

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

**P04: NEOPLASMS BY INDIVIDUAL ANIMAL**  
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

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Lab: BNW

<b>B6C3F1 MICE MALE</b>	DAY ON TEST	0730	0731	0732	0739	0739	0739	0739	0739	0739	0739	0739	0739	0739	0739	0739	0739	0739	0739	0739	0739	0739	0739	0739	0739	0739	0739	<b>Control</b>	ANIMAL ID	0001	0002	0003	0004	0005	0006	0007	0008	0009	0010	0011	0012	0013	0014	0015	0016	0017	0018	0019	0020	0021	0022	0023	0024	0025	<b>males (cont...)</b>
	0026	0027	0028	0029	0030	0031	0032	0033	0034	0035	0036	0037	0038	0039	0040	0041	0042	0043	0044	0045	0046	0047	0048	0049	0050	0051	0052			0053	0054	0055																							

**ALIMENTARY SYSTEM**

Esophagus	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Gallbladder	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	+
Intestine Large, Cecum	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Intestine Large, Colon	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Intestine Large, Rectum	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Intestine Small, Duodenum Adenoma	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Intestine Small, Ileum	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Intestine Small, Jejunum	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Liver	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Hepatocellular Adenoma		X						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					
Hepatocellular Carcinoma, Multiple																												
Lymphoma Malignant											X																	
Mesentery	+			+																								
Hemangioma	X																											
Hepatocellular Carcinoma, Metastatic, Liver																												
Lymphoma Malignant																												

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

M .. Missing tissue  
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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
		7	7	7	7	7	7	7	5	5	7	7	6	7	7	7	7	7	7	7	7	7	7	7
Control	ANIMAL ID	3	3	2	2	0	2	2	6	5	2	3	6	3	2	2	3	3	2	3	3	3	3	3
		0	1	9	9	9	9	9	5	9	9	0	9	0	9	9	0	1	9	0	9	0	5	0
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	2	2	2	2
		1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3

males  
(cont...)

Pancreas	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Carcinoma, Metastatic, Stomach, Glandular																								
Salivary Glands	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Stomach, Forestomach	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Stomach, Glandular	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Carcinoma																								
Tooth	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	

### CARDIOVASCULAR SYSTEM

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

### ENDOCRINE SYSTEM

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

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		DAY ON TEST																												
		0730	0731	0732	0733	0734	0735	0736	0737	0738	0739	0740	0741	0742	0743	0744	0745	0746	0747	0748	0749	0750	0751	0752	0753	0754		0755		
<b>B6C3F1 MICE MALE</b>	<b>Control</b>	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	<b>males (cont...)</b>	
		0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000		0000
		0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000		0000
		0001	0002	0003	0004	0005	0006	0007	0008	0009	0010	0011	0012	0013	0014	0015	0016	0017	0018	0019	0020	0021	0022	0023	0024	0025	0026	0027		0028

Adenoma

X

Parathyroid Gland

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

Pituitary Gland

+ +

Thyroid Gland

+ +

**GENERAL BODY SYSTEM**

NONE

**GENITAL SYSTEM**

Epididymis

+ +

Preputial Gland

+ +

Prostate

+ +

Seminal Vesicle

+ +

Testes

+ +

**HEMATOPOIETIC SYSTEM**

Bone Marrow

+ +

Lymph Node

+ +

Lumbar, Lymphoma Malignant

X

Pancreatic, Lymphoma Malignant

X

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| 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 | 0 | 0 | males<br>(cont...) |
|---|-------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|--------------------|
|   | ANIMAL ID   | 7 | 7 | 7 | 7 | 7 | 7 | 5 | 5 | 7 | 7 | 6 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 |                    |
| Control   |             | 3 | 3 | 2 | 2 | 0 | 2 | 2 | 6 | 5 | 2 | 3 | 6 | 3 | 2 | 2 | 3 | 3 | 2 | 3 | 2 | 3 | 2 | 3 | 3 | 3 | 3 |                    |
|   |             | 0 | 1 | 9 | 9 | 9 | 9 | 5 | 9 | 9 | 0 | 9 | 0 | 9 | 9 | 9 | 0 | 1 | 9 | 0 | 9 | 0 | 9 | 0 | 0 | 0 | 0 |                    |
|   |             | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |                    |
|   |             | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |                    |
|   |             | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |                    |
|   |             | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 |   |                    |
| Renal, Lymphoma Malignant   |             |   |   |   |   |   |   |   |   |   | X |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                    |
| Lymph Node, Bronchial<br>Lymphoma Malignant   |             | + | + | + | M | M | + | + | + | M | + | + | + | M | M | M | + | M | M | M | M | M | M | M | M | M | + |                    |
| Lymph Node, Mandibular  |             | + | M | + | + | + | + | M | + | M | M | + | M | + | + | M | + | + | + | M | + | + | + | + | + | + | + |                    |
| Lymph Node, Mediastinal<br>Alveolar/Bronchiolar Carcinoma, Metastatic,<br>Lung<br>Carcinoma, Metastatic, Stomach, Glandular<br>Lymphoma Malignant |             | + | M | + | + | + | M | M | + | + | + | + | M | M | + | + | + | + | + | + | + | + | + | + | + | + | + |                    |
| Lymph Node, Mesenteric<br>Carcinoma, Metastatic, Stomach, Glandular<br>Histiocytic Sarcoma<br>Lymphoma Malignant                                  |             | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |                    |
| Spleen<br>Lymphoma Malignant  |             | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |                    |
| Thymus<br>Carcinoma, Metastatic, Stomach, Glandular<br>Lymphoma Malignant   |             | + | + | + | + | + | + | 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 | M | M | M | M |
| Skin<br>Carcinoma, Metastatic, Stomach, Glandular | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |

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

Melanoma Benign

**MUSCULOSKELETAL SYSTEM**

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

**NERVOUS SYSTEM**

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

**RESPIRATORY SYSTEM**

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Larynx                                      | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Lung  | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Alveolar/Bronchiolar Adenoma                |   |   | X |   |   |   |   |   |   |   |   |   |   |   |   | X |   |   |   |   | X |   |   |   |   |
| Alveolar/Bronchiolar Carcinoma              |   | X |   |   |   |   |   |   |   |   | X |   |   | X |   |   |   |   |   |   |   | X |   |   |   |
| Alveolar/Bronchiolar Carcinoma, Multiple    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Carcinoma, Metastatic, Harderian Gland      |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | X |   |   |   |   |   |   |   |   |
| Carcinoma, Metastatic, Stomach, Glandular   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Hepatocellular Carcinoma, Metastatic, Liver |   |   |   | X |   |   | X |   |   |   |   | X |   |   |   |   |   |   |   | X |   |   |   |   |   |
| Nose  | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Pleura                                      |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |

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|                         |                    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|--------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| <b>B6C3F1 MICE MALE</b> | <b>DAY ON TEST</b> | 0730 | 0731 | 0732 | 0733 | 0734 | 0735 | 0736 | 0737 | 0738 | 0739 | 0740 | 0741 | 0742 | 0743 | 0744 | 0745 | 0746 | 0747 | 0748 | 0749 | 0750 | 0751 | 0752 | 0753 | 0754 | 0755 |      |      |
|                         | <b>Control</b>     | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 |      |
|                         | <b>ANIMAL ID</b>   | 0001 | 0002 | 0003 | 0004 | 0005 | 0006 | 0007 | 0008 | 0009 | 0010 | 0011 | 0012 | 0013 | 0014 | 0015 | 0016 | 0017 | 0018 | 0019 | 0020 | 0021 | 0022 | 0023 | 0024 | 0025 | 0026 | 0027 | 0028 |

males  
(cont...)

Alveolar/Bronchiolar Carcinoma, Metastatic,  
Lung

Trachea +

**SPECIAL SENSES SYSTEM**

Eye +

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

**URINARY SYSTEM**

Kidney Carcinoma, Metastatic, Stomach, Glandular +

Urinary Bladder Hemangiosarcoma + + + + + + + + + X + + + + + + + + + + + + + + + + + +

**SYSTEMIC LESIONS**

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

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

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





Experiment Number: 20515 - 04

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

**P04: NEOPLASMS BY INDIVIDUAL ANIMAL**

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  |
|---|-------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----------|-----------|
|   | ANIMAL ID   | 7 | 7 | 7 | 7 | 5 | 7 | 4 | 7 | 7 | 7 | 6 | 7 | 7 | 7 | 7 | 7 | 5 | 7 | 7 | 7 | 7 | 7         |           |
| <b>Control</b>                            |             | 3 | 3 | 2 | 2 | 9 | 3 | 9 | 2 | 3 | 3 | 9 | 3 | 2 | 2 | 3 | 2 | 3 | 2 | 4 | 3 | 2 | 3         |           |
|   |             | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0         |           |
|   |             | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0         |           |
|   |             | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0         |           |
|   |             | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4         |           |
|   |             | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7         |           |
| Pancreas                                  |             | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | +         | <b>50</b> |
| Carcinoma, Metastatic, Stomach, Glandular |             |   |   | X |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | <b>1</b>  |           |
| Salivary Glands                           |             | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | <b>50</b> |           |
| Stomach, Forestomach                      |             | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | <b>50</b> |           |
| Stomach, Glandular                        |             | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | <b>50</b> |           |
| Carcinoma                                 |             |   |   | X |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | <b>1</b>  |           |
| Tooth                                     |             | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | <b>50</b> |           |
| <b>CARDIOVASCULAR SYSTEM</b>              |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |           |           |
| Blood Vessel                              |             | + | + | + | + | + | + | + | + | + | + | + | + | + | M | + | + | + | + | + | + | + | <b>45</b> |           |
| Heart                                     |             | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | <b>50</b> |           |
| Carcinoma, Metastatic, Stomach, Glandular |             |   |   | X |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | <b>1</b>  |           |
| <b>ENDOCRINE SYSTEM</b>                   |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |           |           |
| Adrenal Cortex                            |             | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | <b>49</b> |           |
| Adenoma                                   |             |   |   |   |   |   |   |   |   | X |   |   |   |   |   |   |   |   | X |   |   |   | <b>2</b>  |           |
| Bilateral, Subcapsular, Adenoma           |             |   | X |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | <b>1</b>  |           |
| Subcapsular, Adenoma                      |             |   |   |   |   |   |   |   | X |   |   |   |   |   | X |   |   |   |   |   | X | X | <b>7</b>  |           |
| Subcapsular, Adenoma, Multiple            |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | X |   |   |   |   | <b>1</b>  |           |
| Adrenal Medulla                           |             | + | + | + | + | + | + | + | + | + | + | + | M | + | + | + | + | + | + | + | + | + | <b>48</b> |           |
| Bilateral, Pheochromocytoma Benign        |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | <b>1</b>  |           |
| Islets, Pancreatic                        |             | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | <b>50</b> |           |

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 + .. 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

