOSKELETAL SYSTEM**

Bone Maxilla, Carcinoma, Metastatic, Harderian Gland	+ X
Skeletal Muscle	+ +

**NERVOUS SYSTEM**

Brain	+ +
Peripheral Nerve	+ +
Spinal Cord	+ +

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

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

Experiment Number: 20515 - 04

P17: NEOPLASMS BY INDIVIDUAL ANIMAL (SYSTEMIC LESIONS ABRIDGED)

Date Report Requested: 03/08/2013

Test Type: CHRONIC

Metal working fluids (CIMSTAR 3800)

Time Report Requested: 14:13:47

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: CIMSTAR3800

First Dose M/F: 05/05/08 / 05/05/08

Species/Strain: MICE/B6C3F1

Lab: BNW

<b>B6C3F1 MICE MALE</b>	DAY ON TEST	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		4	5	5	5	5	5	5	5	6	6	6	6	6	7	7	7	7	7	7	7	7	7	7	7
		3	4	5	6	9	9	9	9	2	2	3	4	6	7	0	0	1	2	2	2	2	2	2	2
		9	7	6	5	0	1	1	6	8	0	8	2	7	2	7	6	9	3	7	9	9	9	9	9
<b>10 mg/m3</b>	ANIMAL ID	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
		2	4	3	3	1	2	3	3	4	4	2	1	0	0	4	1	2	0	3	0	0	1	1	1
5	2	0	4	6	3	2	7	9	5	7	8	4	8	7	0	8	1	1	2	5	1	4	5	7	
																							<b>males (cont...)</b>		

RESPIRATORY SYSTEM

Larynx	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Lung	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Alveolar/Bronchiolar Adenoma																						X	
Alveolar/Bronchiolar Carcinoma			X							X	X						X		X				X
Alveolar/Bronchiolar Carcinoma, Multiple																						X	
Hepatocellular Carcinoma, Metastatic, Liver				X			X					X		X		X	X						
Nose	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Trachea	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+

SPECIAL SENSES SYSTEM

Eye	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Harderian Gland	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Adenoma																							X
Carcinoma											X		X		X								

URINARY SYSTEM

Kidney	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Urinary Bladder	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+

SYSTEMIC LESIONS

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

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

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

Experiment Number: 20515 - 04

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

**P17: NEOPLASMS BY INDIVIDUAL ANIMAL (SYSTEMIC LESIONS ABRIDGED)**

Metal working fluids (CIMSTAR 3800)

CAS Number: CIMSTAR3800

Date Report Requested: 03/08/2013

Time Report Requested: 14:13:47

First Dose M/F: 05/05/08 / 05/05/08

Lab: BNW

B6C3F1 MICE 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	* TOTALS
		7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	
10 mg/m3	ANIMAL ID	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3		
		9	9	9	9	9	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	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	
		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
		1	2	2	3	3	4	5	0	0	1	1	2	2	2	3	3	4	4	4	4	4	0	0
		9	1	6	8	9	4	0	7	9	2	3	0	4	9	3	5	0	1	3	6	8	3	6

**ALIMENTARY SYSTEM**

Esophagus	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
Gallbladder	+	+	+	+	+		M	M	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	44
Intestine Large, Cecum	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
Intestine Large, Colon Adenoma	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50 1
Intestine Large, Rectum	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
Intestine Small, Duodenum	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	48
Intestine Small, Ileum	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
Intestine Small, Jejunum Adenoma	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	48 1
Intestine Small, Jejunum Carcinoma													X											1
Liver	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
Hemangiosarcoma, Multiple																								1
Hepatoblastoma																								1
Hepatocellular Adenoma	X				X			X			X		X			X	X			X	X	X	X	18
Hepatocellular Adenoma, Multiple						X	X																	6
Hepatocellular Carcinoma		X								X			X	X						X	X	X		15
Hepatocellular Carcinoma, Multiple																								2
Mesentery													+			+					+			5
Pancreas	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50

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

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

Experiment Number: 20515 - 04

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P17: NEOPLASMS BY INDIVIDUAL ANIMAL (SYSTEMIC LESIONS ABRIDGED)

Metal working fluids (CIMSTAR 3800)

CAS Number: CIMSTAR3800

Date Report Requested: 03/08/2013

Time Report Requested: 14:13:47

First Dose M/F: 05/05/08 / 05/05/08

Lab: BNW

B6C3F1 MICE MALE 10 mg/m3	DAY ON TEST		ANIMAL ID																				* TOTALS			
	0729	0729	0729	0729	0729	0729	0729	0729	0729	0729	0729	0729	0729	0729	0729	0729	0729	0729	0729	0729	0729	0729		0729		
Salivary Glands	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50		
Stomach, Forestomach	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50		
Stomach, Glandular	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50		
Tooth	+	+	+	+	+	+		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	47		
<b>CARDIOVASCULAR SYSTEM</b>																										
Blood Vessel	+	+	+	+	+	I	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49		
Heart	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50		
Pericardium, Alveolar/Bronchiolar Carcinoma, Metastatic, Lung																								1		
<b>ENDOCRINE SYSTEM</b>																										
Adrenal Cortex	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50		
Subcapsular, Adenoma			X																			X	X	4		
Adrenal Medulla	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50		
Islets, Pancreatic	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50		
Adenoma				X								X												2		
Parathyroid Gland	+	+	M	+	+	+	+	M	+	+	M	M	M	M	M	M	M	+	+	+	M	+	+	M	+	28
Pituitary Gland	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
Thyroid Gland	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	

GENERAL BODY SYSTEM

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

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

Experiment Number: 20515 - 04

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P17: NEOPLASMS BY INDIVIDUAL ANIMAL (SYSTEMIC LESIONS ABRIDGED)

Metal working fluids (CIMSTAR 3800)

CAS Number: CIMSTAR3800

Date Report Requested: 03/08/2013

Time Report Requested: 14:13:47

First Dose M/F: 05/05/08 / 05/05/08

Lab: BNW

B6C3F1 MICE 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
	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
10 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	
		2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
		9	9	9	9	9	9	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	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	
		1	2	2	3	3	4	5	0	0	1	1	2	2	2	3	3	4	4	4	4	4	0	0	
		9	1	6	8	9	4	0	7	9	2	3	0	4	9	3	5	0	1	3	6	8	3	6	
																								* TOTALS	

Tissue NOS	2
Mediastinum, Alveolar/Bronchiolar Carcinoma, Metastatic, Lung	1
Mediastinum, Hepatocellular Carcinoma, Metastatic, Liver	1

GENITAL SYSTEM

Epididymis	+ +	50
Preputial Gland	+ + + + M +	49
Prostate	+ +	49
Seminal Vesicle Adenoma	+ +	50 1
Testes Interstitial Cell, Adenoma	+ +	50 1

HEMATOPOIETIC SYSTEM

Bone Marrow	+ +	50
Lymph Node	+ +	3
Lymph Node, Bronchial Alveolar/Bronchiolar Carcinoma, Metastatic, Lung	+ + + + + M + M + + + + + + + M + M M M M M + + + M +	31 1
Lymph Node, Mandibular	M + + + M M + M + + + + + + + + + + M + + + M + +	36
Lymph Node, Mediastinal	+ M + + M + + + + + + + + + + + + M 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: 20515 - 04

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P17: NEOPLASMS BY INDIVIDUAL ANIMAL (SYSTEMIC LESIONS ABRIDGED)

Metal working fluids (CIMSTAR 3800)

CAS Number: CIMSTAR3800

Date Report Requested: 03/08/2013

Time Report Requested: 14:13:47

First Dose M/F: 05/05/08 / 05/05/08

Lab: BNW

B6C3F1 MICE 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	* TOTALS	
	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		
		7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7		
Alveolar/Bronchiolar Carcinoma, Metastatic, Lung		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Lymph Node, Mesenteric Hemangiosarcoma		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50 1	
Spleen Hemangiosarcoma		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	X	+	+	50 2	
Thymus		M	+	+	+	+	+	+	M	+	+	+	+	+	+	+	M	+	+	+	+	+	M	+	M	38
<b>INTEGUMENTARY SYSTEM</b>																										
Mammary Gland		M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	0
Skin		+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49
<b>MUSCULOSKELETAL SYSTEM</b>																										
Bone Maxilla, Carcinoma, Metastatic, Harderian Gland		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50 1
Skeletal Muscle																										3
<b>NERVOUS SYSTEM</b>																										
Brain		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
Peripheral Nerve																										2
Spinal Cord																										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: 20515 - 04  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: MICE/B6C3F1

P17: NEOPLASMS BY INDIVIDUAL ANIMAL (SYSTEMIC LESIONS ABRIDGED)  
 Metal working fluids (CIMSTAR 3800)  
 CAS Number: CIMSTAR3800

Date Report Requested: 03/08/2013  
 Time Report Requested: 14:13:47  
 First Dose M/F: 05/05/08 / 05/05/08  
 Lab: BNW

B6C3F1 MICE 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
10 mg/m3	0029	0029	0029	0029	0029	0029	0029	0029	0029	0029	0029	0029	0029	0029	0029	0029	0029	0029	0029	0029	0029	0029	0029	0029	0029	
ANIMAL ID	0011	0011	0016	0018	0019	0024	0027	0030	0037	0039	0042	0043	0044	0049	0053	0055	0059	0061	0063	0066	0068	0073	0076	0082	0086	

**RESPIRATORY SYSTEM**

Larynx	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
Lung	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
Alveolar/Bronchiolar Adenoma																				X						2
Alveolar/Bronchiolar Carcinoma								X																		7
Alveolar/Bronchiolar Carcinoma, Multiple																										1
Hepatocellular Carcinoma, Metastatic, Liver		X								X				X												9
Nose	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
Trachea	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50

**SPECIAL SENSES SYSTEM**

Eye	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
Harderian Gland	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
Adenoma									X								X									3
Carcinoma														X				X								5

**URINARY SYSTEM**

Kidney	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
Urinary Bladder	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50

**SYSTEMIC LESIONS**

Multiple Organ	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
Lymphoma Malignant				X														X								5

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

Experiment Number: 20515 - 04  
Test Type: CHRONIC  
Route: RESPIRATORY EXPOSURE WHOLE BODY  
Species/Strain: MICE/B6C3F1

P17: NEOPLASMS BY INDIVIDUAL ANIMAL (SYSTEMIC LESIONS ABRIDGED)  
Metal working fluids (CIMSTAR 3800)  
CAS Number: CIMSTAR3800

Date Report Requested: 03/08/2013  
Time Report Requested: 14:13:47  
First Dose M/F: 05/05/08 / 05/05/08  
Lab: BNW

B6C3F1 MICE 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		
		4	4	5	5	5	5	6	6	6	6	6	6	6	7	7	7	7	7	7	7	7	7	7	7	
30 mg/m3	ANIMAL ID	3	4	3	3	7	8	3	4	4	6	8	9	1	2	2	2	2	2	2	2	2	2	2		
		8	7	4	4	3	1	6	0	0	5	3	3	8	5	9	9	9	9	9	9	9	9	9		
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4		
		0	3	3	3	2	4	4	0	2	3	0	1	3	3	0	0	1	1	1	1	2	2	3		
		9	6	7	8	8	1	7	2	4	5	5	9	9	2	1	4	6	2	4	5	6	1	3	4	5

males  
(cont...)

ALIMENTARY SYSTEM

Esophagus	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Gallbladder	+	+	M	+	+	+	M	+	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	+
Intestine Large, Cecum	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Intestine Large, Colon Serosa, Carcinoma, Metastatic, Kidney	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Intestine Large, Rectum	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Intestine Small, Duodenum Carcinoma Hemangiosarcoma	A	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Intestine Small, Ileum Hemangioma	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Intestine Small, Jejunum Adenoma	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Liver	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Hepatoblastoma																								
Hepatocellular Adenoma							X					X	X		X	X		X			X	X		
Hepatocellular Adenoma, Multiple										X							X		X		X		X	
Hepatocellular Carcinoma	X							X					X					X		X				
Hepatocellular Carcinoma, Multiple										X										X				
Hepatocholangiocarcinoma	X		X																					
Sarcoma								X																

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

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









Experiment Number: 20515 - 04

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P17: NEOPLASMS BY INDIVIDUAL ANIMAL (SYSTEMIC LESIONS ABRIDGED)

Metal working fluids (CIMSTAR 3800)

CAS Number: CIMSTAR3800

Date Report Requested: 03/08/2013

Time Report Requested: 14:13:47

First Dose M/F: 05/05/08 / 05/05/08

Lab: BNW

B6C3F1 MICE MALE 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	ANIMAL ID	males (cont...)
	4	4	5	5	5	5	6	6	6	6	6	6	7	7	7	7	7	7	7	7	7	7	7	7		
	3	4	3	3	7	8	3	4	4	4	6	8	9	1	2	2	2	2	2	2	2	2	2	2	0	
	8	7	4	4	3	1	6	0	0	5	3	3	8	5	9	9	9	9	9	9	9	9	9	9	0	
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	0	
	0	3	3	3	2	4	4	0	2	3	0	1	3	3	0	0	0	1	1	1	1	2	2	3	0	
	9	6	7	8	8	1	7	2	4	5	5	9	9	2	1	4	6	2	4	5	6	1	3	4	0	

Brain	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Peripheral Nerve																								
Spinal Cord																								

RESPIRATORY SYSTEM

Larynx	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Lung	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Alveolar/Bronchiolar Adenoma					X									X	X			X	X		X			
Alveolar/Bronchiolar Carcinoma				X	X	X			X	X											X			
Carcinoma, Metastatic, Kidney			X																					
Hepatocellular Carcinoma, Metastatic, Liver										X														
Hepatocholangiocarcinoma, Metastatic, Liver			X																					
Nose	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Trachea	+	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	I	+	I	+	+

SPECIAL SENSES SYSTEM

Eye	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Harderian Gland	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Adenoma														X			X							
Carcinoma																								

URINARY SYSTEM

Kidney	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Renal Tubule, Adenoma																								

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

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







Experiment Number: 20515 - 04  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: MICE/B6C3F1

**P17: NEOPLASMS BY INDIVIDUAL ANIMAL (SYSTEMIC LESIONS ABRIDGED)**  
 Metal working fluids (CIMSTAR 3800)  
 CAS Number: CIMSTAR3800

Date Report Requested: 03/08/2013  
 Time Report Requested: 14:13:47  
 First Dose M/F: 05/05/08 / 05/05/08  
 Lab: BNW

B6C3F1 MICE MALE 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	* TOTALS
	ANIMAL ID	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	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
		9	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		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	5	0	0	1	1	1	1	2	2	3	4	4	4	4	4	0	1	2	2	2	2	3	3	
		6	0	3	8	0	1	3	8	0	6	1	0	2	3	4	8	7	7	2	5	7	9	0	3	