**P04: NEOPLASMS BY INDIVIDUAL ANIMAL**

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<br>Control   | DAY ON TEST |      | ANIMAL ID |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | * TOTALS |      |    |                   |         |
|---|-------------|------|-----------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----------|------|----|-------------------|---------|
|   | 0730        | 0730 | 0735      | 0735 | 0752 | 0752 | 0771 | 0771 | 0774 | 0774 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 |          | 0777 |    |                   |         |
| Renal, Lymphoma Malignant   |             |      |           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |          |      | X  | 2                 |         |
| Lymph Node, Bronchial Lymphoma Malignant  | M           | M    | +         | +    | +    | M    | +    | +    | M    | M    | +    | M    | +    | M    | M    | M    | +    | M    | +    | +    | +    | +    | M        | +    | +  | 26<br>1           |         |
| Lymph Node, Mandibular  | +           | M    | M         | M    | +    | +    | +    | +    | +    | M    | +    | +    | +    | +    | M    | +    | M    | M    | M    | +    | M    | +    | M        | M    | 31 |                   |         |
| Lymph Node, Mediastinal Alveolar/Bronchiolar Carcinoma, Metastatic, Lung                                | M           | +    | +         | +    | +    | +    | M    | +    | +    | M    | +    | M    | +    | +    | +    | +    | +    | +    | +    | M    | +    | +    | +        | +    | M  | 39<br>1           |         |
| Carcinoma, Metastatic, Stomach, Glandular Lymphoma Malignant  |             |      |           | X    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |          |      | X  | 1<br>2            |         |
| Lymph Node, Mesenteric Carcinoma, Metastatic, Stomach, Glandular Histiocytic Sarcoma Lymphoma Malignant | +           | +    | +         | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | M    | +    | +    | +    | +    | +    | +    | +        | +    | +  | 49<br>1<br>1<br>3 |         |
| Spleen Lymphoma Malignant   | +           | +    | +         | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +        | +    | +  | X                 | 50<br>2 |
| Thymus Carcinoma, Metastatic, Stomach, Glandular Lymphoma Malignant                                     | +           | +    | +         | +    | +    | +    | +    | M    | +    | +    | M    | +    | +    | +    | M    | +    | +    | +    | +    | M    | M    | +    | M        | +    | +  | 41<br>1<br>2      |         |

**INTEGUMENTARY SYSTEM**

|  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |         |
|--|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---------|
| Mammary Gland                                  | M | M | M | M | M | M | M | + | M | M | M | M | M | M | M | M | M | M | M | M | M | M | M | M | M | 1 |         |
| Skin Carcinoma, Metastatic, Stomach, Glandular | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | X | 50<br>1 |

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 + .. Tissue examined microscopically  
 X .. Lesion present  
 I .. Insufficient tissue

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Experiment Number: 20515 - 04

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P04: NEOPLASMS BY INDIVIDUAL ANIMAL

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 |    |  |
|--|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----------|----|--|
|  | 0730        | 0733 | 0732 | 0722 | 0759 | 0733 | 0792 | 0739 | 0723 | 0733 | 0733 | 0793 | 0700 | 0704 | 0707 | 0707 | 0707 | 0707 | 0707 | 0707 | 0707 | 0707 | 0707 |      |          |    |  |
| Control  | 0000        | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 |          |    |  |
|  | 0026        | 0007 | 0008 | 0009 | 0030 | 0031 | 0032 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033 | 0033     |    |  |
| Alveolar/Bronchiolar Carcinoma, Metastatic, Lung |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | X        | 1  |  |
| Trachea  | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +        | 50 |  |
| <b>SPECIAL SENSES SYSTEM</b>                     |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |          |    |  |
| Eye  | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +        | 50 |  |
| Harderian Gland Adenoma                          | X           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |          | 7  |  |
| Harderian Gland Carcinoma                        |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |          | 4  |  |
| Harderian Gland Bilateral, Carcinoma             |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |          | 1  |  |
| <b>URINARY SYSTEM</b>                            |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |          |    |  |
| Kidney   | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +        | 50 |  |
| Kidney Carcinoma, Metastatic, Stomach, Glandular |             |      |      | X    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |          | 1  |  |
| Urinary Bladder                                  | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +        | 50 |  |
| Urinary Bladder Hemangiosarcoma                  |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |          | 1  |  |
| <b>SYSTEMIC LESIONS</b>                          |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |          |    |  |
| Multiple Organ                                   | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +        | 50 |  |
| Multiple Organ Histiocytic Sarcoma               |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |          | 1  |  |
| Multiple Organ Lymphoma Malignant                |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |          | 3  |  |

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Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P04: NEOPLASMS BY INDIVIDUAL ANIMAL

Metal working fluids (CIMSTAR 3800)

CAS Number: CIMSTAR3800

Date Report Requested: 03/08/2013

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

Lab: BNW

|                         |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                    |
|-------------------------|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|--------------------|
| <b>B6C3F1 MICE MALE</b> | DAY ON TEST | 0713 | 0729 | 0731 | 0764 | 0772 | 0777 | 0777 | 0766 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0755 | 0772 | 0766 | 0777 | 0777 | 0755 | 0777 | 0744 | 0744 | males<br>(cont...) |
|                         | ANIMAL ID   | 0020 | 0022 | 0023 | 0024 | 0025 | 0026 | 0027 | 0028 | 0029 | 0030 | 0031 | 0032 | 0033 | 0034 | 0035 | 0036 | 0037 | 0038 | 0039 | 0040 | 0041 | 0042 | 0043 | 0044 |                    |

Mesentery  
Lymphoma Malignant

+

Pancreas  
Lymphoma Malignant

+ +

Salivary Glands

+ +

Stomach, Forestomach

+ +

Stomach, Glandular

+ +

Tooth

+ +

CARDIOVASCULAR SYSTEM

Blood Vessel

+ +

Heart  
Pericardium, Alveolar/Bronchiolar Carcinoma,  
Metastatic, Lung

+ +

ENDOCRINE SYSTEM

Adrenal Cortex  
Subcapsular, Adenoma

+ X X + +

Adrenal Medulla

+ +

Islets, Pancreatic  
Adenoma

+ X

\* .. Total animals with tissue examined microscopically; Total animals with tumor  
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X .. Lesion present  
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Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

**P04: NEOPLASMS BY INDIVIDUAL ANIMAL**

Metal working fluids (CIMSTAR 3800)

CAS Number: CIMSTAR3800

Date Report Requested: 03/08/2013

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Lab: BNW

|  |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                    |
|--|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|--------------------|
| <b>B6C3F1 MICE MALE</b><br><b>10 mg/m3</b> | DAY ON TEST | 0713 | 0731 | 0734 | 0729 | 0771 | 0777 | 0777 | 0762 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0759 | 0772 | 0767 | 0777 | 0777 | 0757 | 0777 | 0744 | males<br>(cont...) |
|  | ANIMAL ID   | 0020 | 0002 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 |                    |

|                   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|-------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Parathyroid Gland | M | + | + | + | M | + | M | + | + | + | M | + | M | + | + | + | + | + | M | + | M | + | M | M |
| Pituitary Gland   | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Thyroid Gland     | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |

**GENERAL BODY SYSTEM**

|  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|--|--|--|--|--|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Tissue NOS   |  |  |  |  | + |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Mediastinum, Alveolar/Bronchiolar Carcinoma,<br>Metastatic, Lung |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Mediastinum, Hepatocellular Carcinoma,<br>Metastatic, Liver      |  |  |  |  | X |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

**GENITAL SYSTEM**

|                                      |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Epididymis                           | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Preputial Gland                      | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Prostate                             | M | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Seminal Vesicle<br>Adenoma           | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Testes<br>Interstitial Cell, Adenoma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |

**HEMATOPOIETIC SYSTEM**

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

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Species/Strain: MICE/B6C3F1

P04: NEOPLASMS BY INDIVIDUAL ANIMAL

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<br>(cont...) |
|------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|--------------------|
|                  | 0<br>7<br>1<br>3      | 0<br>7<br>2<br>9      | 0<br>7<br>3<br>1      | 0<br>6<br>4<br>7      | 0<br>7<br>2<br>9      | 0<br>7<br>3<br>1      | 0<br>7<br>3<br>0      | 0<br>6<br>6<br>2      | 0<br>7<br>3<br>0      | 0<br>7<br>6<br>6      | 0<br>7<br>7<br>9      | 0<br>7<br>7<br>0      | 0<br>7<br>7<br>2      | 0<br>7<br>7<br>3      | 0<br>7<br>7<br>3      | 0<br>7<br>7<br>2      | 0<br>7<br>5<br>9      | 0<br>7<br>2<br>9      | 0<br>6<br>3<br>2      | 0<br>7<br>3<br>9      | 0<br>7<br>3<br>9      | 0<br>7<br>3<br>1      | 0<br>5<br>9<br>1      | 0<br>7<br>3<br>0      | 0<br>4<br>3<br>9      |                       |                    |
| 10 mg/m3         | 0<br>0<br>2<br>0<br>1 | 0<br>0<br>2<br>0<br>2 | 0<br>0<br>2<br>0<br>3 | 0<br>0<br>2<br>0<br>4 | 0<br>0<br>2<br>0<br>5 | 0<br>0<br>2<br>0<br>6 | 0<br>0<br>2<br>0<br>7 | 0<br>0<br>2<br>0<br>8 | 0<br>0<br>2<br>0<br>9 | 0<br>0<br>2<br>0<br>0 | 0<br>0<br>2<br>1<br>1 | 0<br>0<br>2<br>1<br>1 | 0<br>0<br>2<br>1<br>1 | 0<br>0<br>2<br>1<br>1 | 0<br>0<br>2<br>1<br>1 | 0<br>0<br>2<br>1<br>1 | 0<br>0<br>2<br>1<br>1 | 0<br>0<br>2<br>1<br>1 | 0<br>0<br>2<br>1<br>1 | 0<br>0<br>2<br>2<br>1 | 0<br>0<br>2<br>2<br>2 | 0<br>0<br>2<br>2<br>2 | 0<br>0<br>2<br>2<br>2 | 0<br>0<br>2<br>2<br>3 | 0<br>0<br>2<br>2<br>4 | 0<br>0<br>2<br>2<br>5 |                    |

|  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lymph Node                                       |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | + |   |
| Lumbar, Lymphoma Malignant                       |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | X |   |
| Pancreatic, Lymphoma Malignant                   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Renal, Lymphoma Malignant                        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | X |   |
| Lymph Node, Bronchial                            | M | + | + | M | + | + | M | + | + | M | + | + | + | + | + | + | + | + | M | + | + | + | M | M | + | M |   |
| Alveolar/Bronchiolar Carcinoma, Metastatic, Lung |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Lymphoma Malignant                               |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | X |   |
| Lymph Node, Mandibular                           | + | + | + | M | + | M | M | + | + | + | + | + | + | + | M | M | + | M | + | M | + | + | + | + | + | + | + |
| Lymphoma Malignant                               |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Lymph Node, Mediastinal                          | M | M | + | + | + | + | + | + | + | + | + | + | + | + | M | + | + | + | + | + | + | M | + | + | + | + | + |
| Alveolar/Bronchiolar Carcinoma, Metastatic, Lung |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Lymphoma Malignant                               |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | X |   |
| Lymph Node, Mesenteric                           | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Hemangiosarcoma                                  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Lymphoma Malignant                               |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | X |   |
| Spleen   | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Hemangiosarcoma                                  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Lymphoma Malignant                               |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Thymus   | + | M | + | + | + | M | M | M | + | + | + | + | + | + | + | + | + | + | + | + | M | + | + | + | + | + | M |
| Lymphoma Malignant                               |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |

INTEGUMENTARY SYSTEM

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

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

Experiment Number: 20515 - 04

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

**P04: NEOPLASMS BY INDIVIDUAL ANIMAL**

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<br>10 mg/m3                    | DAY ON TEST |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | ANIMAL ID | males<br>(cont...) |      |
|---|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----------|--------------------|------|
|   | 0713        | 0723 | 0731 | 0647 | 0779 | 0771 | 0776 | 0662 | 0770 | 0776 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0522 | 0729 | 0729 | 0622 | 0727 | 0727 | 0727 | 0557 |           |                    | 0774 |
| Mammary Gland                                   | M           | M    | M    | M    | M    | M    | M    | M    | M    | M    | M    | M    | M    | M    | M    | M    | M    | M    | M    | M    | M    | M    | M    | M    | M         | M                  |      |
| Skin  | +           | +    | +    | +    | +    | +    | +    | +    | M    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +         | +                  |      |
| <b>MUSCULOSKELETAL SYSTEM</b>                   |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |           |                    |      |
| Bone  | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +         | +                  |      |
| Maxilla, Carcinoma, Metastatic, Harderian Gland |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |           | X                  |      |
| Skeletal Muscle                                 | +           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |           |                    |      |
| <b>NERVOUS SYSTEM</b>                           |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |           |                    |      |
| Brain   | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +         | +                  |      |
| Peripheral Nerve                                | +           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |           |                    |      |
| Spinal Cord                                     | +           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |           |                    |      |
| <b>RESPIRATORY SYSTEM</b>                       |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |           |                    |      |
| Larynx  | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +         | +                  |      |
| Lung  | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +         | +                  |      |
| Alveolar/Bronchiolar Adenoma                    |             |      |      |      |      |      |      |      |      |      | X    |      |      |      |      |      |      |      |      |      |      |      |      |      |           |                    |      |
| Alveolar/Bronchiolar Carcinoma                  | X           | X    |      |      |      |      | X    |      |      |      |      |      |      |      | X    |      |      | X    |      |      |      |      |      |      |           |                    |      |
| Alveolar/Bronchiolar Carcinoma, Multiple        |             |      |      |      |      |      |      |      |      | X    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |           |                    |      |
| Hepatocellular Carcinoma, Metastatic, Liver     | X           |      |      | X    |      |      |      |      |      | X    |      | X    |      |      |      |      |      |      |      |      |      |      |      | X    |           |                    |      |
| 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

**P04: NEOPLASMS BY INDIVIDUAL ANIMAL**

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<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 | 0 | ANIMAL ID | males<br>(cont...) |
|------------------------------|-------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----------|--------------------|
|                              | 7           | 7 | 7 | 6 | 7 | 7 | 7 | 6 | 7 | 7 | 7 | 7 | 7 | 7 | 5 | 7 | 6 | 7 | 7 | 7 | 5 | 7 | 7 | 4 |   |           |                    |
|                              | 1           | 2 | 3 | 4 | 2 | 3 | 3 | 6 | 3 | 0 | 2 | 3 | 3 | 2 | 2 | 9 | 2 | 3 | 3 | 2 | 3 | 9 | 3 | 3 | 0 |           |                    |
|                              | 3           | 9 | 1 | 7 | 9 | 1 | 0 | 2 | 0 | 6 | 9 | 0 | 0 | 9 | 9 | 0 | 9 | 2 | 9 | 0 | 9 | 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 |           |                    |
|                              | 2           | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |           |                    |
|                              | 0           | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 0 |           |                    |
|                              | 1           | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 1 |           |                    |

Nose +

Trachea +

**SPECIAL SENSES SYSTEM**

Eye +

Harderian Gland +  
 Adenoma X X  
 Carcinoma X

**URINARY SYSTEM**

Kidney +  
 Lymphoma Malignant X

Urinary Bladder +

**SYSTEMIC LESIONS**

Multiple Organ +  
 Lymphoma Malignant X X

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

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

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

P04: NEOPLASMS BY INDIVIDUAL ANIMAL  
 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<br>10 mg/m3 | DAY ON TEST | 0729   | 0688   | 0709   | 0703   | 0556   | 0771   | 0573   | 0750   | 0573   | 0759   | 0733   | 0729   | 0773   | 0770   | 0547   | 0773   | 0622   | 0663   | 0773   | 0673   | 0739   | 0578   | 0729   | * TOTALS |
|------------------------------|-------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|----------|
|                              | ANIMAL ID   | 002226 | 002227 | 002228 | 002229 | 002230 | 002231 | 002232 | 002233 | 002234 | 002235 | 002236 | 002237 | 002238 | 002239 | 002240 | 002241 | 002242 | 002243 | 002244 | 002245 | 002246 | 002247 | 002248 |          |

**ALIMENTARY SYSTEM**

|  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |    |              |
|--|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|--------------|
| Esophagus  | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | +  | 50           |
| Gallbladder                                      | + | + | + | + | + | + | + | + | M | + | + | + | + | + | + | + | + | + | + | + | + | + | + | M  | 44           |
| Intestine Large, Cecum                           | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | +  | 50           |
| Intestine Large, Colon<br>Adenoma                | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | +  | 50<br>1      |
| Intestine Large, Rectum                          | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | +  | 50           |
| Intestine Small, Duodenum                        | + | + | + | + | A | + | A | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | +  | 48           |
| Intestine Small, Ileum<br>Lymphoma Malignant     | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | +  | 50<br>1      |
| Intestine Small, Jejunum<br>Adenoma<br>Carcinoma | + | + | + | + | A | + | A | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | +  | 48<br>1<br>1 |
| Liver  | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | +  | 50           |
| Hemangiosarcoma, Multiple                        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | X  | 1            |
| Hepatoblastoma                                   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |    | 1            |
| Hepatocellular Adenoma                           |   |   |   | X |   |   |   |   |   |   | X | X |   | X | X | X | X |   |   |   |   | X |   | 18 |              |
| Hepatocellular Adenoma, Multiple                 |   |   | X |   | X |   | X | X |   |   |   |   |   |   |   |   |   | X |   | X |   | X | X |    | 6            |
| Hepatocellular Carcinoma                         |   |   | X | X |   | X | X |   |   |   |   |   |   |   |   | X |   |   |   |   |   |   |   |    | 15           |
| Hepatocellular Carcinoma, Multiple               |   |   |   |   | X |   |   |   | X |   |   |   |   |   |   |   |   |   |   |   |   |   |   |    | 2            |
| Lymphoma Malignant                               |   | X |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |    | 1            |

\* .. 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

P04: NEOPLASMS BY INDIVIDUAL ANIMAL  
 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<br>10 mg/m3  | DAY ON TEST |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |     | * TOTALS |
|---|-------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-----|----------|
|   | 0729        | 0628   | 0709   | 0703   | 0556   | 0771   | 0571   | 0753   | 0573   | 0753   | 0753   | 0753   | 0753   | 0753   | 0753   | 0753   | 0753   | 0753   | 0753   | 0753   | 0753   | 0753   | 0753   |     |          |
| ANIMAL ID   | 002226      | 000022 | 000022 | 000022 | 000022 | 000022 | 000022 | 000022 | 000022 | 000022 | 000022 | 000022 | 000022 | 000022 | 000022 | 000022 | 000022 | 000022 | 000022 | 000022 | 000022 | 000022 | 000022 |     |          |
| Mesentery Lymphoma Malignant  |             | +      |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        | 51  |          |
| Pancreas Lymphoma Malignant   | +           | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | 501 |          |
| Salivary Glands   | +           | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | 50  |          |
| Stomach, Forestomach  | +           | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | 50  |          |
| Stomach, Glandular  | +           | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | 50  |          |
| Tooth   | +           | +      | +      | +      |        | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | 47  |          |
| <b>CARDIOVASCULAR SYSTEM</b>  |             |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |     |          |
| Blood Vessel  | +           | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | I      | +      | +      | +      | +      | 49  |          |
| Heart Pericardium, Alveolar/Bronchiolar Carcinoma, Metastatic, Lung | +           | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | 501 |          |
| <b>ENDOCRINE SYSTEM</b>   |             |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |     |          |
| Adrenal Cortex Subcapsular, Adenoma                                 | +           | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | 504 |          |
| Adrenal Medulla   | +           | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | 50  |          |
| Islets, Pancreatic Adenoma  | +           | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | 502 |          |

\* .. Total animals with tissue examined microscopically; Total animals 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

P04: NEOPLASMS BY INDIVIDUAL ANIMAL  
 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<br>10 mg/m3                                  | DAY ON TEST |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        | * TOTALS |    |   |
|---|-------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|----------|----|---|
|   | 0729        | 0628   | 0709   | 0703   | 0556   | 0771   | 0570   | 0733   | 0565   | 0770   | 0571   | 0772   | 0579   | 0723   | 0773   | 0574   | 0770   | 0577   | 0772   | 0663   | 0773   | 0573   | 0779   | 0572   |          |    |   |
|   | ANIMAL ID   |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |          |    |   |
|   | 002226      | 000222 | 000222 | 000222 | 000331 | 000333 | 000333 | 000333 | 000333 | 000333 | 000333 | 000333 | 000333 | 000444 | 000444 | 000444 | 000444 | 000444 | 000444 | 000444 | 000444 | 000444 | 000444 | 000444 | 000444   |    |   |
| Parathyroid Gland   | M           | +      | M      | M      | +      | M      | M      | M      | M      | M      | +      | M      | +      | +      | M      | +      | M      | +      | +      | M      | +      | +      | M      | +      | +        | 28 |   |
| Pituitary Gland   | +           | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +        | 50 |   |
| Thyroid Gland   | +           | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +        | 50 |   |
| <b>GENERAL BODY SYSTEM</b>                                    |             |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |          |    |   |
| Tissue NOS  |             |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |          | 2  |   |
| Mediastinum, Alveolar/Bronchiolar Carcinoma, Metastatic, Lung |             |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |          | X  | 1 |
| Mediastinum, Hepatocellular Carcinoma, Metastatic, Liver      |             |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |          |    | 1 |
| <b>GENITAL SYSTEM</b>   |             |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |          |    |   |
| Epididymis  | +           | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +        | 50 |   |
| Preputial Gland   | +           | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | M      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +        | 49 |   |
| Prostate  | +           | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +        | 49 |   |
| Seminal Vesicle Adenoma                                       | +           | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +        | 50 |   |
| Testes  | +           | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +        | 50 |   |
| Interstitial Cell, Adenoma                                    |             |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        | X        | 1  |   |
| <b>HEMATOPOIETIC SYSTEM</b>                                   |             |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |          |    |   |
| Bone Marrow   | +           | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +        | 50 |   |