Adrenal Medulla	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
Pheochromocytoma Benign						X																			1
Islets, Pancreatic	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
Adenoma																									1
Parathyroid Gland	+	+	M	+	M	+	M	M	+	+	M	M	M	M	+	+	+	M	+	M	+	M	M	M	27
Pituitary Gland	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
Thyroid Gland	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	M	+	+	+	+	+	+	49

**GENERAL BODY SYSTEM**

NONE

**GENITAL SYSTEM**

Epididymis	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
Preputial Gland	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	48
Prostate	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
Seminal Vesicle	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
Testes	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50

**HEMATOPOIETIC SYSTEM**

Bone Marrow	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
Lymph Node																									1

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

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



Experiment Number: 20515 - 04

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P17: NEOPLASMS BY INDIVIDUAL ANIMAL (SYSTEMIC LESIONS ABRIDGED)

Metal working fluids (CIMSTAR 3800)

CAS Number: CIMSTAR3800

Date Report Requested: 03/08/2013

Time Report Requested: 14:13:47

First Dose M/F: 05/05/08 / 05/05/08

Lab: BNW

B6C3F1 MICE MALE 30 mg/m3	DAY ON TEST		ANIMAL ID																				* TOTALS			
	0 7 2 9	0 7 2 9	0 7 3 0	0 7 3 0	0 7 3 0	0 7 3 0	0 7 3 0	0 7 3 0	0 7 3 0	0 7 3 0	0 7 3 0	0 7 3 0	0 7 3 0	0 7 3 0	0 7 3 0	0 7 3 0	0 7 3 0	0 7 3 0	0 7 3 0	0 7 3 0	0 7 3 0	0 7 3 0				
Renal, Sarcoma, Metastatic, Liver																								1		
Lymph Node, Bronchial Alveolar/Bronchiolar Carcinoma, Metastatic, Lung	+	+	M	+	M	+	M	+	+	+	M	+	+	M	+	M	M	M	M	+	M	M	M	26 1		
Lymph Node, Mandibular	+	+	+	+	+	M	+	M	+	+	M	+	+	+	+	+	+	+	+	+	M	+	+	34		
Lymph Node, Mediastinal	+	+	+	+	M	+	+	+	+	+	+	M	+	+	+	+	M	M	+	+	+	+	M	32		
Lymph Node, Mesenteric	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	48		
Spleen	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49		
Thymus	+	+	+	M	M	+	+	+	+	+	M	+	+	+	+	+	M	+	M	+	+	+	+	39		
<b>INTEGUMENTARY SYSTEM</b>																										
Mammary Gland	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	1		
Skin	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50 1 1 1		
Carcinoma, Metastatic, Kidney																								1		
Subcutaneous Tissue, Fibroma																								1		
Subcutaneous Tissue, Fibrous Histiocytoma			X																					1		
<b>MUSCULOSKELETAL SYSTEM</b>																										
Bone	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50		
Skeletal Muscle																								2		
Carcinoma, Metastatic, Kidney																								1		
<b>NERVOUS SYSTEM</b>																										

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

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

Experiment Number: 20515 - 04

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

**P17: NEOPLASMS BY INDIVIDUAL ANIMAL (SYSTEMIC LESIONS ABRIDGED)**

Metal working fluids (CIMSTAR 3800)

CAS Number: CIMSTAR3800

Date Report Requested: 03/08/2013

Time Report Requested: 14:13:47

First Dose M/F: 05/05/08 / 05/05/08

Lab: BNW

B6C3F1 MICE MALE 30 mg/m3	DAY ON TEST		ANIMAL ID																				* TOTALS			
	0 7 2 9	0 7 2 9	0 7 3 0	0 7 3 0	0 7 3 0	0 7 3 0	0 7 3 0	0 7 3 0	0 7 3 0	0 7 3 0	0 7 3 0	0 7 3 0	0 7 3 0	0 7 3 0	0 7 3 0	0 7 3 0	0 7 3 0	0 7 3 0	0 7 3 0	0 7 3 0	0 7 3 0	0 7 3 0		0 7 3 0		
Brain	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50		
Peripheral Nerve																								1		
Spinal Cord																								1		
<b>RESPIRATORY SYSTEM</b>																										
Larynx	+	+	+	I	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49		
Lung	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50		
Alveolar/Bronchiolar Adenoma							X												X					8		
Alveolar/Bronchiolar Carcinoma								X						X										8		
Carcinoma, Metastatic, Kidney																								1		
Hepatocellular Carcinoma, Metastatic, Liver																								1		
Hepatocholangiocarcinoma, Metastatic, Liver																								1		
Nose	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50		
Trachea	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	47		
<b>SPECIAL SENSES SYSTEM</b>																										
Eye	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50		
Harderian Gland	+	+	+	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	+	+	+	+	+	49		
Adenoma																			X				X	4		
Carcinoma								X																1		
<b>URINARY SYSTEM</b>																										
Kidney	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50		
Renal Tubule, Adenoma											X													1		

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

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



Experiment Number: 20515 - 04

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P17: NEOPLASMS BY INDIVIDUAL ANIMAL (SYSTEMIC LESIONS ABRIDGED)

Metal working fluids (CIMSTAR 3800)

CAS Number: CIMSTAR3800

Date Report Requested: 03/08/2013

Time Report Requested: 14:13:47

First Dose M/F: 05/05/08 / 05/05/08

Lab: BNW

<b>B6C3F1 MICE MALE</b>	DAY ON TEST	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	ANIMAL ID	3	5	5	6	6	6	6	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
<b>100 mg/m3</b>	DAY ON TEST	4	7	9	0	2	6	6	8	0	0	2	2	2	2	2	2	2	2	2	2	2	2	2
	ANIMAL ID	4	2	0	7	3	1	2	7	6	9	9	9	9	9	9	9	9	9	9	9	9	9	9
	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	DAY ON TEST	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
	ANIMAL ID	3	2	4	1	0	3	2	0	2	4	0	0	0	0	1	1	1	1	1	2	2	3	4
	DAY ON TEST	1	8	8	2	7	4	9	2	7	7	1	3	6	8	1	5	7	8	9	1	4	2	0
	ANIMAL ID																							

males (cont...)

ALIMENTARY SYSTEM

Esophagus	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Squamous Cell Papilloma									X															
Gallbladder	+	+	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	+	+	+	+	M	M	
Intestine Large, Cecum	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Intestine Large, Colon	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Intestine Large, Rectum	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Intestine Small, Duodenum	A	+	+	A	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Adenoma																								
Intestine Small, Ileum	A	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Intestine Small, Jejunum	A	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Liver	+	+	+	+	+	I	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Hepatocellular Adenoma	X			X													X	X				X	X	
Hepatocellular Adenoma, Multiple		X	X				X					X	X					X	X					
Hepatocellular Carcinoma		X	X				X	X						X	X			X					X	
Hepatocellular Carcinoma, Multiple					X		X																	
Mesentery							+								+									
Pancreas	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
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: 20515 - 04  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: MICE/B6C3F1

**P17: NEOPLASMS BY INDIVIDUAL ANIMAL (SYSTEMIC LESIONS ABRIDGED)**  
 Metal working fluids (CIMSTAR 3800)  
 CAS Number: CIMSTAR3800

Date Report Requested: 03/08/2013  
 Time Report Requested: 14:13:47  
 First Dose M/F: 05/05/08 / 05/05/08  
 Lab: BNW

B6C3F1 MICE MALE	DAY ON TEST	ANIMAL ID																				males (cont...)	
		0344	0352	0355	0366	0366	0366	0366	0366	0366	0366	0366	0366	0366	0366	0366	0366	0366	0366	0366	0366		0366
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

Spleen	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Thymus	+	+	M	+	+	+	+	M	M	M	+	+	+	+	+	+	+	+	+	+	+	M	+

**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
Skin	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Melanoma Benign											X												
Subcutaneous Tissue, Hemangiosarcoma																					X		
Subcutaneous Tissue, Mast Cell Tumor																					X		
Malignant																							

**MUSCULOSKELETAL SYSTEM**

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

**NERVOUS SYSTEM**

Brain	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Peripheral Nerve												+											
Spinal Cord																							

**RESPIRATORY SYSTEM**

Larynx	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
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: 20515 - 04

P17: NEOPLASMS BY INDIVIDUAL ANIMAL (SYSTEMIC LESIONS ABRIDGED)

Date Report Requested: 03/08/2013

Test Type: CHRONIC

Metal working fluids (CIMSTAR 3800)

Time Report Requested: 14:13:47

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: CIMSTAR3800

First Dose M/F: 05/05/08 / 05/05/08

Species/Strain: MICE/B6C3F1

Lab: BNW

B6C3F1 MICE 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	ANIMAL ID	males (cont...)
	3	5	5	6	6	6	6	6	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7		
	4	7	9	0	2	6	6	8	0	0	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
	4	2	0	7	3	1	2	7	6	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9		
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	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		
	3	2	4	1	0	3	2	0	2	4	0	0	0	0	1	1	1	1	1	2	2	3	4	4		
	1	8	8	2	7	4	9	2	7	7	1	3	6	8	1	5	7	8	9	1	4	2	0	2		

Alveolar/Bronchiolar Adenoma X X

Alveolar/Bronchiolar Carcinoma X X

Alveolar/Bronchiolar Carcinoma, Multiple X X X

Hepatocellular Carcinoma, Metastatic, Liver X

Mast Cell Tumor Malignant, Metastatic, Uncertain Primary Site X

Nose +

Trachea +

SPECIAL SENSES SYSTEM

Eye +

Harderian Gland Adenoma +

Carcinoma X

Bilateral, Adenoma X X

URINARY SYSTEM

Kidney +

Renal Tubule, Adenoma X

Ureter +

Urinary Bladder +

SYSTEMIC LESIONS

Multiple Organ Lymphoma Malignant +

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

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





Experiment Number: 20515 - 04

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P17: NEOPLASMS BY INDIVIDUAL ANIMAL (SYSTEMIC LESIONS ABRIDGED)

Metal working fluids (CIMSTAR 3800)

CAS Number: CIMSTAR3800

Date Report Requested: 03/08/2013

Time Report Requested: 14:13:47

First Dose M/F: 05/05/08 / 05/05/08

Lab: BNW

B6C3F1 MICE 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	* TOTALS	
	ANIMAL ID	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	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3		
		9	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
		6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6		
		4	4	0	0	1	1	2	2	2	3	3	3	3	4	0	1	1	2	2	3	3	3	4	4		
		4	6	4	9	4	6	0	2	6	0	5	6	9	5	5	0	3	3	5	3	7	8	1	9		
Stomach, Forestomach		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
Stomach, Glandular		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
Tooth		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
<b>CARDIOVASCULAR SYSTEM</b>																											
Blood Vessel	M	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	48	
Heart		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
<b>ENDOCRINE SYSTEM</b>																											
Adrenal Cortex		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
Adenoma											X														4		
Subcapsular, Adenoma					X		X							X											6		
Adrenal Medulla		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
Islets, Pancreatic		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
Adenoma																							X		1		
Parathyroid Gland		+	M	+	+	+	+	M	M	M	M	+	M	M	+	+	M	M	+	M	+	M	+	M	21		
Pituitary Gland		+	+	+	M	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	48	
Thyroid Gland		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
<b>GENERAL BODY SYSTEM</b>																											
Tissue 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: 20515 - 04  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: MICE/B6C3F1

**P17: NEOPLASMS BY INDIVIDUAL ANIMAL (SYSTEMIC LESIONS ABRIDGED)**  
 Metal working fluids (CIMSTAR 3800)  
 CAS Number: CIMSTAR3800

Date Report Requested: 03/08/2013  
 Time Report Requested: 14:13:47  
 First Dose M/F: 05/05/08 / 05/05/08  
 Lab: BNW

<b>B6C3F1 MICE MALE</b>	DAY ON TEST	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	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		
<b>100 mg/m3</b>	ANIMAL ID	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
		6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6			
		4	4	0	0	1	1	2	2	2	3	3	3	3	4	0	1	1	2	2	3	3	4	4	5	<b>* TOTALS</b>	
		4	6	4	9	4	6	0	2	6	0	5	6	9	5	5	0	3	3	5	3	7	8	1	9	0	

Mediastinum, Alveolar/Bronchiolar Carcinoma, Metastatic, Lung **1**

**GENITAL SYSTEM**

Epididymis	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	<b>50</b>
Penis																										<b>1</b>
Preputial Gland	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	<b>49</b>
Prostate	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	<b>50</b>
Seminal Vesicle	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	<b>50</b>
Testes	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	<b>50</b>

**HEMATOPOIETIC SYSTEM**

Bone Marrow	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	<b>50</b>	
Mast Cell Tumor Malignant, Metastatic, Skin																										<b>1</b>	
Lymph Node																										<b>1</b>	
Lymph Node, Bronchial	M	+	M	M	M	M	+	M	+	M	M	M	M	+	+	M	+	M	M	+	M	M	M	M	<b>18</b>		
Lymph Node, Mandibular	+	+	+	+	M	+	+	M	M	M	+	M	+	+	+	+	+	M	M	+	+	+	+	+	<b>33</b>		
Lymph Node, Mediastinal	M	+	+	+	+	+	M	M	+	+	+	+	+	+	+	M	+	+	+	M	+	M	+	+	M	M	<b>35</b>
Alveolar/Bronchiolar Carcinoma, Metastatic, Lung																										<b>1</b>	
Lymph Node, Mesenteric	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	<b>49</b>	

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

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

Experiment Number: 20515 - 04  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: MICE/B6C3F1

**P17: NEOPLASMS BY INDIVIDUAL ANIMAL (SYSTEMIC LESIONS ABRIDGED)**  
 Metal working fluids (CIMSTAR 3800)  
 CAS Number: CIMSTAR3800

Date Report Requested: 03/08/2013  
 Time Report Requested: 14:13:47  
 First Dose M/F: 05/05/08 / 05/05/08  
 Lab: BNW

B6C3F1 MICE MALE 100 mg/m3	DAY ON TEST																				* TOTALS			
	0729	0729	0730	0730	0733	0733	0733	0733	0733	0733	0733	0733	0733	0733	0733	0733	0733	0733	0733	0733		0733		
ANIMAL ID	0044	0046	0064	0069	0004	0001	0001	0002	0002	0002	0003	0003	0003	0004	0005	0005	0000	0003	0003	0005	0007			
	Spleen	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49	
	Thymus	M	+	+	M	+	+	+	+	+	+	+	+	+	+	+	M	+	+	+	M	+	+	41
	<b>INTEGUMENTARY SYSTEM</b>																							
Mammary Gland	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	0		
Skin	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50		
Melanoma Benign																						1		
Subcutaneous Tissue, Hemangiosarcoma																						1		
Subcutaneous Tissue, Mast Cell Tumor																						1		
Malignant																								
<b>MUSCULOSKELETAL SYSTEM</b>																								
Bone	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50		
Skeletal Muscle																						3		
<b>NERVOUS SYSTEM</b>																								
Brain	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50		
Peripheral Nerve																						2		
Spinal Cord																						2		
<b>RESPIRATORY SYSTEM</b>																								
Larynx	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50		
Lung	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50		