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

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

Experiment Number: 20515 - 04

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

**P04: NEOPLASMS BY INDIVIDUAL ANIMAL**

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<br>10 mg/m3                     | DAY ON TEST |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        | * TOTALS |    |
|--|-------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|----------|----|
|  | 0729        | 0628   | 0709   | 0703   | 0556   | 0771   | 0571   | 0773   | 0575   | 0773   | 0577   | 0779   | 0573   | 0773   | 0577   | 0777   | 0577   | 0777   | 0676   | 0777   | 0676   | 0773   | 0579   | 0772   |        |          |    |
| ANIMAL ID  | 002226      | 002227 | 002228 | 002229 | 002230 | 002231 | 002232 | 002233 | 002234 | 002235 | 002236 | 002237 | 002238 | 002239 | 002240 | 002241 | 002242 | 002243 | 002244 | 002245 | 002246 | 002247 | 002248 | 002249 | 002250 |          |    |
| Lymph Node                                       |             |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |          | 3  |
| Lumbar, Lymphoma Malignant                       |             |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |          | 2  |
| Pancreatic, Lymphoma Malignant                   |             |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |          | 1  |
| Renal, Lymphoma Malignant                        |             |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |          | 3  |
| Lymph Node, Bronchial                            |             |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |          | 31 |
| Alveolar/Bronchiolar Carcinoma, Metastatic, Lung |             |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |          | 1  |
| Lymphoma Malignant                               |             |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |          | 3  |
| Lymph Node, Mandibular                           |             |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |          | 36 |
| Lymphoma Malignant                               |             |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |          | 1  |
| Lymph Node, Mediastinal                          |             |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |          | 39 |
| Alveolar/Bronchiolar Carcinoma, Metastatic, Lung |             |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |          | 1  |
| Lymphoma Malignant                               |             |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |          | 2  |
| Lymph Node, Mesenteric                           |             |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |          | 50 |
| Hemangiosarcoma                                  |             |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |          | 1  |
| Lymphoma Malignant                               |             |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |          | 3  |
| Spleen   |             |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |          | 50 |
| Hemangiosarcoma                                  |             |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |          | 2  |
| Lymphoma Malignant                               |             |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |          | 5  |
| Thymus   |             |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |          | 38 |
| Lymphoma Malignant                               |             |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |          | 1  |

**INTEGUMENTARY SYSTEM**

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

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

P04: NEOPLASMS BY INDIVIDUAL ANIMAL  
 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<br>10 mg/m3                    | DAY ON TEST |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        | * TOTALS |  |  |
|---|-------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|----------|--|--|
|   | 0729        | 0628   | 0709   | 0703   | 0556   | 0771   | 0571   | 0753   | 0573   | 0760   | 0751   | 0779   | 0733   | 0772   | 0773   | 0544   | 0733   | 0722   | 0662   | 0773   | 0667   | 0733   | 0558   | 0772   |          |  |  |
| ANIMAL ID                                       | 002226      | 000227 | 000228 | 000229 | 000230 | 000231 | 000232 | 000233 | 000234 | 000235 | 000236 | 000237 | 000238 | 000239 | 000240 | 000241 | 000242 | 000243 | 000244 | 000245 | 000246 | 000247 | 000248 | 000249 |          |  |  |
| 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  | +           | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | 49       |  |  |
| <b>MUSCULOSKELETAL SYSTEM</b>                   |             |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |          |  |  |
| Bone  | +           | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | 50       |  |  |
| Maxilla, Carcinoma, Metastatic, Harderian Gland |             |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        | 1        |  |  |
| Skeletal Muscle                                 |             |        |        |        |        |        |        |        |        |        |        |        |        |        | +      |        |        |        |        |        |        |        |        | +      | 3        |  |  |
| <b>NERVOUS SYSTEM</b>                           |             |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |          |  |  |
| Brain   | +           | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | 50       |  |  |
| Peripheral Nerve                                |             |        |        |        |        |        |        |        |        |        |        |        |        |        | +      |        |        |        |        |        |        |        |        |        | 2        |  |  |
| Spinal Cord                                     |             |        |        |        |        |        |        |        |        |        |        |        |        |        | +      |        |        |        |        |        |        |        |        | +      | 3        |  |  |
| <b>RESPIRATORY SYSTEM</b>                       |             |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |          |  |  |
| Larynx  | +           | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | 50       |  |  |
| Lung  | +           | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | 50       |  |  |
| Alveolar/Bronchiolar Adenoma                    |             |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        | 2        |  |  |
| Alveolar/Bronchiolar Carcinoma                  |             |        | X      |        |        |        |        |        |        |        |        |        |        |        |        |        | X      |        |        |        |        |        |        | 7      |          |  |  |
| Alveolar/Bronchiolar Carcinoma, Multiple        |             |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        | 1      |          |  |  |
| Hepatocellular Carcinoma, Metastatic, Liver     |             |        |        | X      | X      | X      | X      |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        | 9      |          |  |  |
| Lymphoma Malignant                              |             | 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  
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Experiment Number: 20515 - 04  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: MICE/B6C3F1

P04: NEOPLASMS BY INDIVIDUAL ANIMAL  
 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<br>10 mg/m3 | DAY ON TEST | 0729   | 0628   | 0709   | 0703   | 0526   | 0721   | 0529   | 0730   | 0536   | 0733   | 0733   | 0529   | 0722   | 0733   | 0733   | 0524   | 0733   | 0722   | 0622   | 0737   | 0639   | 0739   | 0528   | 0729   | * TOTALS |  |
|------------------------------|-------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|----------|--|
|                              | ANIMAL ID   | 002226 | 002227 | 002228 | 002229 | 002230 | 002231 | 002232 | 002233 | 002234 | 002235 | 002236 | 002237 | 002238 | 002239 | 002240 | 002241 | 002242 | 002243 | 002244 | 002245 | 002246 | 002247 | 002248 | 002249 |          |  |
| Nose                         |             | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | 50       |  |
| Trachea                      |             | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | 50       |  |
| <b>SPECIAL SENSES SYSTEM</b> |             |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |          |  |
| Eye                          |             | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | 50       |  |
| Harderian Gland              |             | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | 50       |  |
| Adenoma                      |             |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        | 3        |  |
| Carcinoma                    |             |        |        | X      |        |        |        |        | X      |        |        |        |        |        |        |        |        | X      |        |        | X      |        |        |        |        | 5        |  |
| <b>URINARY SYSTEM</b>        |             |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |          |  |
| Kidney                       |             | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | 50       |  |
| Lymphoma Malignant           |             |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        | 1        |  |
| Urinary Bladder              |             | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | 50       |  |
| <b>SYSTEMIC LESIONS</b>      |             |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |          |  |
| Multiple Organ               |             | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | +      | 50       |  |
| Lymphoma Malignant           |             |        | X      |        |        |        |        |        |        |        |        |        |        | 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  
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Experiment Number: 20515 - 04  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: MICE/B6C3F1

P04: NEOPLASMS BY INDIVIDUAL ANIMAL  
 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 | 0729                   | 0640 | 0730 | 0763 | 0779 | 0771 | 0773 | 0748 | 0774 | 0777 | 0773 | 0773 | 0772 | 0777 | 0777 | 0773 | 0768 | 0773 | 0729 | 0773 | 0773 | 0764 | 0776 | 0777 | 0766 | 0777 |
|                         | ANIMAL ID   | 0040                   | 0044 | 0044 | 0044 | 0044 | 0044 | 0044 | 0044 | 0044 | 0044 | 0044 | 0044 | 0044 | 0044 | 0044 | 0044 | 0044 | 0044 | 0044 | 0044 | 0044 | 0044 | 0044 | 0044 | 0044 | 0044 |
| <b>30 mg/m3</b>         |             | 1                      | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 0    | 1    | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 0    | 1    | 2    | 3    | 4    | 5    |      |
|                         |             | <b>males (cont...)</b> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

**ALIMENTARY SYSTEM**

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

P04: NEOPLASMS BY INDIVIDUAL ANIMAL  
 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 | 0729 | 0640 | 0730 | 0769 | 0773 | 0777 | 0777 | 0777 | 0473 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0673 | 0777 | 0777 | 0673 | 0777 | 0767 | 0773 | <b>males<br/>(cont...)</b> |
|                         | ANIMAL ID   | 0040 | 0044 | 0044 | 0044 | 0044 | 0044 | 0044 | 0044 | 0044 | 0044 | 0044 | 0044 | 0044 | 0044 | 0044 | 0044 | 0044 | 0044 | 0044 | 0044 | 0044 | 0044 | 0044 | 0044 |                            |

**MUSCULOSKELETAL SYSTEM**

|                               |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|-------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bone                          | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Skeletal Muscle               |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Carcinoma, Metastatic, Kidney |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |

**NERVOUS SYSTEM**

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

**RESPIRATORY SYSTEM**

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

**SPECIAL SENSES SYSTEM**

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

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









Experiment Number: 20515 - 04

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P04: NEOPLASMS BY INDIVIDUAL ANIMAL

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<br>30 mg/m3 | DAY ON TEST |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |  | * TOTALS |
|------------------------------|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--|----------|
|                              | 0730        | 0731  | 0732  | 0733  | 0734  | 0735  | 0736  | 0737  | 0738  | 0739  | 0740  | 0741  | 0742  | 0743  | 0744  | 0745  | 0746  | 0747  | 0748  | 0749  | 0750  | 0751  | 0752  |  |          |
| ANIMAL ID                    | 00426       | 00447 | 00468 | 00489 | 00510 | 00531 | 00552 | 00573 | 00594 | 00615 | 00636 | 00657 | 00678 | 00699 | 00720 | 00741 | 00762 | 00783 | 00804 | 00825 | 00846 | 00867 | 00888 |  |          |

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |    |    |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|----|
| Extra Adrenal Tissue, Carcinoma, Metastatic, Kidney |   |   |   |   |   |   |   |   |   |   |   | X |   |   |   |   |   |   |   |   |   |   |   |   | 1  |    |
| Subcapsular, Adenoma                                |   |   |   |   |   |   |   |   |   |   |   |   |   | X |   |   | X |   |   |   |   |   |   |   | 5  |    |
| Adrenal Medulla                                     | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |    |
| Pheochromocytoma Benign                             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 1  |    |
| Islets, Pancreatic                                  | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |    |
| Adenoma   |   |   |   |   |   |   |   |   |   |   |   | X |   |   |   |   |   |   |   |   |   |   |   |   | 1  |    |
| Parathyroid Gland                                   | + | M | + | + | M | M | + | M | + | M | + | + | M | M | M | + | M | M | M | + | + | + | + | M | +  | 27 |
| Pituitary Gland                                     | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | +  | 50 |
| Thyroid Gland                                       | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | +  | 49 |