\* .. Total animals with tissue examined microscopically; Total animals with tumor  
 + .. Tissue examined microscopically  
 X .. Lesion present  
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Experiment Number: 20515 - 04

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

**P17: NEOPLASMS BY INDIVIDUAL ANIMAL (SYSTEMIC LESIONS ABRIDGED)**

Metal working fluids (CIMSTAR 3800)

CAS Number: CIMSTAR3800

Date Report Requested: 03/08/2013

Time Report Requested: 14:13:47

First Dose M/F: 05/05/08 / 05/05/08

Lab: BNW

B6C3F1 MICE MALE 100 mg/m3	DAY ON TEST																				* TOTALS		
	0729	0729	0730	0730	0730	0730	0730	0730	0730	0730	0730	0730	0730	0730	0730	0730	0730	0730	0730	0730		0730	
ANIMAL ID	00644	00664	00664	00666	00666	00666	00666	00666	00666	00666	00666	00666	00666	00666	00666	00666	00666	00666	00666	00666	00666		
Alveolar/Bronchiolar Adenoma	X								X	X								X		X		9	
Alveolar/Bronchiolar Carcinoma			X						X									X				5	
Alveolar/Bronchiolar Carcinoma, Multiple															X							5	
Hepatocellular Carcinoma, Metastatic, Liver									X													3	
Mast Cell Tumor Malignant, Metastatic, Uncertain Primary Site					1	1	2	2	2	3	3	3	3	4	0	1	1	2	2	3	3	4	5
Nose	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
Trachea	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
<b>SPECIAL SENSES SYSTEM</b>																							
Eye	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
Harderian Gland Adenoma	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
Carcinoma																						2	
Bilateral, Adenoma																						1	
<b>URINARY SYSTEM</b>																							
Kidney	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
Renal Tubule, Adenoma																						1	
Ureter																						1	
Urinary Bladder	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	M	+	+	+	+	49	
<b>SYSTEMIC LESIONS</b>																							
Multiple Organ Lymphoma Malignant	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
																	X					1	

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

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

Experiment Number: 20515 - 04

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

**P17: NEOPLASMS BY INDIVIDUAL ANIMAL (SYSTEMIC LESIONS ABRIDGED)**

Metal working fluids (CIMSTAR 3800)

CAS Number: CIMSTAR3800

Date Report Requested: 03/08/2013

Time Report Requested: 14:13:47

First Dose M/F: 05/05/08 / 05/05/08

Lab: BNW

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\*\*\* END OF MALE DATA \*\*\*

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\* .. Total animals with tissue examined microscopically; Total animals with tumor  
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BLANK .. Not examined microscopically

Experiment Number: 20515 - 04  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: MICE/B6C3F1

**P17: NEOPLASMS BY INDIVIDUAL ANIMAL (SYSTEMIC LESIONS ABRIDGED)**  
 Metal working fluids (CIMSTAR 3800)  
 CAS Number: CIMSTAR3800

Date Report Requested: 03/08/2013  
 Time Report Requested: 14:13:47  
 First Dose M/F: 05/05/08 / 05/05/08  
 Lab: BNW

<b>B6C3F1 MICE FEMALE</b>	DAY ON TEST	0 1 9 4	0 3 4 5	0 5 2 7	0 5 4 9	0 6 0 5	0 6 1 3	0 6 7 3	0 6 8 6	0 7 0 2	0 7 0 5	0 7 3 1	0 7 3 1	0 7 3 1	0 7 3 1	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 7 3 2	<b>females (cont...)</b>
	<b>Control</b>	ANIMAL ID	0 0 1 1 1 9	0 0 1 1 2 0	0 0 1 1 1 4	0 0 1 1 1 4	0 0 1 1 0 3	0 0 1 1 0 7	0 0 1 1 0 8	0 0 1 2 5 7	0 0 1 1 0 7	0 0 1 1 0 7	0 0 1 1 0 7	0 0 1 1 2 6	0 0 1 1 2 9	0 0 1 1 3 5	0 0 1 1 4 0	0 0 1 1 4 1	0 0 1 1 4 8	0 0 1 1 0 1	0 0 1 1 0 5	0 0 1 1 0 6	

**ALIMENTARY SYSTEM**

Esophagus	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Gallbladder	M	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Intestine Large, Cecum	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Intestine Large, Colon	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Intestine Large, Rectum	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Intestine Small, Duodenum Adenoma	A	+	+	A	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+
Intestine Small, Ileum	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Intestine Small, Jejunum	A	+	+	+	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+
Liver	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Hepatoblastoma														X									
Hepatocellular Adenoma			X	X	X								X	X		X	X						
Hepatocellular Adenoma, Multiple																			X				
Hepatocellular Carcinoma					X							X	X										
Mesentery										+				+	+		+				+		+
Pancreas	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Salivary Glands	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Stomach, Forestomach	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+

\* .. Total animals with tissue examined microscopically; Total animals with tumor  
 + .. Tissue examined microscopically  
 X .. Lesion present  
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Experiment Number: 20515 - 04

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P17: NEOPLASMS BY INDIVIDUAL ANIMAL (SYSTEMIC LESIONS ABRIDGED)

Metal working fluids (CIMSTAR 3800)

CAS Number: CIMSTAR3800

Date Report Requested: 03/08/2013

Time Report Requested: 14:13:47

First Dose M/F: 05/05/08 / 05/05/08

Lab: BNW

B6C3F1 MICE FEMALE	DAY ON TEST																								females (cont...)
	01	03	05	06	06	06	06	06	06	07	07	07	07	07	07	07	07	07	07	07	07	07	07		
Control	09	04	02	04	00	01	07	08	08	00	00	03	03	03	03	03	03	03	03	03	03	03	03		
	04	05	07	09	05	03	07	03	06	02	05	01	01	01	01	01	01	01	01	01	01	01	01		
	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	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00		
	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01		
	01	01	02	01	01	00	00	01	02	05	01	00	01	02	02	03	04	04	04	04	00	00	00		
	09	00	04	04	03	07	08	07	07	00	02	02	08	06	09	05	00	01	07	08	01	05	06		

Stomach, Glandular

+ +

Tooth

CARDIOVASCULAR SYSTEM

Blood Vessel

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

Heart

+ +

ENDOCRINE SYSTEM

Adrenal Cortex

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

Adrenal Medulla  
Pheochromocytoma Benign

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

Islets, Pancreatic  
Adenoma

+ +

Parathyroid Gland

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

Pituitary Gland  
Pars Distalis, Adenoma

+  
X X

Thyroid Gland

+ +

GENERAL BODY SYSTEM

Tissue NOS

+ +

GENITAL SYSTEM

\* .. Total animals with tissue examined microscopically; Total animals with tumor  
+ .. Tissue examined microscopically  
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Experiment Number: 20515 - 04

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

**P17: NEOPLASMS BY INDIVIDUAL ANIMAL (SYSTEMIC LESIONS ABRIDGED)**

Metal working fluids (CIMSTAR 3800)

CAS Number: CIMSTAR3800

Date Report Requested: 03/08/2013

Time Report Requested: 14:13:47

First Dose M/F: 05/05/08 / 05/05/08

Lab: BNW

| B6C3F1 MICE FEMALE | DAY ON TEST      |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |   |   | females<br>(cont...) |
|--------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|---|---|----------------------|
|                    | 0<br>1<br>9<br>4 | 0<br>3<br>4<br>5 | 0<br>5<br>2<br>7 | 0<br>5<br>4<br>9 | 0<br>6<br>0<br>5 | 0<br>6<br>1<br>3 | 0<br>6<br>7<br>7 | 0<br>6<br>8<br>3 | 0<br>6<br>8<br>6 | 0<br>7<br>0<br>2 | 0<br>7<br>0<br>5 | 0<br>7<br>3<br>1 | 0<br>7<br>3<br>1 | 0<br>7<br>3<br>1 | 0<br>7<br>3<br>1 | 0<br>7<br>3<br>1 | 0<br>7<br>3<br>1 | 0<br>7<br>3<br>1 | 0<br>7<br>3<br>2 | 0<br>7<br>3<br>2 | 0<br>7<br>3<br>2 | 0<br>7<br>3<br>2 | 0<br>7<br>3<br>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                | 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                | 2                | 1                | 1                | 0                | 0                | 1                | 2                | 5                | 1                | 0                | 1                | 2                | 2                | 3                | 4                | 4                | 4                | 4                | 0                | 0                | 0                | 0 |   |                      |
|                    | 9                | 0                | 4                | 4                | 3                | 7                | 8                | 7                | 7                | 0                | 2                | 2                | 8                | 6                | 9                | 5                | 0                | 1                | 7                | 8                | 1                | 5                | 6                | 9 | 6 |                      |

|                             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|-----------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Clitoral Gland              | M | + | + | + | + | + | + | M | + | + | M | + | + | M | + | + | + | + | + | + | M | + | + | + |
| Ovary                       | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Cystadenoma                 |   |   |   |   |   |   |   |   |   |   | X |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Granulosa Cell Tumor Benign |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Luteoma                     |   |   |   |   |   |   |   |   |   |   |   | X |   |   |   |   |   |   |   |   |   |   |   |   |
| Uterus                      | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Hemangiosarcoma             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Leiomyoma                   |   |   |   |   |   |   |   |   |   |   |   |   | X |   |   |   |   |   |   |   |   |   |   |   |

**HEMATOPOIETIC SYSTEM**

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

**INTEGUMENTARY SYSTEM**

\* .. Total animals with tissue examined microscopically; Total animals with tumor  
 + .. Tissue examined microscopically  
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Experiment Number: 20515 - 04  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: MICE/B6C3F1

P17: NEOPLASMS BY INDIVIDUAL ANIMAL (SYSTEMIC LESIONS ABRIDGED)  
 Metal working fluids (CIMSTAR 3800)  
 CAS Number: CIMSTAR3800

Date Report Requested: 03/08/2013  
 Time Report Requested: 14:13:47  
 First Dose M/F: 05/05/08 / 05/05/08  
 Lab: BNW

| B6C3F1 MICE FEMALE<br>Control   | DAY ON TEST      |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |   |                            | ANIMAL ID            | females<br>(cont...) |
|---|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|---|----------------------------|----------------------|----------------------|
|   | 0<br>1<br>9<br>4 | 0<br>3<br>4<br>5 | 0<br>5<br>2<br>7 | 0<br>5<br>4<br>9 | 0<br>6<br>0<br>5 | 0<br>6<br>1<br>3 | 0<br>6<br>7<br>7 | 0<br>6<br>8<br>3 | 0<br>6<br>8<br>6 | 0<br>7<br>0<br>2 | 0<br>7<br>0<br>5 | 0<br>7<br>3<br>1 | 0<br>7<br>3<br>1 | 0<br>7<br>3<br>1 | 0<br>7<br>3<br>1 | 0<br>7<br>3<br>1 | 0<br>7<br>3<br>1 | 0<br>7<br>3<br>1 | 0<br>7<br>3<br>2 | 0<br>7<br>3<br>2 | 0<br>7<br>3<br>2 | 0<br>7<br>3<br>2 | 0<br>7<br>3<br>2 |   |                            |                      |                      |
| Mammary Gland<br>Carcinoma  | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | + | 0<br>0<br>1<br>1<br>1<br>9 | females<br>(cont...) |                      |
| Skin<br>Hemangiosarcoma<br>Lip, Squamous Cell Papilloma<br>Subcutaneous Tissue, Hemangiosarcoma                       | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | + | 0<br>0<br>1<br>1<br>2<br>4 | females<br>(cont...) |                      |
| <b>MUSCULOSKELETAL SYSTEM</b>   |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |   |                            |                      |                      |
| Bone<br>Femur, Sarcoma  | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | + | 0<br>0<br>1<br>1<br>1<br>9 | females<br>(cont...) |                      |
| Skeletal Muscle   |                  |                  |                  |                  | +                |                  |                  | +                |                  |                  | +                |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |   | 0<br>0<br>1<br>1<br>2<br>4 | females<br>(cont...) |                      |
| <b>NERVOUS SYSTEM</b>   |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |   |                            |                      |                      |
| Brain   | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | + | 0<br>0<br>1<br>1<br>1<br>9 | females<br>(cont...) |                      |
| Peripheral Nerve  |                  |                  |                  |                  | +                |                  |                  | +                |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |   | 0<br>0<br>1<br>1<br>2<br>4 | females<br>(cont...) |                      |
| Spinal Cord   |                  |                  |                  |                  | +                |                  |                  | +                |                  |                  |                  | +                |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |   | 0<br>0<br>1<br>1<br>2<br>4 | females<br>(cont...) |                      |
| <b>RESPIRATORY SYSTEM</b>   |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |   |                            |                      |                      |
| Larynx  | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | I                | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | + | 0<br>0<br>1<br>1<br>1<br>9 | females<br>(cont...) |                      |
| Lung<br>Alveolar/Bronchiolar Adenoma<br>Alveolar/Bronchiolar Carcinoma<br>Hepatocellular Carcinoma, Metastatic, Liver | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | +                | + | 0<br>0<br>1<br>1<br>2<br>4 | females<br>(cont...) |                      |

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

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

Experiment Number: 20515 - 04  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: MICE/B6C3F1

**P17: NEOPLASMS BY INDIVIDUAL ANIMAL (SYSTEMIC LESIONS ABRIDGED)**  
 Metal working fluids (CIMSTAR 3800)  
 CAS Number: CIMSTAR3800

Date Report Requested: 03/08/2013  
 Time Report Requested: 14:13:47  
 First Dose M/F: 05/05/08 / 05/05/08  
 Lab: BNW

| B6C3F1 MICE FEMALE           | DAY ON TEST |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | females<br>(cont...) |      |      |      |
|------------------------------|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----------------------|------|------|------|
|                              | 0194        | 0345 | 0555 | 0666 | 0777 | 0888 | 0999 | 1000 | 1111 | 1222 | 1333 | 1444 | 1555 | 1666 | 1777 | 1888 | 1999 | 2000 | 2111 | 2222 | 2333 | 2444 | 2555 | 2666 |                      | 2777 | 2888 | 2999 |
| Control                      | ANIMAL ID   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                      |      |      |      |
|                              | 0011        | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011                 | 0011 | 0011 | 0011 |
|                              | 1111        | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111                 | 1111 | 1111 | 1111 |
|                              | 1111        | 1121 | 1121 | 1111 | 1111 | 1100 | 1100 | 1121 | 1125 | 1151 | 1100 | 1122 | 1122 | 1133 | 1144 | 1144 | 1144 | 1144 | 1100 | 1100 | 1100 | 1100 | 1100 | 1100 | 1100                 | 1100 | 1100 | 1100 |
| Nose                         | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +                    | +    | +    |      |
| Trachea                      | +           | +    | +    | +    | +    | +    | +    | +    | M    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +                    | +    | +    |      |
| <b>SPECIAL SENSES SYSTEM</b> |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                      |      |      |      |
| Eye                          | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +                    | +    | +    |      |
| Harderian Gland Adenoma      | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +                    | +    | +    |      |
| <b>URINARY SYSTEM</b>        |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                      |      |      |      |
| Kidney                       | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +                    | +    | +    |      |
| Urinary Bladder              | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +                    | +    | +    |      |
| <b>SYSTEMIC LESIONS</b>      |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                      |      |      |      |
| Multiple Organ               | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +                    | +    | +    |      |
| Histiocytic Sarcoma          |             |      |      |      |      | X    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                      |      |      |      |
| Lymphoma Malignant           |             |      |      |      |      |      |      |      |      | X    |      |      | X    | X    | X    | X    |      |      |      |      |      |      |      |      |                      |      |      |      |

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

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

Experiment Number: 20515 - 04

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P17: NEOPLASMS BY INDIVIDUAL ANIMAL (SYSTEMIC LESIONS ABRIDGED)

Metal working fluids (CIMSTAR 3800)

CAS Number: CIMSTAR3800

Date Report Requested: 03/08/2013

Time Report Requested: 14:13:47

First Dose M/F: 05/05/08 / 05/05/08

Lab: BNW

|                           |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                 |
|---------------------------|-------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----------------|
| <b>B6C3F1 MICE FEMALE</b> | DAY ON TEST | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | <b>* TOTALS</b> |
|                           |             | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 |                 |
| <b>Control</b>            | ANIMAL ID   | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |                 |
|                           |             | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |                 |
|                           | 2           | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 4 | 0 | 0 | 1 | 1 | 2 | 2 | 2 | 3 | 3 |                 |
|                           | 0           | 2 | 5 | 0 | 1 | 3 | 4 | 7 | 8 | 9 | 2 | 3 | 5 | 9 | 3 | 4 | 1 | 5 | 1 | 3 | 8 | 2 | 6 |                 |

**ALIMENTARY SYSTEM**

|                                  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |    |
|----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|
| Esophagus                        | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Gallbladder                      | + | M | + | M | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | M | 46 |
| Intestine Large, Cecum           | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Intestine Large, Colon           | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 49 |
| Intestine Large, Rectum          | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Intestine Small, Duodenum        | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 47 |
| Adenoma                          |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 1  |
| Intestine Small, Ileum           | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 49 |
| Intestine Small, Jejunum         | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 48 |
| Liver                            | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Hepatoblastoma                   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 1  |
| Hepatocellular Adenoma           |   |   |   |   |   |   |   |   |   |   |   |   | X |   |   |   |   |   |   |   |   | X |   | 10 |
| Hepatocellular Adenoma, Multiple | X |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | X | X |   |   |   |   |   | 4  |
| Hepatocellular Carcinoma         |   |   | X | X |   |   |   | X | X | X |   |   |   | X |   |   | X |   |   |   |   |   |   | 10 |
| Mesentery                        |   | + |   |   | + | + |   |   |   |   |   | + | + |   |   |   | + | + | + |   |   | + | + | 16 |
| Pancreas                         | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| 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: 20515 - 04

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

**P17: NEOPLASMS BY INDIVIDUAL ANIMAL (SYSTEMIC LESIONS ABRIDGED)**

Metal working fluids (CIMSTAR 3800)

CAS Number: CIMSTAR3800

Date Report Requested: 03/08/2013

Time Report Requested: 14:13:47

First Dose M/F: 05/05/08 / 05/05/08

Lab: BNW

| B6C3F1 MICE FEMALE                         | DAY ON TEST |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | * TOTALS |      |  |
|--|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----------|------|--|
|  | 0732        | 0733 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 |          |      |  |
| Control                                    | ANIMAL ID   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | * TOTALS |      |  |
|  | 0012        | 0011 | 0012 | 0013 | 0013 | 0013 | 0013 | 0013 | 0013 | 0013 | 0013 | 0013 | 0013 | 0013 | 0013 | 0013 | 0013 | 0013 | 0013 | 0013 | 0013 | 0013 | 0013 | 0013 |          | 0013 |  |
| Stomach, Glandular                         | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | 50       |      |  |
| Tooth                                      |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 1        |      |  |
| <b>CARDIOVASCULAR SYSTEM</b>               |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |          |      |  |
| Blood Vessel                               | +           | +    | M    | +    | +    | +    | +    | M    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | 46       |      |  |
| Heart                                      | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | 50       |      |  |
| <b>ENDOCRINE SYSTEM</b>                    |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |          |      |  |
| Adrenal Cortex                             | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | 49       |      |  |
| Adrenal Medulla<br>Pheochromocytoma Benign | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | 49<br>1  |      |  |
| Islets, Pancreatic<br>Adenoma              | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | 50<br>1  |      |  |
| Parathyroid Gland                          | M           | +    | M    | M    | +    | +    | M    | +    | +    | M    | M    | +    | M    | M    | +    | +    | +    | +    | +    | M    | M    | M    | M    | M    | 26       |      |  |
| Pituitary Gland<br>Pars Distalis, Adenoma  | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | 50<br>5  |      |  |
| Thyroid Gland                              | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | 50       |      |  |
| <b>GENERAL BODY SYSTEM</b>                 |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |          |      |  |
| Tissue NOS                                 |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 3        |      |  |

**GENITAL SYSTEM**

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

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

Experiment Number: 20515 - 04  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: MICE/B6C3F1

**P17: NEOPLASMS BY INDIVIDUAL ANIMAL (SYSTEMIC LESIONS ABRIDGED)**  
 Metal working fluids (CIMSTAR 3800)  
 CAS Number: CIMSTAR3800

Date Report Requested: 03/08/2013  
 Time Report Requested: 14:13:47  
 First Dose M/F: 05/05/08 / 05/05/08  
 Lab: BNW

| B6C3F1 MICE FEMALE          | DAY ON TEST |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | * TOTALS |      |   |    |    |    |
|-----------------------------|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----------|------|---|----|----|----|
|                             | 0732        | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 |          | 0732 |   |    |    |    |
| Control                     | ANIMAL ID   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | * TOTALS |      |   |    |    |    |
|                             | 0012        | 0012 | 0012 | 0012 | 0012 | 0012 | 0012 | 0012 | 0012 | 0012 | 0012 | 0012 | 0012 | 0012 | 0012 | 0012 | 0012 | 0012 | 0012 | 0012 |          | 0012 |   |    |    |    |
| Clitoral Gland              | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | M    | +        | +    | + | +  | 44 |    |
| Ovary                       | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +        | +    | + | +  | 50 |    |
| Cystadenoma                 |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |          |      |   |    | 2  |    |
| Granulosa Cell Tumor Benign |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |          |      |   |    | 1  |    |
| Luteoma                     |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |          |      |   |    | 1  |    |
| Uterus                      | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +        | +    | + | 50 |    |    |
| Hemangiosarcoma             |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |          |      |   |    | 1  |    |
| Leiomyoma                   |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |          |      |   |    | 1  |    |
| <b>HEMATOPOIETIC SYSTEM</b> |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |          |      |   |    |    |    |
| Bone Marrow                 | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +        | +    | + | +  | 50 |    |
| Sarcoma                     |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |          |      |   |    | 1  |    |
| Lymph Node                  | +           | +    |      |      |      | +    |      |      |      |      |      |      |      | +    |      | +    |      |      |      |      |          |      | + |    | 11 |    |
| Lymph Node, Bronchial       | +           | +    | M    | M    | +    | M    | +    | M    | M    | M    | +    | M    | +    | +    | +    | +    | M    | +    | M    | M    | M        | +    | + | M  | M  | 26 |
| Lymph Node, Mandibular      | +           | +    | +    | M    | +    | M    | M    | +    | +    | +    | +    | M    | +    | +    | +    | +    | +    | M    | +    | +    | +        | +    | + | +  | 41 |    |
| Lymph Node, Mediastinal     | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +        | +    | + | +  | 43 |    |
| Lymph Node, Mesenteric      | +           | +    | +    | +    | M    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +        | +    | M | +  | +  | 48 |
| Spleen                      | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +        | +    | + | +  | 50 |    |
| Hemangiosarcoma             |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |          |      |   |    | 1  |    |
| Thymus                      | M           | +    | +    | +    | +    | +    | +    | M    | +    | +    | +    | +    | +    | +    | M    | +    | +    | +    | +    | +    | +        | +    | + | +  | 44 |    |
| <b>INTEGUMENTARY SYSTEM</b> |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |          |      |   |    |    |    |

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

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

Experiment Number: 20515 - 04

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

**P17: NEOPLASMS BY INDIVIDUAL ANIMAL (SYSTEMIC LESIONS ABRIDGED)**

Metal working fluids (CIMSTAR 3800)

CAS Number: CIMSTAR3800

Date Report Requested: 03/08/2013

Time Report Requested: 14:13:47

First Dose M/F: 05/05/08 / 05/05/08

Lab: BNW

| B6C3F1 MICE FEMALE                          | DAY ON TEST |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | * TOTALS |      |  |
|---|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----------|------|--|
|   | 0732        | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 |          |      |  |
| Control                                     | ANIMAL ID   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | * TOTALS |      |  |
|   | 0012        | 0012 | 0012 | 0012 | 0012 | 0012 | 0012 | 0012 | 0012 | 0012 | 0012 | 0012 | 0012 | 0012 | 0012 | 0012 | 0012 | 0012 | 0012 | 0012 | 0012 | 0012 | 0012 | 0012 |          | 0012 |  |
| Mammary Gland Carcinoma                     | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | 50<br>2  |      |  |
| Skin Hemangiosarcoma                        | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | 50<br>1  |      |  |
| Lip, Squamous Cell Papilloma                |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 1        |      |  |
| Subcutaneous Tissue, Hemangiosarcoma        |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 1        |      |  |
| <b>MUSCULOSKELETAL SYSTEM</b>               |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |          |      |  |
| Bone Femur, Sarcoma                         | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | 50<br>1  |      |  |
| Skeletal Muscle                             |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 3        |      |  |
| <b>NERVOUS SYSTEM</b>                       |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |          |      |  |
| Brain                                       | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | 50       |      |  |
| Peripheral Nerve                            |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 2        |      |  |
| Spinal Cord                                 |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 3        |      |  |
| <b>RESPIRATORY SYSTEM</b>                   |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |          |      |  |
| Larynx                                      | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | 49       |      |  |
| Lung  | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | 50       |      |  |
| Alveolar/Bronchiolar Adenoma                |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 1        |      |  |
| Alveolar/Bronchiolar Carcinoma              |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 4        |      |  |
| Hepatocellular Carcinoma, Metastatic, Liver |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 2        |      |  |

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

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

Experiment Number: 20515 - 04

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P17: NEOPLASMS BY INDIVIDUAL ANIMAL (SYSTEMIC LESIONS ABRIDGED)

Metal working fluids (CIMSTAR 3800)

CAS Number: CIMSTAR3800

Date Report Requested: 03/08/2013

Time Report Requested: 14:13:47

First Dose M/F: 05/05/08 / 05/05/08

Lab: BNW

| B6C3F1 MICE FEMALE           | DAY ON TEST |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | * TOTALS |  |
|------------------------------|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----------|--|
|                              | 0732        | 0733 | 0732 | 0733 | 0732 | 0733 | 0732 | 0733 | 0732 | 0733 | 0732 | 0733 | 0732 | 0733 | 0732 | 0733 | 0732 | 0733 | 0732 | 0733 | 0732 | 0733 | 0732 | 0733 |          |  |
| Control                      | ANIMAL ID   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |          |  |
|                              | 0012        | 0013 | 0012 | 0013 | 0012 | 0013 | 0012 | 0013 | 0012 | 0013 | 0012 | 0013 | 0012 | 0013 | 0012 | 0013 | 0012 | 0013 | 0012 | 0013 | 0012 | 0013 | 0012 | 0013 |          |  |
|                              | 0022        | 0023 | 0022 | 0023 | 0022 | 0023 | 0022 | 0023 | 0022 | 0023 | 0022 | 0023 | 0022 | 0023 | 0022 | 0023 | 0022 | 0023 | 0022 | 0023 | 0022 | 0023 | 0022 | 0023 |          |  |
|                              | 0032        | 0033 | 0032 | 0033 | 0032 | 0033 | 0032 | 0033 | 0032 | 0033 | 0032 | 0033 | 0032 | 0033 | 0032 | 0033 | 0032 | 0033 | 0032 | 0033 | 0032 | 0033 | 0032 | 0033 |          |  |
|                              | 0042        | 0043 | 0042 | 0043 | 0042 | 0043 | 0042 | 0043 | 0042 | 0043 | 0042 | 0043 | 0042 | 0043 | 0042 | 0043 | 0042 | 0043 | 0042 | 0043 | 0042 | 0043 | 0042 | 0043 |          |  |
| Nose                         | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | 50       |  |
| Trachea                      | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | 49       |  |
| <b>SPECIAL SENSES SYSTEM</b> |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |          |  |
| Eye                          | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | 50       |  |
| Harderian Gland Adenoma      | +           | +    | +    | +    | +    |      | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | 50<br>2  |  |
| <b>URINARY SYSTEM</b>        |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |          |  |
| Kidney                       | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | 50       |  |
| Urinary Bladder              | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | 50       |  |
| <b>SYSTEMIC LESIONS</b>      |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |          |  |
| Multiple Organ               | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | 50       |  |
| Histiocytic Sarcoma          |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 2        |  |
| Lymphoma Malignant           |             | X    |      |      |      |      | X    | X    |      |      | X    | X    |      | X    | X    |      | X    | X    |      | X    | X    |      | X    | 18   |          |  |

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

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



Experiment Number: 20515 - 04  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: MICE/B6C3F1

**P17: NEOPLASMS BY INDIVIDUAL ANIMAL (SYSTEMIC LESIONS ABRIDGED)**  
 Metal working fluids (CIMSTAR 3800)  
 CAS Number: CIMSTAR3800