GENERAL BODY SYSTEM

NONE

GENITAL SYSTEM

|                 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |    |
|-----------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|
| Epididymis      | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Preputial Gland | + | + | + | + | + | + | + | + | + | + | + | M | + | + | + | + | + | + | + | + | + | + | + | + | + | 48 |
| Prostate        | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Seminal Vesicle | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Testes          | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |

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

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





Experiment Number: 20515 - 04

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

### P04: NEOPLASMS BY INDIVIDUAL ANIMAL

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<br>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 | * TOTALS |
|------------------------------|-------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----------|
|                              | ANIMAL ID   | 7 | 7 | 5 | 7 | 7 | 7 | 7 | 7 | 6 | 4 | 5 | 5 | 6 | 7 | 5 | 7 | 7 | 7 | 6 | 7 | 7 | 7 | 7 |          |
|                              |             | 3 | 3 | 7 | 3 | 3 | 3 | 1 | 3 | 2 | 4 | 4 | 3 | 3 | 9 | 3 | 8 | 3 | 3 | 3 | 2 | 3 | 3 | 3 |          |
|                              |             | 0 | 1 | 3 | 1 | 1 | 0 | 5 | 1 | 9 | 5 | 7 | 4 | 4 | 8 | 0 | 1 | 0 | 0 | 0 | 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 |          |
|                              |             | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 |          |
|                              |             | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |          |

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |              |    |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|--------------|----|
| Eye                                     | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | +            | 50 |
| Harderian Gland<br>Adenoma<br>Carcinoma | + | + | + | + |   | M | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 49<br>4<br>1 |    |
|   |   |   |   |   | X |   | X |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |              |    |

### URINARY SYSTEM

|  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |              |
|--|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|--------------|
| Kidney<br>Renal Tubule, Adenoma<br>Renal Tubule, Carcinoma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50<br>1<br>1 |
|  |   |   |   |   |   |   |   |   |   |   | X |   |   |   |   |   |   |   |   |   |   |   |   |              |
| Urinary Bladder  | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50           |

### SYSTEMIC LESIONS

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |              |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|--------------|
| Multiple Organ<br>Histiocytic Sarcoma<br>Lymphoma Malignant | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50<br>1<br>1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|--------------|

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

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

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

P04: NEOPLASMS BY INDIVIDUAL ANIMAL  
 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 | 0729 | 0687 | 0729 | 0733 | 0731 | 0729 | 0733 | 0729 | 0731 | 0729 | 0733 | 0729 | 0731 | 0729 | 0733 | 0729 | 0731 | 0729 | 0733 | 0729 | 0731 | 0729 | 0733 | <b>males<br/>(cont...)</b> |
|                         | ANIMAL ID   | 0060 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 |                            |

**ALIMENTARY SYSTEM**

|                                      |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Esophagus<br>Squamous Cell Papilloma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Gallbladder                          | M | + | + | + | + | + | + | + | + | + | + | + | + | M | + | + | + | + | + | M | + | + | + | + |
| Intestine Large, Cecum               | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Large, Colon               | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Large, Rectum              | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Small, Duodenum<br>Adenoma | + | + | + | + | + | A | + | + | + | + | A | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Small, Ileum               | + | + | + | + | + | A | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Small, Jejunum             | + | + | + | + | + | + | + | + | + | + | A | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Liver                                | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Hepatocellular Adenoma               |   |   |   |   |   |   |   |   |   |   | X |   |   |   |   |   |   | X | X | X |   | X |   | X |
| Hepatocellular Adenoma, Multiple     |   |   |   | X | X | X |   | X | X |   |   | X |   |   |   |   |   |   |   | X |   |   |   | X |
| Hepatocellular Carcinoma             |   | X |   | X | X |   |   |   | X |   | X |   |   |   |   |   | X |   | X |   |   |   |   |   |
| Hepatocellular Carcinoma, Multiple   |   |   |   |   |   | X |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Mesentery                            |   |   |   |   |   |   |   |   |   |   | + |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Pancreas                             | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |

\* .. Total animals with tissue examined microscopically; 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             | 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 | males<br>(cont...) |   |
|------------------------------|-------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|--------------------|---|
|                              |             | 7 | 6 | 7 | 7 | 7 | 7 | 6 | 7 | 7 | 7 | 6 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 |                    | 7 |
|                              |             | 2 | 8 | 2 | 3 | 3 | 2 | 2 | 2 | 3 | 3 | 2 | 0 | 3 | 3 | 2 | 3 | 2 | 2 | 2 | 2 | 3 | 3 |                    | 2 |
| 100 mg/m3                    | ANIMAL ID   | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | males<br>(cont...) |   |
|                              |             | 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 |
| Salivary Glands              |             | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |                    |   |
| Stomach, Forestomach         |             | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |                    |   |
| Stomach, Glandular           |             | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |                    |   |
| Tooth                        |             | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |                    |   |
| <b>CARDIOVASCULAR SYSTEM</b> |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                    |   |
| Blood Vessel                 |             | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |                    |   |
| Heart                        |             | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |                    |   |
| <b>ENDOCRINE SYSTEM</b>      |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                    |   |
| Adrenal Cortex               |             | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |                    |   |
| Adenoma                      |             |   |   |   |   |   |   | X |   |   |   |   |   |   |   |   |   |   | X | X |   |   |   |                    |   |
| Subcapsular, Adenoma         |             |   |   |   |   |   |   |   |   |   |   | X |   | X |   |   |   |   | X |   |   |   | X |                    |   |
| Adrenal Medulla              |             | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |                    |   |
| Islets, Pancreatic           |             | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |                    |   |
| Adenoma                      |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                    |   |
| Parathyroid Gland            |             | + | M | M | + | + | + | + | M | + | M | + | M | M | + | M | + | + | M | M | M | + | M | M                  |   |
| Pituitary Gland              |             | + | + | + | + | + | M | + | + | M | + | + | + | + | + | + | + | + | + | + | + | + | + |                    |   |
| Thyroid Gland                |             | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |                    |   |

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

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

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

P04: NEOPLASMS BY INDIVIDUAL ANIMAL  
 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 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | males<br>(cont...) |
|------------------|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|--------------------|
|                  | 0729        | 0687 | 0772 | 0773 | 0773 | 0672 | 0772 | 0773 | 0773 | 0773 | 0773 | 0672 | 0773 | 0773 | 0773 | 0773 | 0773 | 0773 | 0773 | 0773 | 0773 |                    |
| 100 mg/m3        | ANIMAL ID   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                    |
|                  | 0060        | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066               |
|                  | 12          | 34   | 56   | 78   | 90   | 11   | 12   | 13   | 14   | 15   | 16   | 17   | 18   | 19   | 20   | 21   | 22   | 23   | 24   | 25   | 26   | 27                 |

**GENERAL BODY SYSTEM**

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

**GENITAL SYSTEM**

Epididymis +

Penis

Preputial Gland M +

Prostate +

Seminal Vesicle +

Testes +

**HEMATOPOIETIC SYSTEM**

Bone Marrow + + + + + + + + + + + + + + + + + X + + + + +

Mast Cell Tumor Malignant, Metastatic, Skin

Lymph Node

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

Lymph Node, Mandibular + M + + + + M + + + + M + M + + 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  
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Experiment Number: 20515 - 04

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P04: NEOPLASMS BY INDIVIDUAL ANIMAL

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 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | males<br>(cont...) |      |   |  |
|--|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|--------------------|------|---|--|
|  | 0729        | 0687 | 0729 | 0733 | 0731 | 0722 | 0722 | 0739 | 0700 | 0701 | 0701 | 0700 | 0700 | 0700 | 0700 | 0700 | 0700 | 0700 | 0700 | 0700 | 0700 | 0700 |                    | 0700 |   |  |
| 100 mg/m3  | ANIMAL ID   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                    |      |   |  |
|  | 0060        | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066               |      |   |  |
| Lymph Node, Mediastinal<br>Alveolar/Bronchiolar Carcinoma, Metastatic,<br>Lung<br>Lymphoma Malignant                 | +           | +    | M    | +    | M    | +    | M    | +    | +    | +    | +    | M    | +    | +    | M    | +    | +    | +    | +    | M    | +    | M    | +                  | +    | M |  |
|  |             | X    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                    |      |   |  |
| Lymph Node, Mesenteric   | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +                  | +    | + |  |
| Spleen<br>Lymphoma Malignant   | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +                  | +    | + |  |
|  |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                    |      | X |  |
| Thymus   | +           | M    | +    | +    | +    | +    | +    | +    | M    | M    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +                  | +    | + |  |
| <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    | M |  |
| Skin<br>Melanoma Benign<br>Subcutaneous Tissue, Hemangiosarcoma<br>Subcutaneous Tissue, Mast Cell Tumor<br>Malignant | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +                  | +    | + |  |
|  |             | X    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                    |      |   |  |
|  |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | X    |                    |      |   |  |
|  |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                    |      |   |  |
| <b>MUSCULOSKELETAL SYSTEM</b>  |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                    |      |   |  |
| Bone   | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +                  | +    | + |  |
| Skeletal Muscle  |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                    |      |   |  |
|  |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                    |      |   |  |
|  |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                    |      |   |  |
| <b>NERVOUS SYSTEM</b>  |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                    |      |   |  |
| Brain  | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +                  | +    | + |  |

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

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

P04: NEOPLASMS BY INDIVIDUAL ANIMAL  
 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<br>(cont...) |      |
|------------------|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----------|--------------------|------|
|                  | 0729        | 0687 | 0773 | 0773 | 0777 | 0676 | 0777 | 0777 | 0777 | 0777 | 0676 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 | 0777 |           |                    | 0777 |
| 100 mg/m3        | 0060        | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066 | 0066      | 0066               | 0066 |

Peripheral Nerve  
 Spinal Cord

+  
 +

**RESPIRATORY SYSTEM**

Larynx  
 Lung  
 Alveolar/Bronchiolar Adenoma  
 Alveolar/Bronchiolar Carcinoma  
 Alveolar/Bronchiolar Carcinoma, Multiple  
 Hepatocellular Carcinoma, Metastatic, Liver  
 Mast Cell Tumor Malignant, Metastatic,  
 Uncertain Primary Site  
 Nose  
 Trachea