Date Report Requested: 03/08/2013  
 Time Report Requested: 14:13:47  
 First Dose M/F: 05/05/08 / 05/05/08  
 Lab: BNW

| B6C3F1 MICE FEMALE | DAY ON TEST | ANIMAL ID |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | females<br>(cont...) |      |
|--------------------|-------------|-----------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----------------------|------|
|                    |             | 0508      | 0508 | 0508 | 0508 | 0508 | 0508 | 0508 | 0508 | 0508 | 0508 | 0508 | 0508 | 0508 | 0508 | 0508 | 0508 | 0508 | 0508 | 0508 | 0508 |                      | 0508 |
| 10 mg/m3           |             | 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    | 6    | 6    | 6    | 6    | 6    | 6    | 7    | 7    | 7    | 7    | 7    | 7    | 7    | 7    | 7    | 7                    |      |
|                    |             | 0         | 5    | 8    | 9    | 9    | 3    | 3    | 5    | 7    | 7    | 9    | 0    | 1    | 3    | 3    | 3    | 3    | 3    | 3    | 3    | 3                    |      |
|                    |             | 8         | 2    | 3    | 8    | 9    | 4    | 5    | 5    | 7    | 7    | 8    | 1    | 7    | 1    | 1    | 1    | 1    | 1    | 2    | 2    | 2                    |      |
|                    |             | 0         | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0                    |      |
|                    |             | 0         | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0                    |      |
|                    |             | 3         | 3    | 3    | 3    | 3    | 3    | 3    | 3    | 3    | 3    | 3    | 3    | 3    | 3    | 3    | 3    | 3    | 3    | 3    | 3    | 3                    |      |
|                    |             | 3         | 4    | 2    | 3    | 0    | 3    | 1    | 2    | 0    | 0    | 4    | 3    | 1    | 1    | 2    | 3    | 4    | 4    | 0    | 1    | 1                    |      |
|                    |             | 4         | 3    | 7    | 2    | 6    | 6    | 1    | 9    | 1    | 7    | 1    | 1    | 2    | 7    | 2    | 9    | 5    | 6    | 2    | 0    | 4                    |      |

**ALIMENTARY SYSTEM**

|                                     |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|-------------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Esophagus                           | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Gallbladder                         | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Large, Cecum              | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Large, Colon              | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Large, Rectum             | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Small, Duodenum           | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Small, Ileum<br>Carcinoma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Small, Jejunum            | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Liver                               | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Hepatocellular Adenoma              |   |   | X |   |   | X |   | X |   |   |   |   | X |   |   |   | X |   |   |   |   |   |
| Hepatocellular Adenoma, Multiple    |   |   |   | X |   |   |   |   |   |   |   |   |   |   |   |   |   | X |   |   |   |   |
| Hepatocellular Carcinoma            |   | X | X |   |   |   |   |   |   |   |   | X |   |   |   |   |   |   |   |   | X | X |
| Hepatocellular Carcinoma, Multiple  |   |   |   |   |   |   |   |   | X |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Mesentery<br>Hemangioma             |   |   | + | + | + | + | + | + | + |   |   |   |   |   |   |   | + | + |   |   |   | + |
| Pancreas                            | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| 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: 20515 - 04

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P17: NEOPLASMS BY INDIVIDUAL ANIMAL (SYSTEMIC LESIONS ABRIDGED)

Metal working fluids (CIMSTAR 3800)

CAS Number: CIMSTAR3800

Date Report Requested: 03/08/2013

Time Report Requested: 14:13:47

First Dose M/F: 05/05/08 / 05/05/08

Lab: BNW

| B6C3F1 MICE FEMALE | DAY ON TEST | ANIMAL ID |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | females<br>(cont...) |
|--------------------|-------------|-----------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----------------------|
|                    |             | 0         | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |                      |
| 10 mg/m3           | 5           | 5         | 5 | 5 | 5 | 6 | 6 | 6 | 6 | 6 | 6 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7                    |
|                    | 8           | 5         | 8 | 9 | 9 | 3 | 3 | 5 | 5 | 7 | 7 | 9 | 0 | 1 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3                    |
|                    | 2           | 3         | 8 | 9 | 4 | 5 | 5 | 7 | 7 | 8 | 1 | 7 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2                    |
|                    | 0           | 0         | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0                    |
|                    | 3           | 3         | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3                    |
|                    | 3           | 4         | 2 | 3 | 0 | 3 | 1 | 2 | 0 | 0 | 4 | 3 | 1 | 1 | 2 | 3 | 4 | 4 | 0 | 1 | 1 | 1                    |
|                    | 4           | 3         | 7 | 2 | 6 | 6 | 1 | 9 | 1 | 7 | 1 | 1 | 2 | 7 | 2 | 9 | 5 | 6 | 2 | 0 | 4 | 9                    |

|                      |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|----------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Stomach, Forestomach | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Stomach, Glandular   | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |

CARDIOVASCULAR SYSTEM

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

ENDOCRINE SYSTEM

|  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Adrenal Cortex<br>Subcapsular, Adenoma     | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Adrenal Medulla<br>Pheochromocytoma Benign | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | X |
| Islets, Pancreatic<br>Adenoma              | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Parathyroid Gland                          | M | M | M | + | + | + | + | + | + | M | M | + | M | + | + | + | M | M | + | + | + | M |
| Pituitary Gland<br>Pars Distalis, Adenoma  | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | X | X | + | + | + | + | + |
| Thyroid Gland                              | + | + | M | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |

GENERAL BODY SYSTEM

|                        |   |
|------------------------|---|
| Tissue NOS             | + |
| Mediastinum, Carcinoma | X |

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

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



Experiment Number: 20515 - 04

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P17: NEOPLASMS BY INDIVIDUAL ANIMAL (SYSTEMIC LESIONS ABRIDGED)

Metal working fluids (CIMSTAR 3800)

CAS Number: CIMSTAR3800

Date Report Requested: 03/08/2013

Time Report Requested: 14:13:47

First Dose M/F: 05/05/08 / 05/05/08

Lab: BNW

| B6C3F1 MICE FEMALE | 10 mg/m3 | DAY ON TEST |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | ANIMAL ID | females<br>(cont...) |   |
|--------------------|----------|-------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----------|----------------------|---|
|                    |          | 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 | 6 | 6 | 6 | 6 | 6 | 6 | 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         |                      |   |
|                    |          | 8           | 2 | 3 | 8 | 9 | 4 | 5 | 5 | 7 | 7 | 8 | 1 | 7 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2         |                      |   |
|                    |          | 0           | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0         |                      |   |
|                    |          | 3           | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3         |                      |   |
|                    |          | 3           | 4 | 2 | 3 | 0 | 3 | 1 | 2 | 0 | 0 | 4 | 3 | 1 | 1 | 2 | 3 | 4 | 4 | 0 | 1 | 1         |                      |   |
|                    |          | 4           | 3 | 7 | 2 | 6 | 6 | 1 | 9 | 1 | 7 | 1 | 1 | 2 | 7 | 2 | 9 | 5 | 6 | 2 | 0 | 4         |                      |   |

Mammary Gland

Skin

Subcutaneous Tissue, Fibrosarcoma

Subcutaneous Tissue, Schwannoma Malignant

MUSCULOSKELETAL SYSTEM

Bone

Skeletal Muscle

NERVOUS SYSTEM

Brain

Peripheral Nerve

Spinal Cord

RESPIRATORY SYSTEM

Larynx

Lung

Alveolar/Bronchiolar Adenoma

Alveolar/Bronchiolar Adenoma, Multiple

Alveolar/Bronchiolar Carcinoma

Hepatocellular Carcinoma, Metastatic, Liver

Nose

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

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

Experiment Number: 20515 - 04

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P17: NEOPLASMS BY INDIVIDUAL ANIMAL (SYSTEMIC LESIONS ABRIDGED)

Metal working fluids (CIMSTAR 3800)

CAS Number: CIMSTAR3800

Date Report Requested: 03/08/2013

Time Report Requested: 14:13:47

First Dose M/F: 05/05/08 / 05/05/08

Lab: BNW

| B6C3F1 MICE FEMALE<br>10 mg/m3                              | DAY ON TEST |      | ANIMAL ID |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | females<br>(cont...) |      |   |  |
|---|-------------|------|-----------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----------------------|------|---|--|
|   | 0508        | 0509 | 0510      | 0511 | 0512 | 0513 | 0514 | 0515 | 0516 | 0517 | 0518 | 0519 | 0520 | 0521 | 0522 | 0523 | 0524 | 0525 | 0526 | 0527 | 0528 | 0529 |                      | 0530 |   |  |
| Trachea   | +           | +    | +         | A    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +                    | +    |   |  |
| <b>SPECIAL SENSES SYSTEM</b>                                |             |      |           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                      |      |   |  |
| Eye   | +           | +    | +         | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +                    | +    | + |  |
| Harderian Gland<br>Adenoma<br>Carcinoma                     | +           | +    | +         | +    | +    | +    | +    | +    | +    | X    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | X    | +                    | +    | + |  |
| <b>URINARY SYSTEM</b>                                       |             |      |           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                      |      |   |  |
| Kidney  | +           | +    | +         | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +                    | +    | + |  |
| Urethra<br>Sarcoma  |             |      |           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | +    | X                    |      |   |  |
| Urinary Bladder   | +           | +    | +         | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +                    | +    | + |  |
| <b>SYSTEMIC LESIONS</b>                                     |             |      |           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                      |      |   |  |
| Multiple Organ<br>Histiocytic Sarcoma<br>Lymphoma Malignant | +           | +    | +         | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +                    | +    | + |  |
|   | X           |      |           |      |      |      |      |      |      | X    |      | X    |      | X    |      |      |      |      |      |      |      | X    | X                    |      |   |  |

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

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









Experiment Number: 20515 - 04

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P17: NEOPLASMS BY INDIVIDUAL ANIMAL (SYSTEMIC LESIONS ABRIDGED)

Metal working fluids (CIMSTAR 3800)

CAS Number: CIMSTAR3800

Date Report Requested: 03/08/2013

Time Report Requested: 14:13:47

First Dose M/F: 05/05/08 / 05/05/08

Lab: BNW

| B6C3F1 MICE FEMALE                          | DAY ON TEST |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | * TOTALS |      |
|---|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----------|------|
|   | 0732        | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 |          | 0732 |
| 10 mg/m3                                    | ANIMAL ID   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | * TOTALS |      |
|   | 0032        | 0032 | 0032 | 0032 | 0032 | 0032 | 0032 | 0032 | 0032 | 0032 | 0032 | 0032 | 0032 | 0032 | 0032 | 0032 | 0032 | 0032 | 0032 | 0032 |          | 0032 |
| Mammary Gland                               | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +        | 50   |
| Skin  | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +        | 50   |
| Subcutaneous Tissue, Fibrosarcoma           |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |          | 1    |
| Subcutaneous Tissue, Schwannoma Malignant   |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |          | 1    |
| <b>MUSCULOSKELETAL SYSTEM</b>               |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |          |      |
| Bone  | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +        | 50   |
| Skeletal Muscle                             |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |          | 3    |
| <b>NERVOUS SYSTEM</b>                       |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |          |      |
| Brain                                       | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +        | 50   |
| Peripheral Nerve                            |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |          | 3    |
| Spinal Cord                                 |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |          | 3    |
| <b>RESPIRATORY SYSTEM</b>                   |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |          |      |
| Larynx                                      | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +        | 49   |
| Lung  | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +        | 50   |
| Alveolar/Bronchiolar Adenoma                |             |      |      |      | X    |      |      |      |      | X    |      |      |      |      |      |      |      |      |      |      |          | 3    |
| Alveolar/Bronchiolar Adenoma, Multiple      |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | X    |      |          | 1    |
| Alveolar/Bronchiolar Carcinoma              |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |          | 1    |
| Hepatocellular Carcinoma, Metastatic, Liver |             | X    |      |      |      | X    |      |      |      |      |      |      |      |      |      |      |      | X    |      |      |          | 4    |
| Nose  | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +        | 49   |

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

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

Experiment Number: 20515 - 04

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P17: NEOPLASMS BY INDIVIDUAL ANIMAL (SYSTEMIC LESIONS ABRIDGED)

Metal working fluids (CIMSTAR 3800)

CAS Number: CIMSTAR3800

Date Report Requested: 03/08/2013

Time Report Requested: 14:13:47

First Dose M/F: 05/05/08 / 05/05/08

Lab: BNW

| B6C3F1 MICE FEMALE<br>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  | * TOTALS |
|--------------------------------|-------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|----------|
|                                | 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  |          |
|                                |             | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7  |          |
| Trachea                        |             | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 49 |          |
| <b>SPECIAL SENSES SYSTEM</b>   |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |    |          |
| Eye                            |             | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |          |
| Harderian Gland                |             | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |          |
| Adenoma                        |             | X |   |   |   |   |   |   |   |   |   |   |   |   |   |   | X |   | X |   | X |   |   | 6  |          |
| Carcinoma                      |             |   |   |   |   |   |   |   |   |   |   | X |   |   |   |   |   |   |   |   |   |   |   | 1  |          |
| <b>URINARY SYSTEM</b>          |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |    |          |
| Kidney                         |             | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |          |
| Urethra                        |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 1  |          |
| Sarcoma                        |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 1  |          |
| Urinary Bladder                |             | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |          |
| <b>SYSTEMIC LESIONS</b>        |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |    |          |
| Multiple Organ                 |             | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |          |
| Histiocytic Sarcoma            |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 1  |          |
| Lymphoma Malignant             |             | X | X | X |   |   | X | X |   |   |   |   | X | X | X | X |   | X |   | X | X | X |   | 18 |          |

\* .. 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

| B6C3F1 MICE FEMALE<br>30 mg/m3 | DAY ON TEST |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | ANIMAL ID | females<br>(cont...) |
|--------------------------------|-------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----------|----------------------|
|                                | 04          | 05 | 05 | 05 | 06 | 06 | 06 | 06 | 06 | 07 | 07 | 07 | 07 | 07 | 07 | 07 | 07 | 07 | 07 | 07 |           |                      |
|                                | 60          | 07 | 09 | 00 | 04 | 07 | 08 | 09 | 00 | 00 | 00 | 00 | 03 | 03 | 03 | 03 | 03 | 03 | 03 | 03 | 03        |                      |
|                                | 02          | 06 | 05 | 08 | 04 | 07 | 01 | 08 | 00 | 04 | 05 | 09 | 01 | 01 | 01 | 01 | 01 | 01 | 01 | 01 | 01        |                      |
|                                | 00          | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00        | 00                   |
|                                | 50          | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55        | 55                   |
|                                | 05          | 05 | 00 | 04 | 02 | 03 | 03 | 02 | 01 | 04 | 01 | 03 | 02 | 00 | 00 | 01 | 02 | 02 | 03 | 04 | 04        | 00                   |
|                                | 07          | 00 | 02 | 07 | 01 | 04 | 03 | 08 | 08 | 02 | 06 | 02 | 04 | 04 | 05 | 07 | 02 | 07 | 09 | 06 | 00        | 00                   |

**ALIMENTARY SYSTEM**

|                                    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|------------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Esophagus                          | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Gallbladder                        | + | + | + | + | + | + | + | + | M | + | + | + | M | + | + | + | + | M | + | M | + | + |
| Intestine Large, Cecum             | + | + | + | A | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Large, Colon             | + | + | + | A | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Large, Rectum            | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Small, Duodenum Adenoma  | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Small, Ileum             | + | + | + | A | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Small, Jejunum           | + | + | + | A | + | + | + | + | A | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Liver                              | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Hepatocellular Adenoma             |   |   |   |   |   |   |   |   |   |   |   |   | X | X |   |   |   | X |   |   |   |   |
| Hepatocellular Adenoma, Multiple   |   |   | X |   |   | X |   |   | X |   |   |   |   |   |   |   |   |   |   | X |   |   |
| Hepatocellular Carcinoma           |   |   |   |   |   | X |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Leiomyosarcoma, Metastatic, Uterus |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | X |
| Mesentery                          | + |   | + |   | + |   |   |   |   |   | + | + |   |   | + | + |   |   |   |   |   | + |
| Hemangiosarcoma                    |   |   | X |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Pancreas                           | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| 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

| B6C3F1 MICE FEMALE<br>30 mg/m3                                   | DAY ON TEST |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | females<br>(cont...) |   |
|--|-------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----------------------|---|
|  | 0           | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |                      | 0 |
|  | 4           | 5 | 5 | 5 | 6 | 6 | 6 | 6 | 6 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 |                      | 7 |
| ANIMAL ID  | 6           | 0 | 7 | 9 | 0 | 4 | 7 | 8 | 9 | 0 | 0 | 0 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3                    |   |
|  | 0           | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0                    |   |
|  | 5           | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5                    |   |
|  | 0           | 0 | 0 | 4 | 2 | 3 | 3 | 2 | 1 | 4 | 1 | 3 | 2 | 0 | 0 | 1 | 2 | 2 | 2 | 3 | 4                    |   |
|  | 7           | 0 | 2 | 7 | 1 | 4 | 3 | 8 | 8 | 2 | 6 | 2 | 4 | 4 | 5 | 7 | 2 | 7 | 9 | 6 | 0                    |   |
| Stomach, Forestomach   | +           | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | +                    |   |
| Stomach, Glandular   | +           | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | +                    |   |
| Tooth  |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | +                    |   |
| <b>CARDIOVASCULAR SYSTEM</b>                                     |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                      |   |
| Blood Vessel   | M           | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | +                    |   |
| Heart  | +           | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | +                    |   |
| <b>ENDOCRINE SYSTEM</b>  |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                      |   |
| Adrenal Cortex   | +           | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | +                    |   |
| Adenoma  |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                      |   |
| Hepatocellular Carcinoma, Metastatic, Liver Subcapsular, Adenoma |             |   |   |   |   |   |   | X |   |   |   |   |   |   |   |   |   |   |   |   |                      |   |
| Adrenal Medulla  | +           | + | + | + | + | + | + | M | + | + | + | + | + | + | + | + | + | + | + | + | +                    |   |
| Pheochromocytoma Benign  |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                      |   |
| Pheochromocytoma Malignant                                       |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                      |   |
| Islets, Pancreatic   | +           | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | +                    |   |
| Adenoma  |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                      |   |
| Parathyroid Gland  | +           | + | + | M | M | M | + | M | + | M | M | + | + | M | M | M | + | M | M | M | +                    |   |
| Pituitary Gland  | +           | + | + | + | + | M | + | + | + | + | + | + | + | + | + | + | + | + | + | + | +                    |   |
| Pars Distalis, Adenoma   |             |   |   |   |   |   |   |   | X |   |   |   |   |   |   |   |   |   |   |   |                      |   |
| Pars Intermedia, Adenoma   |             |   |   |   |   |   |   |   |   |   |   |   |   |   | X |   |   |   |   | X |                      |   |

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

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

Experiment Number: 20515 - 04  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: MICE/B6C3F1

**P17: NEOPLASMS BY INDIVIDUAL ANIMAL (SYSTEMIC LESIONS ABRIDGED)**  
 Metal working fluids (CIMSTAR 3800)  
 CAS Number: CIMSTAR3800

Date Report Requested: 03/08/2013  
 Time Report Requested: 14:13:47  
 First Dose M/F: 05/05/08 / 05/05/08  
 Lab: BNW

| B6C3F1 MICE FEMALE | 30 mg/m3 | DAY ON TEST      |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  | ANIMAL ID | females<br>(cont...) |                       |                            |                            |                            |                            |                            |                            |                            |                            |                            |                            |                            |                            |                            |                            |                            |                            |                            |                            |                            |                            |  |
|--------------------|----------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|-----------|----------------------|-----------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|--|
|                    |          | 0<br>4<br>6<br>0 | 0<br>5<br>0<br>2 | 0<br>5<br>7<br>6 | 0<br>5<br>9<br>5 | 0<br>6<br>0<br>8 | 0<br>6<br>4<br>7 | 0<br>6<br>7<br>1 | 0<br>6<br>8<br>8 | 0<br>6<br>9<br>0 | 0<br>7<br>0<br>4 | 0<br>7<br>0<br>5 | 0<br>7<br>0<br>9 | 0<br>7<br>0<br>1 | 0<br>7<br>3<br>1 | 0<br>7<br>3<br>1 | 0<br>7<br>3<br>1 | 0<br>7<br>3<br>1 | 0<br>7<br>3<br>1 | 0<br>7<br>3<br>1 | 0<br>7<br>3<br>2 |           |                      | 0<br>7<br>3<br>2      | 0<br>7<br>3<br>2           |                            |                            |                            |                            |                            |                            |                            |                            |                            |                            |                            |                            |                            |                            |                            |                            |                            |                            |                            |  |
|                    |          | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0         | 0                    | 0<br>0<br>5<br>0<br>7 | 0<br>0<br>5<br>5<br>0<br>7 | 0<br>0<br>5<br>5<br>4<br>1 | 0<br>0<br>5<br>5<br>3<br>4 | 0<br>0<br>5<br>5<br>3<br>3 | 0<br>0<br>5<br>5<br>2<br>8 | 0<br>0<br>5<br>5<br>1<br>8 | 0<br>0<br>5<br>5<br>4<br>2 | 0<br>0<br>5<br>5<br>3<br>6 | 0<br>0<br>5<br>5<br>2<br>4 | 0<br>0<br>5<br>5<br>0<br>4 | 0<br>0<br>5<br>5<br>0<br>5 | 0<br>0<br>5<br>5<br>1<br>7 | 0<br>0<br>5<br>5<br>2<br>2 | 0<br>0<br>5<br>5<br>2<br>9 | 0<br>0<br>5<br>5<br>3<br>6 | 0<br>0<br>5<br>5<br>4<br>0 | 0<br>0<br>5<br>5<br>0<br>9 | 0<br>0<br>5<br>5<br>0<br>1 | 0<br>0<br>5<br>5<br>0<br>6 | 0<br>0<br>5<br>5<br>1<br>0 |  |

Thyroid Gland

+ +

**GENERAL BODY SYSTEM**

NONE

**GENITAL SYSTEM**

Clitoral Gland

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

Ovary

+ M M +

Cystadenocarcinoma

X

Leiomyosarcoma, Metastatic, Uterus

X

Uterus

+ +

Carcinoma

Leiomyosarcoma

Polyp Stromal

X

X

**HEMATOPOIETIC SYSTEM**

Bone Marrow

+ +

Lymph Node

+ +

Lymph Node, Bronchial

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

Lymph Node, Mandibular

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

Lymph Node, Mediastinal

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

Lymph Node, Mesenteric

M +

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

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

Experiment Number: 20515 - 04

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P17: NEOPLASMS BY INDIVIDUAL ANIMAL (SYSTEMIC LESIONS ABRIDGED)

Metal working fluids (CIMSTAR 3800)

CAS Number: CIMSTAR3800

Date Report Requested: 03/08/2013

Time Report Requested: 14:13:47

First Dose M/F: 05/05/08 / 05/05/08

Lab: BNW

| B6C3F1 MICE FEMALE | DAY ON TEST | ANIMAL ID |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | females<br>(cont...) |      |      |
|--------------------|-------------|-----------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----------------------|------|------|
|                    |             | 0460      | 0452 | 0456 | 0459 | 0460 | 0466 | 0466 | 0466 | 0466 | 0467 | 0467 | 0467 | 0467 | 0467 | 0467 | 0467 | 0467 | 0467 | 0467 | 0467 |                      | 0467 | 0467 |
| 30 mg/m3           |             | 0         | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0                    | 0    |      |

|                          |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Spleen                   | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Thymus<br>Thymoma Benign | M | + | + | + | M | + | + | + | + | + | M | + | M | + | + | + | + | + | + | + | + | + | + |

INTEGUMENTARY SYSTEM

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mammary Gland<br>Carcinoma                | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Skin<br>Subcutaneous Tissue, Fibrosarcoma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Subcutaneous Tissue, Schwannoma Malignant |   | X |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |

MUSCULOSKELETAL SYSTEM

|                 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|-----------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bone            | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Skeletal Muscle |   |   |   |   | + |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |

NERVOUS SYSTEM

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

RESPIRATORY SYSTEM

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Larynx | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| 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: 20515 - 04  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: MICE/B6C3F1

P17: NEOPLASMS BY INDIVIDUAL ANIMAL (SYSTEMIC LESIONS ABRIDGED)

Metal working fluids (CIMSTAR 3800)

CAS Number: CIMSTAR3800

Date Report Requested: 03/08/2013

Time Report Requested: 14:13:47

First Dose M/F: 05/05/08 / 05/05/08

Lab: BNW

| B6C3F1 MICE FEMALE<br>30 mg/m3 | DAY ON TEST | 0<br>4 | 0<br>5 | 0<br>5 | 0<br>5 | 0<br>6 | 0<br>6 | 0<br>6 | 0<br>6 | 0<br>6 | 0<br>7 | 0<br>7 | 0<br>7 | 0<br>7 | 0<br>7 | 0<br>7 | 0<br>7 | 0<br>7 | 0<br>7 | 0<br>7 | 0<br>7 | 0<br>7 | 0<br>7 | ANIMAL ID | females<br>(cont...) |
|--------------------------------|-------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-----------|----------------------|
|                                |             | 6      | 0      | 7      | 9      | 0      | 4      | 7      | 8      | 9      | 0      | 0      | 0      | 3      | 3      | 3      | 3      | 3      | 3      | 3      | 3      | 3      | 3      |           |                      |
|                                |             | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0<br>0    | 0<br>0               |
|                                |             | 5      | 5      | 5      | 5      | 5      | 5      | 5      | 5      | 5      | 5      | 5      | 5      | 5      | 5      | 5      | 5      | 5      | 5      | 5      | 5      | 5      | 5      | 5<br>0    | 5<br>0               |
|                                |             | 7      | 0      | 2      | 7      | 1      | 4      | 3      | 8      | 8      | 2      | 6      | 2      | 4      | 4      | 5      | 7      | 2      | 7      | 9      | 6      | 0      | 0      | 7<br>0    | 0<br>0               |

Alveolar/Bronchiolar Adenoma

X

Alveolar/Bronchiolar Carcinoma

X

Carcinoma, Metastatic, Mammary Gland

X

Hepatocellular Carcinoma, Metastatic, Liver

X

Schwannoma Malignant, Metastatic, Skin

Nose

+ +

Carcinoma, Metastatic, Harderian Gland

X

Trachea

+ +

SPECIAL SENSES SYSTEM

Eye

+ +

Carcinoma, Metastatic, Harderian Gland

X

Harderian Gland

+ +

Adenoma

X

Carcinoma

X

URINARY SYSTEM

Kidney

+ +

Ureter

+

Urinary Bladder

+ +

SYSTEMIC LESIONS

Multiple Organ

+ +

Histiocytic Sarcoma

X

Lymphoma Malignant

X X X X X X X X X X X

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

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

Experiment Number: 20515 - 04  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: MICE/B6C3F1

**P17: NEOPLASMS BY INDIVIDUAL ANIMAL (SYSTEMIC LESIONS ABRIDGED)**  
 Metal working fluids (CIMSTAR 3800)  
 CAS Number: CIMSTAR3800

Date Report Requested: 03/08/2013  
 Time Report Requested: 14:13:47  
 First Dose M/F: 05/05/08 / 05/05/08  
 Lab: BNW

| B6C3F1 MICE 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 |
|--------------------|-------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----------------|---|
|                    |             | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7               | 7 |
| 30 mg/m3           |             | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3               | 3 |
|                    | ANIMAL ID   | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3               | 3 |
|                    |             | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0               | 0 |
|                    |             | 0 | 0 | 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 |
|                    |             | 1 | 1 | 1 | 1 | 2 | 3 | 3 | 3 | 4 | 4 | 0 | 0 | 0 | 1 | 1 | 2 | 2 | 2 | 3 | 3 | 4               | 4 |
|                    |             | 2 | 4 | 5 | 9 | 5 | 0 | 1 | 9 | 3 | 4 | 3 | 8 | 9 | 1 | 3 | 0 | 3 | 6 | 5 | 7 | 8               | 1 |
|                    |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | <b>* TOTALS</b> |   |

**ALIMENTARY SYSTEM**

|                                    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |    |
|------------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|
| Esophagus                          | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Gallbladder                        | + | + | + | + | + | + | M | + | + | M | + | + | + | + | + | + | + | + | M | + | M | + | 41 |
| Intestine Large, Cecum             | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 49 |
| Intestine Large, Colon             | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 49 |
| Intestine Large, Rectum            | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Intestine Small, Duodenum          | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Adenoma                            |   |   |   |   |   |   |   | X |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 1  |
| Intestine Small, Ileum             | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 49 |
| Intestine Small, Jejunum           | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 48 |
| Liver                              | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Hepatocellular Adenoma             |   |   |   | X |   | X |   |   |   |   |   |   |   |   |   | X |   |   | X | X | X |   | 9  |
| Hepatocellular Adenoma, Multiple   |   |   |   |   |   |   |   |   |   |   | X |   |   |   |   |   |   |   |   |   |   |   | 5  |
| Hepatocellular Carcinoma           |   |   |   |   |   |   |   |   |   |   |   |   | X |   |   |   |   |   |   |   |   |   | 2  |
| Leiomyosarcoma, Metastatic, Uterus |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 1  |
| Mesentery                          |   |   |   |   | + | + | + |   |   |   |   | + | + | + |   | + |   |   |   | + | + | + | 21 |
| Hemangiosarcoma                    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 1  |
| Pancreas                           | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| 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: 20515 - 04

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

**P17: NEOPLASMS BY INDIVIDUAL ANIMAL (SYSTEMIC LESIONS ABRIDGED)**

Metal working fluids (CIMSTAR 3800)