+  
 +  
 X  
 X X  
 X X  
 X  
 +  
 +

**SPECIAL SENSES SYSTEM**

Eye  
 Harderian Gland  
 Adenoma  
 Carcinoma  
 Bilateral, Adenoma

+  
 +  
 X X  
 X  
 X

**URINARY 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

P04: NEOPLASMS BY INDIVIDUAL ANIMAL

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<br><br>100 mg/m3    | DAY ON TEST | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | ANIMAL ID | males<br>(cont...) |
|--------------------------------------|-------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----------|--------------------|
|                                      | 0           | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |   |           |                    |
|                                      | 7           | 6 | 7 | 7 | 7 | 7 | 6 | 7 | 7 | 7 | 7 | 6 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 |   |           |                    |
|                                      | 2           | 8 | 2 | 3 | 3 | 2 | 2 | 2 | 3 | 3 | 2 | 0 | 3 | 3 | 2 | 3 | 2 | 2 | 2 | 3 | 3 | 3 | 2 | 2 | 3 |   |   |           |                    |
|                                      | 9           | 7 | 9 | 0 | 1 | 9 | 3 | 9 | 0 | 1 | 9 | 7 | 1 | 0 | 9 | 0 | 9 | 9 | 9 | 0 | 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 |   |   |           |                    |
|                                      | 6           | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |   |   |           |                    |
|                                      | 0           | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 |   |   |           |                    |
|                                      | 1           | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 |   |   |           |                    |
| Kidney<br>Renal Tubule, Adenoma      |             | + | + | + | + | + | + | + | X | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |   |   |           |                    |
| Ureter                               |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |           |                    |
| Urinary Bladder                      |             | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | M | + | + |   |           |                    |
| <b>SYSTEMIC LESIONS</b>              |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |           |                    |
| Multiple Organ<br>Lymphoma Malignant |             | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | X | + | + |   |           |                    |

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

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

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

P04: NEOPLASMS BY INDIVIDUAL ANIMAL  
 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<br>100 mg/m3 | DAY ON TEST | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | * TOTALS |
|-------------------------------|-------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----------|
|                               | ANIMAL ID   | 7 | 7 | 5 | 6 | 7 | 3 | 7 | 7 | 6 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 5 | 7 | 7 | 7 | 7 |   |          |
|                               |             | 3 | 0 | 7 | 6 | 3 | 4 | 2 | 3 | 6 | 3 | 3 | 3 | 3 | 2 | 3 | 2 | 2 | 2 | 3 | 0 | 0 | 9 | 3 | 3 | 1 |   |          |
|                               |             | 0 | 6 | 2 | 2 | 0 | 4 | 9 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 9 | 1 | 9 | 9 | 0 | 9 | 9 | 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 |   |          |
|                               |             | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |   |          |
|                               |             | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 |   |          |
|                               |             | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 |   |          |

**ALIMENTARY SYSTEM**

|                                    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |    |   |
|------------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|---|
| Esophagus                          | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |   |
| Squamous Cell Papilloma            |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |    | 1 |
| Gallbladder                        | + | + | + | + | + | + | + | + | + | + | + | + | + | + | M | M | M | + | + | + | + | + | + | + | + | 44 |   |
| Intestine Large, Cecum             | + | + | + | + | + | A | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 49 |   |
| Intestine Large, Colon             | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |   |
| Intestine Large, Rectum            | + | + | + | + | + | A | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 49 |   |
| Intestine Small, Duodenum          | + | + | + | + | + | A | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 47 |   |
| Adenoma                            |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 1  |   |
| Intestine Small, Ileum             | + | + | + | + | + | A | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 48 |   |
| Intestine Small, Jejunum           | + | + | + | + | + | A | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 48 |   |
| Liver                              | + | + | + | + | + | + | + | + | I | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 49 |   |
| Hepatocellular Adenoma             | X |   |   |   |   | X |   | X |   | X | X |   |   |   | X |   | X | X |   |   |   |   |   |   |   | 14 |   |
| Hepatocellular Adenoma, Multiple   |   |   |   | X | X | X |   |   |   |   |   | X |   | X |   |   |   |   |   | X | X |   | X |   |   | 16 |   |
| Hepatocellular Carcinoma           | X | X | X |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | X |   |   | X |   | X |   | 13 |   |
| Hepatocellular Carcinoma, Multiple |   |   |   |   | X |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 2  |   |
| Mesentery                          |   |   |   |   | + | + |   |   |   |   | + |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 4  |   |
| Pancreas                           | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |   |

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

M .. Missing tissue  
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Experiment Number: 20515 - 04

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P04: NEOPLASMS BY INDIVIDUAL ANIMAL

Metal working fluids (CIMSTAR 3800)

CAS Number: CIMSTAR3800

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

Lab: BNW

| B6C3F1 MICE MALE<br>100 mg/m3 | DAY ON TEST | ANIMAL ID |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | * TOTALS |    |
|-------------------------------|-------------|-----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------|----|
|                               |             | 00730     | 00730 | 00730 | 00730 | 00730 | 00730 | 00730 | 00730 | 00730 | 00730 | 00730 | 00730 | 00730 | 00730 | 00730 | 00730 | 00730 | 00730 | 00730 | 00730 |          |    |
| Salivary Glands               |             | +         | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +        | 50 |
| Stomach, Forestomach          |             | +         | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +        | 50 |
| Stomach, Glandular            |             | +         | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +        | 50 |
| Tooth                         |             | +         | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +        | 50 |
| <b>CARDIOVASCULAR SYSTEM</b>  |             |           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |    |
| Blood Vessel                  |             | +         | +     | +     | I     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | M     | +     | +     | +     | +        | 48 |
| Heart                         |             | +         | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +        | 50 |
| <b>ENDOCRINE SYSTEM</b>       |             |           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |    |
| Adrenal Cortex                |             | +         | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +        | 50 |
| Adenoma                       |             |           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | X     |       |       |       |          | 4  |
| Subcapsular, Adenoma          |             |           |       |       |       |       |       | 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     | +     | +     | M        | 21 |
| Pituitary Gland               |             | +         | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +        | 48 |
| Thyroid Gland                 |             | +         | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +        | 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

P04: NEOPLASMS BY INDIVIDUAL ANIMAL  
 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 | 0730  | 0706  | 0572  | 0662  | 0734  | 0774  | 0771  | 0661  | 0770  | 0770  | 0771  | 0773  | 0773  | 0723  | 0731  | 0779  | 0779  | 0770  | 0773  | 0720  | 0790  | 0579  | 0731  | 0773  | <b>* TOTALS</b> |
|                         | ANIMAL ID   | 00626 | 00662 | 00662 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 | 00666 |                 |

**GENERAL BODY SYSTEM**

|   |   |
|---|---|
| Tissue NOS  | 1 |
| Mediastinum, Alveolar/Bronchiolar Carcinoma, Metastatic, Lung | 1 |

**GENITAL SYSTEM**

|                 |   |    |
|-----------------|---|----|
| Epididymis      | + | 50 |
| Penis           | +   | 1  |
| Preputial Gland | + | 49 |
| Prostate        | + | 50 |
| Seminal Vesicle | + | 50 |
| Testes          | + | 50 |

**HEMATOPOIETIC SYSTEM**

|   |   |    |
|---|---|----|
| Bone Marrow                                 | +   | 50 |
| Mast Cell Tumor Malignant, Metastatic, Skin |   | 1  |
| Lymph Node                                  |   | 1  |
| Lymph Node, Bronchial                       | M M + M + + M M + M M M + M + M + + M M + M M M M | 18 |
| Lymph Node, Mandibular                      | M + M + M + + M M M + + + M M + + + + + + + M + + | 33 |

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

| B6C3F1 MICE MALE<br>100 mg/m3  | DAY ON TEST |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | * TOTALS |      |   |    |    |    |
|--|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------|------|---|----|----|----|
|  | 0730        | 0730  | 0730  | 0730  | 0730  | 0730  | 0730  | 0730  | 0730  | 0730  | 0730  | 0730  | 0730  | 0730  | 0730  | 0730  | 0730  | 0730  | 0730  | 0730  |          | 0730 |   |    |    |    |
|  | ANIMAL ID   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |      |   |    |    |    |
|  | 00626       | 00626 | 00626 | 00626 | 00626 | 00626 | 00626 | 00626 | 00626 | 00626 | 00626 | 00626 | 00626 | 00626 | 00626 | 00626 | 00626 | 00626 | 00626 | 00626 | 00626    |      |   |    |    |    |
| Lymph Node, Mediastinal<br>Alveolar/Bronchiolar Carcinoma, Metastatic,<br>Lung<br>Lymphoma Malignant                 | +           | +     | +     | M     | +     | M     | +     | +     | +     | +     | M     | +     | +     | M     | +     | +     | +     | M     | +     | +     | +        | M    | M | 35 |    |    |
|  |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |      |   | 1  |    |    |
|  |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |      |   | 1  |    |    |
| Lymph Node, Mesenteric   | +           | +     | +     | +     | +     | M     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +        | +    | + | 49 |    |    |
| Spleen<br>Lymphoma Malignant   | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +        | A    | + | +  | 49 |    |
|  |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |      |   | 1  |    |    |
| Thymus   | +           | M     | +     | +     | +     | +     | +     | M     | +     | +     | +     | +     | +     | +     | +     | +     | 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        | M    | M | M  | 0  |    |
| Skin<br>Melanoma Benign<br>Subcutaneous Tissue, Hemangiosarcoma<br>Subcutaneous Tissue, Mast Cell Tumor<br>Malignant | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +        | +    | + | +  | 50 |    |
|  |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |      |   |    | 1  |    |
|  |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |      |   |    | 1  |    |
|  |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |      |   |    | 1  |    |
| <b>MUSCULOSKELETAL SYSTEM</b>  |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |      |   |    |    |    |
| Bone   | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +        | +    | + | +  | 50 |    |
| Skeletal Muscle  |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |      | + |    | 3  |    |
| <b>NERVOUS SYSTEM</b>  |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |      |   |    |    |    |
| Brain  | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +        | +    | + | +  | 50 |    |

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

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

**P04: NEOPLASMS BY INDIVIDUAL ANIMAL**  
 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>DAY ON TEST</b> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0               | 0 |
|-------------------------|--------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----------------|---|
|                         |                    | 7 | 7 | 5 | 6 | 7 | 3 | 7 | 7 | 6 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 5               | 7 |
| <b>100 mg/m3</b>        | <b>ANIMAL ID</b>   | 3 | 0 | 7 | 6 | 3 | 4 | 2 | 3 | 6 | 3 | 3 | 3 | 3 | 2 | 3 | 2 | 2 | 2 | 2 | 0 | 0               | 0 |
|                         |                    | 0 | 6 | 2 | 2 | 0 | 4 | 9 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 9 | 9 | 9 | 0 | 9 | 9 | 0               | 1 |
|                         |                    | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0               | 0 |
|                         |                    | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6               | 6 |
|                         |                    | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4               | 5 |
|                         |                    | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6               | 0 |
|                         |                    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | <b>* TOTALS</b> |   |

|                  |   |          |
|------------------|---|----------|
| Peripheral Nerve | + | <b>2</b> |
| Spinal Cord      | + | <b>2</b> |

**RESPIRATORY SYSTEM**

|   |   |           |
|---|---|-----------|
| Larynx  | + | <b>50</b> |
| Lung  | + | <b>50</b> |
| Alveolar/Bronchiolar Adenoma                                  | X | <b>9</b>  |
| Alveolar/Bronchiolar Carcinoma                                | X | <b>5</b>  |
| Alveolar/Bronchiolar Carcinoma, Multiple                      | X | <b>5</b>  |
| Hepatocellular Carcinoma, Metastatic, Liver                   | X | <b>3</b>  |
| Mast Cell Tumor Malignant, Metastatic, Uncertain Primary Site | X | <b>1</b>  |
| Nose  | + | <b>50</b> |
| Trachea   | + | <b>50</b> |