CAS Number: CIMSTAR3800

Date Report Requested: 03/08/2013

Time Report Requested: 14:13:47

First Dose M/F: 05/05/08 / 05/05/08

Lab: BNW

| B6C3F1 MICE FEMALE<br>30 mg/m3              | DAY ON TEST           |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       | * TOTALS              |                       |                       |                       |                       |    |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|----|
|   | 0<br>7<br>3<br>2      | 0<br>7<br>3<br>2      | 0<br>7<br>3<br>2      | 0<br>7<br>3<br>2      | 0<br>7<br>3<br>2      | 0<br>7<br>3<br>2      | 0<br>7<br>3<br>2      | 0<br>7<br>3<br>2      | 0<br>7<br>3<br>2      | 0<br>7<br>3<br>2      | 0<br>7<br>3<br>2      | 0<br>7<br>3<br>2      | 0<br>7<br>3<br>2      | 0<br>7<br>3<br>2      | 0<br>7<br>3<br>2      | 0<br>7<br>3<br>2      | 0<br>7<br>3<br>2      | 0<br>7<br>3<br>2      | 0<br>7<br>3<br>2      | 0<br>7<br>3<br>2      |                       |                       |                       |                       |                       |    |
| ANIMAL ID                                   | 0<br>0<br>5<br>1<br>2 | 0<br>0<br>5<br>1<br>4 | 0<br>0<br>5<br>1<br>5 | 0<br>0<br>5<br>1<br>9 | 0<br>0<br>5<br>2<br>5 | 0<br>0<br>5<br>3<br>0 | 0<br>0<br>5<br>3<br>1 | 0<br>0<br>5<br>3<br>9 | 0<br>0<br>5<br>4<br>3 | 0<br>0<br>5<br>4<br>4 | 0<br>0<br>5<br>0<br>0 | 0<br>0<br>5<br>0<br>8 | 0<br>0<br>5<br>0<br>9 | 0<br>0<br>5<br>1<br>1 | 0<br>0<br>5<br>1<br>3 | 0<br>0<br>5<br>2<br>0 | 0<br>0<br>5<br>2<br>3 | 0<br>0<br>5<br>2<br>6 | 0<br>0<br>5<br>3<br>5 | 0<br>0<br>5<br>3<br>7 | 0<br>0<br>5<br>4<br>8 | 0<br>0<br>5<br>4<br>1 | 0<br>0<br>5<br>4<br>5 | 0<br>0<br>5<br>4<br>6 | 0<br>0<br>5<br>4<br>8 |    |
| Stomach, Forestomach                        | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | 50 |
| Stomach, Glandular                          | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | 50 |
| Tooth                                       |                       |                       |                       |                       | +                     |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       | 2                     |    |
| <b>CARDIOVASCULAR SYSTEM</b>                |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |    |
| Blood Vessel                                | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | 49 |
| Heart                                       | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | 50 |
| <b>ENDOCRINE SYSTEM</b>                     |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |    |
| Adrenal Cortex                              | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | 50 |
| Adenoma                                     |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       | X                     |                       |                       | 1  |
| Hepatocellular Carcinoma, Metastatic, Liver |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       | 1  |
| Subcapsular, Adenoma                        |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       | X                     |                       | 1  |
| Adrenal Medulla                             | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | 49 |
| Pheochromocytoma Benign                     |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       | X                     |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       | 1  |
| Pheochromocytoma Malignant                  |                       |                       |                       |                       |                       |                       |                       | X                     |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       | 1  |
| Islets, Pancreatic                          | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | 50 |
| Adenoma                                     |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       | X                     |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       | 1  |
| Parathyroid Gland                           | M                     | +                     | M                     | M                     | M                     | +                     | M                     | M                     | +                     | +                     | M                     | M                     | +                     | +                     | +                     | M                     | +                     | +                     | M                     | M                     | M                     | +                     | +                     | M                     | +                     | 22 |
| Pituitary Gland                             | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | 49 |
| Pars Distalis, Adenoma                      |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       | X                     | X                     |                       |                       |                       |                       |                       |                       |                       |                       | X                     |                       |                       | 6  |
| Pars Intermedia, Adenoma                    |                       |                       |                       |                       |                       |                       |                       | 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: 20515 - 04  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: MICE/B6C3F1

**P17: NEOPLASMS BY INDIVIDUAL ANIMAL (SYSTEMIC LESIONS ABRIDGED)**

Metal working fluids (CIMSTAR 3800)

CAS Number: CIMSTAR3800

Date Report Requested: 03/08/2013

Time Report Requested: 14:13:47

First Dose M/F: 05/05/08 / 05/05/08

Lab: BNW

|                    |             | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | * TOTALS |
|--------------------|-------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----------|
| B6C3F1 MICE FEMALE | DAY ON TEST | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 |   |          |
|                    | ANIMAL ID   | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |   |          |
| 30 mg/m3           |             | 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 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |   |          |
|                    |             | 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 |   |          |
|                    |             | 1 | 1 | 1 | 1 | 2 | 3 | 3 | 3 | 4 | 4 | 0 | 0 | 0 | 1 | 1 | 2 | 2 | 2 | 3 | 3 | 4 | 4 | 4 | 4 |   |          |
|                    |             | 2 | 4 | 5 | 9 | 5 | 0 | 1 | 9 | 3 | 4 | 3 | 8 | 9 | 1 | 3 | 0 | 3 | 6 | 5 | 7 | 8 | 1 | 5 | 6 | 8 |          |

Thyroid Gland + 50

**GENERAL BODY SYSTEM**

NONE

**GENITAL SYSTEM**

Clitoral Gland + + + + + + M + 43

Ovary + 48

Cystadenocarcinoma 1

Leiomyosarcoma, Metastatic, Uterus 1

Uterus + 50

Carcinoma X 1

Leiomyosarcoma 1

Polyp Stromal X 2

**HEMATOPOIETIC SYSTEM**

Bone Marrow + 50

Lymph Node + + + + 16

Lymph Node, Bronchial M M + + + + M + M + + + M + M + + M M + + + + M 28

Lymph Node, Mandibular + + + + + + M + + + + + + + + + + M + + + + M 43

Lymph Node, Mediastinal + + M + + + + + M M + + + M + + + + M + + + + 40

Lymph Node, Mesenteric + 49

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

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



Experiment Number: 20515 - 04

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

**P17: NEOPLASMS BY INDIVIDUAL ANIMAL (SYSTEMIC LESIONS ABRIDGED)**

Metal working fluids (CIMSTAR 3800)

CAS Number: CIMSTAR3800

Date Report Requested: 03/08/2013

Time Report Requested: 14:13:47

First Dose M/F: 05/05/08 / 05/05/08

Lab: BNW

| B6C3F1 MICE FEMALE<br>30 mg/m3              | DAY ON TEST                  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | * TOTALS |
|---|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----------|
|   | 0732                         | 0733 | 0732 | 0733 | 0733 | 0733 | 0733 | 0733 | 0733 | 0733 | 0733 | 0733 | 0733 | 0733 | 0733 | 0733 | 0733 | 0733 | 0733 | 0733 |          |
| ANIMAL ID                                   | 0001                         | 0005 | 0001 | 0005 | 0002 | 0003 | 0003 | 0004 | 0004 | 0000 | 0000 | 0000 | 0001 | 0001 | 0002 | 0002 | 0003 | 0003 | 0004 | 0005 | 0006     |
|   | Alveolar/Bronchiolar Adenoma |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | X        |
| Alveolar/Bronchiolar Carcinoma              |                              | X    |      |      |      |      |      |      |      |      | X    |      |      |      |      |      |      |      | X    |      | 4        |
| Carcinoma, Metastatic, Mammary Gland        |                              |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 1        |
| Hepatocellular Carcinoma, Metastatic, Liver |                              |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 1        |
| Schwannoma Malignant, Metastatic, Skin      |                              |      |      | X    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 1        |
| Nose  | +                            | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | 50       |
| Carcinoma, Metastatic, Harderian Gland      |                              |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 1        |
| Trachea                                     | +                            | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | 50       |
| <b>SPECIAL SENSES SYSTEM</b>                |                              |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |          |
| Eye   | +                            | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | 50       |
| Carcinoma, Metastatic, Harderian Gland      |                              |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 1        |
| Harderian Gland                             | +                            | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | 50       |
| Adenoma                                     |                              |      | X    |      |      |      | X    |      |      |      |      |      |      |      |      |      |      |      |      |      | 3        |
| Carcinoma                                   |                              |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 1        |
| <b>URINARY SYSTEM</b>                       |                              |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |          |
| Kidney                                      | +                            | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | 50       |
| Ureter                                      |                              |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 1        |
| Urinary Bladder                             | +                            | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | 50       |
| <b>SYSTEMIC LESIONS</b>                     |                              |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |          |
| Multiple Organ                              | +                            | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | 50       |
| Histiocytic Sarcoma                         |                              |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 1        |
| Lymphoma Malignant                          |                              |      | X    |      | X    | X    |      |      |      | X    | X    |      | X    | X    |      |      |      |      | X    | X    | 17       |

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

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

Experiment Number: 20515 - 04

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P17: NEOPLASMS BY INDIVIDUAL ANIMAL (SYSTEMIC LESIONS ABRIDGED)

Metal working fluids (CIMSTAR 3800)

CAS Number: CIMSTAR3800

Date Report Requested: 03/08/2013

Time Report Requested: 14:13:47

First Dose M/F: 05/05/08 / 05/05/08

Lab: BNW

|                           |                  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                              |
|---------------------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|------------------------------|
| <b>B6C3F1 MICE FEMALE</b> | DAY ON TEST      | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | <b>females<br/>(cont...)</b> |
|                           |                  | 2 | 4 | 5 | 5 | 5 | 5 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 |                              |
|                           |                  | 5 | 3 | 3 | 3 | 6 | 7 | 9 | 3 | 4 | 6 | 6 | 8 | 8 | 9 | 9 | 1 | 1 | 3 | 3 | 3 | 3 | 3 | 3 |                              |
|                           | <b>100 mg/m3</b> | 0 | 3 | 6 | 6 | 3 | 4 | 6 | 4 | 4 | 3 | 9 | 8 | 8 | 1 | 9 | 2 | 3 | 1 | 1 | 1 | 1 | 1 | 2 |                              |
|                           | ANIMAL ID        | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |                              |
|                           |                  | 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 | 1 | 2 | 2 | 0 | 4 | 1 | 3 | 3 | 3 | 4 | 1 | 4 | 1 | 2 | 0 | 1 | 2 | 2 | 3 | 4 |                              |
|                           |                  | 8 | 7 | 9 | 1 | 2 | 5 | 4 | 2 | 0 | 0 | 2 | 1 | 9 | 8 | 5 | 9 | 0 | 2 | 5 | 4 | 9 | 6 | 3 |                              |

**ALIMENTARY SYSTEM**

|  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Esophagus  | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Gallbladder  | + | A | + | + | + | M | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Leiomyosarcoma, Metastatic, Intestine Small, Duodenum      |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Intestine Large, Cecum                                     | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Leiomyoma  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | X |   |
| Intestine Large, Colon                                     | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Large, Rectum                                    | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Small, Duodenum                                  | + | A | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Leiomyosarcoma   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Intestine Small, Ileum                                     | + | A | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Small, Jejunum                                   | + | A | + | + | + | + | + | A | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Liver  | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Hemangiosarcoma  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | X |   |
| Hepatocellular Adenoma                                     |   |   |   |   |   |   |   |   | X |   |   |   |   | X |   | X |   |   |   |   |   |   |   |
| Hepatocellular Adenoma, Multiple                           |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Hepatocellular Carcinoma                                   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Hepatocholangiocarcinoma                                   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Mesentery  | M | + |   | + |   |   | + |   |   |   |   |   |   | + |   | + |   | + |   |   |   | + | + |
| Fat, Leiomyosarcoma, Metastatic, Intestine Small, Duodenum |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |

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

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

Experiment Number: 20515 - 04

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P17: NEOPLASMS BY INDIVIDUAL ANIMAL (SYSTEMIC LESIONS ABRIDGED)

Metal working fluids (CIMSTAR 3800)

CAS Number: CIMSTAR3800

Date Report Requested: 03/08/2013

Time Report Requested: 14:13:47

First Dose M/F: 05/05/08 / 05/05/08

Lab: BNW

| B6C3F1 MICE FEMALE<br>100 mg/m3 |  | DAY ON TEST |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | females<br>(cont...) |
|---------------------------------|--|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----------------------|
|                                 |  | 0250        | 0433 | 0556 | 0556 | 0556 | 0556 | 0666 | 0666 | 0666 | 0666 | 0666 | 0666 | 0666 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 |      |                      |
| ANIMAL ID                       |  | 0070        | 0077 | 0079 | 0071 | 0072 | 0075 | 0074 | 0072 | 0070 | 0070 | 0077 | 0077 | 0077 | 0077 | 0077 | 0077 | 0077 | 0077 | 0077 | 0077 | 0077 | 0077 | 0077 | 0077 |                      |

|  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Pancreas<br>Leiomyosarcoma, Metastatic, Intestine Small,<br>Duodenum | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Salivary Glands  | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Stomach, Forestomach<br>Squamous Cell Papilloma                      | + | + | + | + | + | + | + | + | + | + | + | X | + | + | + | + | + | + | + | + | + | + | + | + |
| Stomach, Glandular   | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Tooth  |   |   |   |   |   |   |   |   |   |   |   |   |   |   | + |   |   |   |   |   | + |   | + |   |

CARDIOVASCULAR SYSTEM

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

ENDOCRINE SYSTEM

|  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Adrenal Cortex   | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |   |
| Adrenal Medulla  | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |   |
| Islets, Pancreatic<br>Adenoma  | + | + | + | + | + | M | + | + | + | + | + | X | + | + | + | + | + | + | + | + | + | + | + | + |   |
| Parathyroid Gland  | + | M | + | + | + | + | M | M | + | + | + | + | M | M | M | M | M | M | + | M | M | M | + | M | M |
| Pituitary Gland<br>Meningioma Malignant, Metastatic, Brain<br>Pars Distalis, 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

Experiment Number: 20515 - 04

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P17: NEOPLASMS BY INDIVIDUAL ANIMAL (SYSTEMIC LESIONS ABRIDGED)

Metal working fluids (CIMSTAR 3800)

CAS Number: CIMSTAR3800

Date Report Requested: 03/08/2013

Time Report Requested: 14:13:47

First Dose M/F: 05/05/08 / 05/05/08

Lab: BNW

|                           |             |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                              |
|---------------------------|-------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|------------------------------|
| <b>B6C3F1 MICE FEMALE</b> | DAY ON TEST | 0<br>2<br>5<br>0      | 0<br>4<br>3<br>3      | 0<br>5<br>3<br>6      | 0<br>5<br>3<br>6      | 0<br>5<br>7<br>4      | 0<br>5<br>9<br>6      | 0<br>6<br>3<br>4      | 0<br>6<br>4<br>4      | 0<br>6<br>6<br>3      | 0<br>6<br>6<br>9      | 0<br>6<br>8<br>8      | 0<br>6<br>8<br>8      | 0<br>6<br>9<br>1      | 0<br>6<br>9<br>9      | 0<br>7<br>1<br>1      | 0<br>7<br>3<br>3      | 0<br>7<br>3<br>3      | 0<br>7<br>3<br>3      | 0<br>7<br>3<br>3      | 0<br>7<br>3<br>3      | 0<br>7<br>3<br>3      | 0<br>7<br>3<br>3      | 0<br>7<br>3<br>3      | <b>females<br/>(cont...)</b> |
|                           | ANIMAL ID   | 0<br>0<br>7<br>0<br>8 | 0<br>0<br>7<br>0<br>7 | 0<br>0<br>7<br>0<br>9 | 0<br>0<br>7<br>1<br>2 | 0<br>0<br>7<br>2<br>5 | 0<br>0<br>7<br>0<br>4 | 0<br>0<br>7<br>0<br>2 | 0<br>0<br>7<br>1<br>0 | 0<br>0<br>7<br>3<br>0 | 0<br>0<br>7<br>3<br>0 | 0<br>0<br>7<br>3<br>2 | 0<br>0<br>7<br>3<br>1 | 0<br>0<br>7<br>4<br>9 | 0<br>0<br>7<br>4<br>8 | 0<br>0<br>7<br>5<br>9 | 0<br>0<br>7<br>7<br>0 | 0<br>0<br>7<br>7<br>2 | 0<br>0<br>7<br>7<br>5 | 0<br>0<br>7<br>7<br>4 | 0<br>0<br>7<br>7<br>9 | 0<br>0<br>7<br>7<br>6 | 0<br>0<br>7<br>7<br>3 | 0<br>0<br>7<br>7<br>0 |                              |

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

GENERAL BODY SYSTEM

NONE

GENITAL SYSTEM

Clitoral Gland M + + + + + + M + M + + + + + + + M + + + + M +  
 Ovary +  
 Uterus +

HEMATOPOIETIC SYSTEM

Bone Marrow +  
 Lymph Node Renal, Hemangiosarcoma M + + + + + + + + + + + + + + + + X + +  
 Lymph Node, Bronchial Carcinoma, Metastatic, Uncertain Primary Site + + + + + + + + M + M + M + + + + M + + + M M M M +  
 Lymph Node, Mandibular Hemangiosarcoma + M M + + + + + + + + + + + + X + + + + M M + M M +  
 Lymph Node, Mediastinal + + + + + + + + + + + + + + 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: 20515 - 04

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P17: NEOPLASMS BY INDIVIDUAL ANIMAL (SYSTEMIC LESIONS ABRIDGED)

Metal working fluids (CIMSTAR 3800)

CAS Number: CIMSTAR3800

Date Report Requested: 03/08/2013

Time Report Requested: 14:13:47

First Dose M/F: 05/05/08 / 05/05/08

Lab: BNW

|                           |             |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |                              |
|---------------------------|-------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------------------------------|
| <b>B6C3F1 MICE FEMALE</b> | DAY ON TEST | 0<br>2 | 0<br>4 | 0<br>5 | 0<br>5 | 0<br>5 | 0<br>5 | 0<br>5 | 0<br>6 | 0<br>6 | 0<br>6 | 0<br>6 | 0<br>6 | 0<br>6 | 0<br>6 | 0<br>6 | 0<br>7 | 0<br>7 | 0<br>7 | 0<br>7 | 0<br>7 | 0<br>7 | 0<br>7 | 0<br>7 | 0<br>7 | 0<br>7 | 0<br>7 | 0<br>7 | 0<br>7 | <b>females<br/>(cont...)</b> |
|                           | ANIMAL ID   | 0<br>7 | 0<br>7 | 0<br>7 | 0<br>7 | 0<br>7 | 0<br>7 | 0<br>7 | 0<br>7 | 0<br>7 | 0<br>7 | 0<br>7 | 0<br>7 | 0<br>7 | 0<br>7 | 0<br>7 | 0<br>7 | 0<br>7 | 0<br>7 | 0<br>7 | 0<br>7 | 0<br>7 | 0<br>7 | 0<br>7 | 0<br>7 | 0<br>7 | 0<br>7 | 0<br>7 | 0<br>7 |                              |

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

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

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



Experiment Number: 20515 - 04  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: MICE/B6C3F1

**P17: NEOPLASMS BY INDIVIDUAL ANIMAL (SYSTEMIC LESIONS ABRIDGED)**  
 Metal working fluids (CIMSTAR 3800)  
 CAS Number: CIMSTAR3800

Date Report Requested: 03/08/2013  
 Time Report Requested: 14:13:47  
 First Dose M/F: 05/05/08 / 05/05/08  
 Lab: BNW

| B6C3F1 MICE FEMALE<br>100 mg/m3                       | DAY ON TEST |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | * TOTALS |
|---|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----------|
|   | 0732        | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 |          |
| ANIMAL ID   | 0070        | 0070 | 0070 | 0070 | 0070 | 0070 | 0070 | 0070 | 0070 | 0070 | 0070 | 0070 | 0070 | 0070 | 0070 | 0070 | 0070 | 0070 | 0070 | 0070 | 0070 | 0070 | 0070 | 0070 |          |
| Pancreas  | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | 50   |          |
| Leiomyosarcoma, Metastatic, Intestine Small, Duodenum |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 1    |          |
| Salivary Glands                                       | +           | +    | +    | +    | M    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | 49   |          |
| Stomach, Forestomach                                  | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | 50   |          |
| Squamous Cell Papilloma                               |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 1    |          |
| Stomach, Glandular                                    | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | 50   |          |
| Tooth   |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 4    |          |
| <b>CARDIOVASCULAR SYSTEM</b>                          |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |          |
| Blood Vessel  | +           | +    | I    | +    | +    | M    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | M    | +    | +    | I    | +    | +    | +    | 44   |          |
| Heart   | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | 50   |          |
| <b>ENDOCRINE SYSTEM</b>                               |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |          |
| Adrenal Cortex  | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | 50   |          |
| Adrenal Medulla                                       | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | 50   |          |
| Islets, Pancreatic                                    | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | 49   |          |
| Adenoma   |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 1    |          |
| Parathyroid Gland                                     | +           | M    | +    | +    | M    | +    | M    | M    | M    | M    | +    | +    | +    | +    | M    | +    | M    | +    | +    | +    | M    | +    | +    | 25   |          |
| Pituitary Gland                                       | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | 50   |          |
| Meningioma Malignant, Metastatic, Brain               |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 1    |          |
| Pars Distalis, Adenoma                                |             |      |      |      | X    |      |      | X    |      | X    |      |      |      |      |      |      |      |      |      |      |      |      | X    | 9    |          |

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

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

Experiment Number: 20515 - 04

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P17: NEOPLASMS BY INDIVIDUAL ANIMAL (SYSTEMIC LESIONS ABRIDGED)

Metal working fluids (CIMSTAR 3800)

CAS Number: CIMSTAR3800

Date Report Requested: 03/08/2013

Time Report Requested: 14:13:47

First Dose M/F: 05/05/08 / 05/05/08

Lab: BNW

| B6C3F1 MICE FEMALE | DAY ON TEST | ANIMAL ID |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | * TOTALS |      |
|--------------------|-------------|-----------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----------|------|
|                    |             | 0732      | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 | 0732 |          | 0732 |
| 100 mg/m3          |             | 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        |      |
|                    |             | 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    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 3    | 3    | 3    | 3    | 3    | 3    | 3    | 3        |      |
|                    |             | 0         | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0        |      |
|                    |             | 0         | 0    | 0    | 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        |      |
|                    |             | 0         | 1    | 1    | 2    | 2    | 2    | 3    | 3    | 3    | 3    | 4    | 4    | 4    | 0    | 0    | 1    | 1    | 1    | 2    | 2    | 3        |      |
|                    |             | 6         | 4    | 7    | 1    | 6    | 8    | 4    | 5    | 7    | 8    | 4    | 7    | 8    | 1    | 5    | 2    | 3    | 6    | 3    | 7    | 3        |      |

|                            |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |    |
|----------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|
| Thyroid Gland              | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| C-cell, Adenoma            |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 1  |
| Follicular Cell, Carcinoma |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | X |   | 3  |

GENERAL BODY SYSTEM

NONE

GENITAL SYSTEM

|                |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |    |
|----------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|
| Clitoral Gland | + | + | + | + | + | + | + | + | + | + | + | + | M | + | + | + | + | + | + | + | + | + | 44 |
| Ovary          | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Uterus         | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |

HEMATOPOIETIC SYSTEM

|  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |         |
|--|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---------|
| Bone Marrow  | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50      |
| Lymph Node<br>Renal, Hemangiosarcoma                                   |   |   |   |   | + | + | + |   |   | + |   |   |   |   |   |   |   |   |   |   |   |   | 10<br>1 |
| Lymph Node, Bronchial<br>Carcinoma, Metastatic, Uncertain Primary Site | M | + | + | + | M | M | + | M | M | + | M | + | M | M | + | + | + | M | M | M | M | M | 27<br>1 |
| Lymph Node, Mandibular<br>Hemangiosarcoma                              | + | + | + | + | M | + | + | + | + | M | M | M | M | + | + | M | + | M | + | + | M | + | 35<br>1 |
| Lymph Node, Mediastinal  | + | + | + | + | + | + | M | + | + | + | + | + | + | + | M | + | + | + | + | + | + | + | 47      |
| Lymph Node, Mesenteric   | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | M | + | + | + | + | + | + | 49      |

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

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



Experiment Number: 20515 - 04  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: MICE/B6C3F1

**P17: NEOPLASMS BY INDIVIDUAL ANIMAL (SYSTEMIC LESIONS ABRIDGED)**  
 Metal working fluids (CIMSTAR 3800)  
 CAS Number: CIMSTAR3800

Date Report Requested: 03/08/2013  
 Time Report Requested: 14:13:47  
 First Dose M/F: 05/05/08 / 05/05/08  
 Lab: BNW

| B6C3F1 MICE FEMALE<br>100 mg/m3 | DAY ON TEST      |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  | * TOTALS |
|---------------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|----------|
|                                 | 0<br>7<br>3<br>2 | 0<br>7<br>3<br>2 | 0<br>7<br>3<br>2 | 0<br>7<br>3<br>2 | 0<br>7<br>3<br>2 | 0<br>7<br>3<br>2 | 0<br>7<br>3<br>2 | 0<br>7<br>3<br>2 | 0<br>7<br>3<br>2 | 0<br>7<br>3<br>2 | 0<br>7<br>3<br>2 | 0<br>7<br>3<br>2 | 0<br>7<br>3<br>2 | 0<br>7<br>3<br>2 | 0<br>7<br>3<br>2 | 0<br>7<br>3<br>2 | 0<br>7<br>3<br>2 | 0<br>7<br>3<br>2 | 0<br>7<br>3<br>2 | 0<br>7<br>3<br>2 | 0<br>7<br>3<br>2 | 0<br>7<br>3<br>2 | 0<br>7<br>3<br>2 |                  |          |
| ANIMAL ID                       | 0<br>7<br>0<br>6 | 0<br>7<br>0<br>4 | 0<br>7<br>0<br>7 | 0<br>7<br>0<br>1 | 0<br>7<br>0<br>2 | 0<br>7<br>0<br>2 | 0<br>7<br>0<br>3 | 0<br>7<br>0<br>3 | 0<br>7<br>0<br>3 | 0<br>7<br>0<br>3 | 0<br>7<br>0<br>4 | 0<br>7<br>0<br>4 | 0<br>7<br>0<br>4 | 0<br>7<br>0<br>0 | 0<br>7<br>0<br>1 | 0<br>7<br>0<br>1 | 0<br>7<br>0<br>2 | 0<br>7<br>0<br>2 | 0<br>7<br>0<br>3 | 0<br>7<br>0<br>3 | 0<br>7<br>0<br>4 | 0<br>7<br>0<br>4 | 0<br>7<br>0<br>1 | 0<br>7<br>0<br>6 |          |

Rhabdomyosarcoma, Metastatic, Skeletal Muscle

1

Spinal Cord

3

**RESPIRATORY SYSTEM**

|                                      |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |    |
|--------------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|
| Larynx                               | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Lung                                 | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Alveolar/Bronchiolar Adenoma         |   |   |   |   |   | X |   |   |   |   |   | X |   |   |   |   |   | X |   |   |   |   |   |   | 4  |
| Alveolar/Bronchiolar Carcinoma       |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | X |   | X | 8  |
| Carcinoma, Metastatic, Mammary Gland |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 1  |
| Nose                                 | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Trachea                              | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |

**SPECIAL SENSES SYSTEM**

|                 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |    |
|-----------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|
| Eye             | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Harderian Gland | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Adenoma         |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 1  |
| Carcinoma       |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | X |   |   | 2  |

**URINARY SYSTEM**

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

**SYSTEMIC LESIONS**

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

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

Experiment Number: 20515 - 04

P17: NEOPLASMS BY INDIVIDUAL ANIMAL (SYSTEMIC LESIONS ABRIDGED)

Date Report Requested: 03/08/2013

Test Type: CHRONIC

Metal working fluids (CIMSTAR 3800)

Time Report Requested: 14:13:47

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: CIMSTAR3800

First Dose M/F: 05/05/08 / 05/05/08

Species/Strain: MICE/B6C3F1

Lab: BNW

| B6C3F1 MICE FEMALE<br><br>100 mg/m3 | DAY ON TEST |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |    | * TOTALS |
|-------------------------------------|-------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|----------|
|                                     | 0           | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  |          |
|                                     | 7           | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7  |          |
|                                     | 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 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3  |          |
|                                     | 0           | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  |          |
|                                     | 0           | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  |          |
|                                     | 7           | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7  |          |
|                                     | 0           | 1 | 1 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 0 | 0 | 1 | 1 | 1 | 2 | 2 | 3 | 3 | 4 | 4 | 4  |          |
|                                     | 6           | 4 | 7 | 1 | 6 | 8 | 4 | 5 | 7 | 8 | 4 | 7 | 8 | 1 | 5 | 2 | 3 | 6 | 3 | 7 | 3 | 9 | 0 | 1 | 6  |          |
|                                     |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |    |          |
| Multiple Organ                      | +           | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | +  | 50       |
| Histiocytic Sarcoma                 |             |   |   |   |   | X |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 1  |          |
| Lymphoma Malignant                  | X           |   |   | X |   |   |   |   | X | X |   |   | X | X | X |   |   |   |   |   |   | X | X |   | 20 |          |

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

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

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