**SPECIAL SENSES SYSTEM**

|                    |   |           |
|--------------------|---|-----------|
| Eye                | + | <b>50</b> |
| Harderian Gland    | + | <b>50</b> |
| Adenoma            | + | <b>2</b>  |
| Carcinoma          | + | <b>1</b>  |
| Bilateral, Adenoma | + | <b>1</b>  |

**URINARY 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

P04: NEOPLASMS BY INDIVIDUAL ANIMAL  
 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<br>100 mg/m3        | DAY ON TEST | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0       | * TOTALS |
|--------------------------------------|-------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---------|----------|
|                                      | ANIMAL ID   | 7 | 7 | 5 | 6 | 7 | 3 | 7 | 7 | 6 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 5 | 7 | 7       |          |
|                                      |             | 3 | 0 | 7 | 6 | 3 | 4 | 2 | 3 | 6 | 3 | 3 | 3 | 3 | 2 | 3 | 2 | 2 | 2 | 3 | 0 | 9 | 3 | 3       |          |
|                                      |             | 0 | 6 | 2 | 2 | 0 | 4 | 9 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 9 | 1 | 9 | 9 | 0 | 9 | 9 | 0 | 1       |          |
|                                      |             | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0       |          |
|                                      |             | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6       |          |
|                                      |             | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5       |          |
|                                      |             | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 0       |          |
| Kidney<br>Renal Tubule, Adenoma      |             | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50<br>1 |          |
| Ureter                               |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | + |   | 1       |          |
| Urinary Bladder                      |             | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 49      |          |
| <b>SYSTEMIC LESIONS</b>              |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |         |          |
| Multiple Organ<br>Lymphoma Malignant |             | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50<br>1 |          |

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

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

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

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

P04: NEOPLASMS BY INDIVIDUAL ANIMAL  
 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 | 0732 | 0731 | 0733 | 0733 | 0732 | 0763 | 0767 | 0772 | 0775 | 0773 | 0765 | 0754 | 0773 | 0772 | 0763 | 0771 | 0777 | 0773 | 0773 | 0773 | 0752 | 0773 | <b>females<br/>(cont...)</b> |
|                           | ANIMAL ID   | 0010 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 |                              |

**ALIMENTARY SYSTEM**

|  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Esophagus                                      | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Gallbladder                                    | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | M | + | + | M | + | + | + |
| Intestine Large, Cecum                         | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Large, Colon                         | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | A | + | + | + | + | + | + |
| Intestine Large, Rectum                        | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Small, Duodenum<br>Adenoma           | + | + | + | + | + | + | + | + | + | + | + | + | A | + | + | + | + | A | + | + | + | + | + |
| Intestine Small, Ileum                         | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | A | + | + | + | + | + |
| Intestine Small, Jejunum<br>Lymphoma Malignant | + | + | + | + | + | + | + | + | + | + | + | X | + | + | + | + | + | A | + | + | + | + | + |
| Liver  | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Hepatoblastoma                                 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Hepatocellular Adenoma                         |   |   |   |   |   |   |   |   |   |   |   |   | X | X |   |   |   | X |   |   |   |   | X |
| Hepatocellular Adenoma, Multiple               |   |   |   |   | X |   |   |   |   |   |   |   |   | X |   |   |   | X | X |   |   |   |   |
| Hepatocellular Carcinoma                       |   |   |   |   | X |   |   |   |   |   |   |   | X |   |   |   | X |   | X |   |   |   | X |
| Histiocytic Sarcoma                            |   |   |   |   | X |   | X |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Lymphoma Malignant                             |   |   | X |   |   |   |   |   |   |   |   | X | X |   |   |   |   |   |   |   | X | X |   |
| Mesentery                                      |   |   |   |   |   | + |   |   |   |   |   |   |   |   | + | + |   |   |   |   | + | + | + |
| 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

**P04: NEOPLASMS BY INDIVIDUAL ANIMAL**  
 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 | 0732 | 0731 | 0773 | 0773 | 0777 | 0776 | 0766 | 0773 | 0734 | 0735 | 0700 | 0700 | 0705 | 0707 | 0707 | 0706 | 0711 | 0717 | 0717 | 0713 | 0713 | 0713 | 0713 | 0715 | 0717 | 0723 | 0723 | 0723 | 0727 | 0727 | 0732 | 0732 | females<br>(cont...) |
|---|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----------------------|
|   | ANIMAL ID   | 0010 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 |                      |
| Pancreas Lymphoma Malignant                   |             | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | X                    |
| Salivary Glands                               |             | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +                    |
| Stomach, Forestomach                          |             | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +                    |
| Stomach, Glandular                            |             | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +                    |
| Tooth   |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                      |
| <b>CARDIOVASCULAR SYSTEM</b>                  |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                      |
| Blood Vessel                                  |             | M    | M    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | M                    |
| Heart Lymphoma Malignant                      |             | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | X                    |
| <b>ENDOCRINE SYSTEM</b>                       |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                      |
| Adrenal Cortex                                |             | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | M    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +                    |
| Adrenal Medulla Pheochromocytoma Benign       |             | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | M    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | X                    |
| Islets, Pancreatic Adenoma Lymphoma Malignant |             | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +                    |
| Parathyroid Gland                             |             | +    | +    | +    | +    | +    | +    | +    | M    | +    | M    | +    | +    | M    | M    | +    | M    | M    | M    | M    | 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

P04: NEOPLASMS BY INDIVIDUAL ANIMAL  
 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           |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       | females<br>(cont...) |   |  |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|----------------------|---|--|
|   | 0<br>7<br>3<br>2      | 0<br>7<br>3<br>1      | 0<br>7<br>3<br>3      | 0<br>7<br>3<br>3      | 0<br>7<br>3<br>2      | 0<br>7<br>3<br>2      | 0<br>6<br>1<br>3      | 0<br>6<br>7<br>7      | 0<br>6<br>3<br>2      | 0<br>7<br>4<br>5      | 0<br>7<br>3<br>3      | 0<br>7<br>0<br>5      | 0<br>6<br>0<br>5      | 0<br>5<br>4<br>9      | 0<br>7<br>3<br>3      | 0<br>7<br>8<br>2      | 0<br>6<br>3<br>3      | 0<br>7<br>9<br>4      | 0<br>7<br>3<br>2      | 0<br>7<br>3<br>2      | 0<br>7<br>3<br>3      | 0<br>5<br>2<br>7      | 0<br>7<br>3<br>2      |                       |                       |                      |   |  |
|   | ANIMAL ID             |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                      |   |  |
|   | 0<br>0<br>1<br>0<br>1 | 0<br>0<br>1<br>0<br>2 | 0<br>0<br>1<br>0<br>3 | 0<br>0<br>1<br>0<br>4 | 0<br>0<br>1<br>0<br>5 | 0<br>0<br>1<br>0<br>6 | 0<br>0<br>1<br>0<br>7 | 0<br>0<br>1<br>0<br>8 | 0<br>0<br>1<br>0<br>9 | 0<br>0<br>1<br>0<br>0 | 0<br>0<br>1<br>1<br>1 | 0<br>0<br>1<br>1<br>2 | 0<br>0<br>1<br>1<br>3 | 0<br>0<br>1<br>1<br>4 | 0<br>0<br>1<br>1<br>5 | 0<br>0<br>1<br>1<br>6 | 0<br>0<br>1<br>1<br>7 | 0<br>0<br>1<br>1<br>8 | 0<br>0<br>1<br>1<br>9 | 0<br>0<br>1<br>2<br>0 | 0<br>0<br>1<br>2<br>1 | 0<br>0<br>1<br>2<br>2 | 0<br>0<br>1<br>2<br>3 | 0<br>0<br>1<br>2<br>4 | 0<br>0<br>1<br>2<br>5 |                      |   |  |
| Pituitary Gland<br>Pars Distalis, Adenoma | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     |                      |   |  |
| Thyroid Gland                             | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                    |   |  |
| <b>GENERAL BODY SYSTEM</b>                |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                      |   |  |
| Tissue NOS                                | +                     |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       | +                    |   |  |
| <b>GENITAL SYSTEM</b>                     |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                      |   |  |
| Clitoral Gland                            | +                     | +                     | +                     | +                     | M                     | +                     | +                     | +                     | +                     | +                     | +                     | M                     | +                     | +                     | +                     | +                     | M                     | +                     | M                     | +                     | +                     | +                     | +                     | +                     | +                     | +                    |   |  |
| Ovary                                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                    | + |  |
| Cystadenoma                               |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       | X                     |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                      |   |  |
| Granulosa Cell Tumor Benign               |                       |                       |                       |                       | X                     |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                      |   |  |
| Histiocytic Sarcoma                       |                       |                       |                       |                       |                       |                       |                       |                       | X                     |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                      |   |  |
| Luteoma                                   |                       |                       | X                     |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                      |   |  |
| Lymphoma Malignant                        | X                     |                       |                       |                       | X                     |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                      |   |  |
| Uterus                                    | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                    | + |  |
| Hemangiosarcoma                           |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                      |   |  |
| Histiocytic Sarcoma                       |                       |                       |                       |                       |                       |                       |                       |                       |                       | X                     |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                      |   |  |
| Leiomyoma                                 |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                      |   |  |
| <b>HEMATOPOIETIC SYSTEM</b>               |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                      |   |  |
| Bone Marrow                               | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                     | +                    | + |  |
| Histiocytic Sarcoma                       |                       |                       |                       |                       |                       |                       |                       |                       |                       | X                     |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                      |   |  |
| Sarcoma                                   |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                      |   |  |

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

M .. Missing tissue  
 A .. Autolysis precludes evaluation  
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Experiment Number: 20515 - 04  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: MICE/B6C3F1

P04: NEOPLASMS BY INDIVIDUAL ANIMAL  
 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 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | females<br>(cont...) |
|---|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----------------------|
|   | 0732        | 0731 | 0773 | 0773 | 0773 | 0773 | 0773 | 0773 | 0773 | 0773 | 0773 | 0773 | 0773 | 0773 | 0773 | 0773 | 0773 | 0773 | 0773 | 0773 | 0773 | 0773 | 0773 | 0773 |      |                      |
| ANIMAL ID                                       | 0010        | 0011 | 0012 | 0013 | 0014 | 0015 | 0016 | 0017 | 0018 | 0019 | 0020 | 0021 | 0022 | 0023 | 0024 | 0025 | 0026 | 0027 | 0028 | 0029 | 0030 | 0031 | 0032 | 0033 | 0034 | 0035                 |
| Lymph Node<br>Deep Cervical, Lymphoma Malignant | X           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                      |
| Lymph Node, Bronchial<br>Lymphoma Malignant     | M           | +    | +    | +    | M    | M    | M    | M    | +    | M    | M    | +    | +    | +    | M    | +    | +    | +    | +    | M    | +    | M    | +    | M    |      |                      |
| Lymph Node, Mandibular<br>Histiocytic Sarcoma   | +           | +    | +    | +    | +    | +    | +    | M    | +    | M    | +    | +    | +    | M    | M    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +                    |
| Lymph Node, Mediastinal<br>Lymphoma Malignant   | X           | M    | +    | +    | +    | +    | +    | +    | +    | M    | +    | +    | M    | M    | +    | +    | M    | +    | M    | +    | +    | +    | +    | +    | +    | +                    |
| Lymph Node, Mesenteric<br>Histiocytic Sarcoma   | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +                    |
| Spleen<br>Hemangiosarcoma                       | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +                    |
| Spleen<br>Histiocytic Sarcoma                   |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                      |
| Spleen<br>Lymphoma Malignant                    | X           |      | X    | X    |      |      |      | X    |      |      |      | X    | X    |      |      |      |      |      |      |      | X    | X    | X    |      |      |                      |
| Thymus<br>Lymphoma Malignant                    | +           | +    | +    | +    | +    | +    | M    | +    | +    | +    | +    | +    | +    | M    | +    | +    | +    | M    | +    | M    | +    | +    | +    | +    | +    | +                    |
|   | X           |      | X    | X    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | X    | X    | X    |      |      |      |                      |

**INTEGUMENTARY SYSTEM**

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

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

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

**P04: NEOPLASMS BY INDIVIDUAL ANIMAL**  
 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 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | females<br>(cont...) |
|---|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----------------------|
|   | 0732        | 0731 | 0773 | 0773 | 0773 | 0773 | 0666 | 0666 | 0773 | 0734 | 0773 | 0773 | 0666 | 0555 | 0773 | 0773 | 0666 | 0773 | 0117 | 0773 | 0773 | 0773 | 0557 | 0773 |      |                      |
| ANIMAL ID   | 0010        | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 |                      |
| Mammary Gland<br>Carcinoma  | +           | +    | +    | X    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    |      |                      |
| Skin<br>Hemangiosarcoma<br>Lip, Squamous Cell Papilloma<br>Subcutaneous Tissue, Hemangiosarcoma                       | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    |      |                      |
| <b>MUSCULOSKELETAL SYSTEM</b>   |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                      |
| Bone<br>Femur, Sarcoma  | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    |      |                      |
| Skeletal Muscle   |             |      |      |      |      |      |      |      |      |      |      |      |      | +    | +    |      |      |      |      |      |      |      |      | +    |      |                      |
| <b>NERVOUS SYSTEM</b>   |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                      |
| Brain   | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    |      |                      |
| Peripheral Nerve  |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                      |
| Spinal Cord   |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                      |
| <b>RESPIRATORY SYSTEM</b>   |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                      |
| Larynx  | +           | I    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    |      |                      |
| Lung<br>Alveolar/Bronchiolar Adenoma<br>Alveolar/Bronchiolar Carcinoma<br>Hepatocellular Carcinoma, Metastatic, Liver | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    |      |                      |

\* .. Total animals with tissue examined microscopically; Total animals 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

P04: NEOPLASMS BY INDIVIDUAL ANIMAL  
 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...) |
|------------------------------|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----------|----------------------|
|                              | 0732        | 0731 | 0733 | 0733 | 0732 | 0732 | 0663 | 0667 | 0672 | 0673 | 0673 | 0665 | 0574 | 0577 | 0569 | 0576 | 0576 | 0571 | 0577 | 0573 | 0573 | 0573 | 0572 | 0573 | 0573 |           |                      |
| Control                      | 0010        | 0011 | 0010 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011 | 0011      |                      |
| Histiocytic Sarcoma          |             |      |      |      |      |      |      |      | X    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |           |                      |
| Lymphoma Malignant           |             |      |      | X    |      |      |      |      |      |      |      | X    | X    |      |      |      |      |      |      |      | X    | X    |      |      |      |           |                      |
| Nose                         | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +         |                      |
| Trachea                      | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +         |                      |
| <b>SPECIAL SENSES SYSTEM</b> |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |           |                      |
| Eye                          | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +         |                      |
| Harderian Gland Adenoma      | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +         |                      |
| <b>URINARY SYSTEM</b>        |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |           |                      |
| Kidney                       | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +         |                      |
| Histiocytic Sarcoma          |             |      |      |      |      |      |      |      | X    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |           |                      |
| Lymphoma Malignant           | X           |      |      |      |      |      |      |      |      |      |      | X    |      |      |      |      |      |      |      |      |      |      |      |      |      |           |                      |
| Urinary Bladder              | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +         |                      |
| Lymphoma Malignant           |             |      | X    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |           |                      |
| <b>SYSTEMIC LESIONS</b>      |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |           |                      |
| Multiple Organ               | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +         |                      |
| Histiocytic Sarcoma          |             |      |      | X    |      |      | X    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |           |                      |
| Lymphoma Malignant           | 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

P04: NEOPLASMS BY INDIVIDUAL ANIMAL

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 |
|--------------------|-------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-----|----------|
|                    | 07<br>31    | 06<br>86 | 07<br>33 | 07<br>31 | 07<br>32 | 07<br>32 | 07<br>33 | 07<br>32 | 07<br>22 | 07<br>31 | 07<br>33 | 07<br>32 | 07<br>32 | 07<br>32 | 07<br>32 | 07<br>31 | 07<br>31 | 07<br>32 | 07<br>32 | 07<br>33 | 07<br>33 | 07<br>31 | 07<br>31 | 07<br>32 |     |          |
| Control            | ANIMAL ID   |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |     |          |
|                    | 001         | 001      | 001      | 001      | 001      | 001      | 001      | 001      | 001      | 001      | 001      | 001      | 001      | 001      | 001      | 001      | 001      | 001      | 001      | 001      | 001      | 001      | 001      | 001      | 001 |          |
|                    | 111         | 111      | 111      | 111      | 111      | 111      | 111      | 111      | 111      | 111      | 111      | 111      | 111      | 111      | 111      | 111      | 111      | 111      | 111      | 111      | 111      | 111      | 111      | 111      | 111 |          |
|                    | 222         | 222      | 222      | 222      | 233      | 233      | 233      | 233      | 233      | 233      | 233      | 233      | 233      | 233      | 233      | 244      | 244      | 244      | 244      | 244      | 244      | 244      | 244      | 244      | 245 |          |
|                    | 667         | 667      | 668      | 669      | 660      | 661      | 662      | 663      | 664      | 665      | 666      | 667      | 668      | 669      | 660      | 661      | 662      | 663      | 664      | 665      | 666      | 667      | 668      | 669      | 660 |          |

ALIMENTARY SYSTEM

|  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |         |
|--|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---------|
| Esophagus                                      | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50      |
| Gallbladder                                    | + | + | + | + | M | + | + | + | + | + | + | + | + | + | + | + | + | + | + | M | + | + | + | 46      |
| Intestine Large, Cecum                         | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50      |
| Intestine Large, Colon                         | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 49      |
| Intestine Large, Rectum                        | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50      |
| Intestine Small, Duodenum<br>Adenoma           | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | A | 47<br>1 |
| Intestine Small, Ileum                         | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 49      |
| Intestine Small, Jejunum<br>Lymphoma Malignant | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | A | 48<br>1 |
| Liver  | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50      |
| Hepatoblastoma                                 |   |   |   | X |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 1       |
| Hepatocellular Adenoma                         |   |   |   | X |   |   |   |   |   | X |   |   |   | X | X |   |   |   |   | X | X |   |   | 10      |
| Hepatocellular Adenoma, Multiple               |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 4       |
| Hepatocellular Carcinoma                       |   |   |   | X | X |   |   |   |   |   | X | X |   |   |   | X |   |   |   |   |   |   |   | 10      |
| Histiocytic Sarcoma                            |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 2       |
| Lymphoma Malignant                             | X |   |   |   |   |   |   |   | X |   |   |   | X |   |   |   | X |   |   |   |   |   |   | 9       |
| Mesentery                                      |   |   |   | + | + |   |   | + | + | + |   |   |   | + | + | + | + |   |   |   |   | + |   | 16      |
| 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

P04: NEOPLASMS BY INDIVIDUAL ANIMAL  
 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 |       |
|-----------------------------------|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------|-------|
|                                   | 0731        | 0686  | 0733  | 0733  | 0733  | 0733  | 0733  | 0733  | 0733  | 0733  | 0733  | 0733  | 0733  | 0733  | 0733  | 0733  | 0733  | 0733  | 0733  | 0733  | 0733  | 0733  | 0733  | 0733  |          |       |
| Control                           | ANIMAL ID   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | * TOTALS |       |
|                                   | 00126       | 00127 | 00128 | 00129 | 00130 | 00131 | 00132 | 00133 | 00134 | 00135 | 00136 | 00137 | 00138 | 00139 | 00140 | 00141 | 00142 | 00143 | 00144 | 00145 | 00146 | 00147 | 00148 | 00149 |          | 00150 |
| Lymph Node                        |             |       |       | +     |       |       |       | +     |       |       |       |       | +     |       |       |       |       |       |       |       |       |       |       |       | 11       |       |
| Deep Cervical, Lymphoma Malignant |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 1        |       |
| Lumbar, Lymphoma Malignant        |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       | X     |       |       |       |       |       |       | X     |       | 5        |       |
| Pancreatic, Lymphoma Malignant    |             |       |       |       |       |       | X     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 3        |       |
| Renal, Lymphoma Malignant         |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | X     |       | 4        |       |
| Lymph Node, Bronchial             | +           | +     | M     | +     | M     | +     | +     | M     | +     | +     | +     | M     | M     | M     | M     | M     | +     | M     | M     | +     | M     | M     | +     | +     | 26       |       |
| Lymphoma Malignant                |             |       |       | X     |       |       |       |       |       |       | X     |       |       |       |       |       |       |       |       |       |       |       |       |       | 5        |       |
| Lymph Node, Mandibular            | +           | +     | +     | +     | M     | +     | +     | M     | M     | M     | +     | +     | +     | +     | +     | +     | +     | M     | +     | +     | +     | +     | +     | +     | 41       |       |
| Histiocytic Sarcoma               |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 1        |       |
| Lymphoma Malignant                |             |       |       |       | X     |       |       |       |       |       |       |       |       |       | X     |       |       |       | X     | X     |       |       |       |       | 8        |       |
| Lymph Node, Mediastinal           | M           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | 43       |       |
| Lymphoma Malignant                |             |       |       | X     |       |       | X     |       |       | X     |       | X     |       |       | X     |       |       |       | X     | X     |       |       |       |       | 12       |       |
| Lymph Node, Mesenteric            | +           | +     | +     | +     | +     | M     | +     | +     | +     | +     | M     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | 48       |       |
| Histiocytic Sarcoma               |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 1        |       |
| Lymphoma Malignant                |             |       |       |       | X     |       |       |       |       | X     |       | X     |       |       |       |       | X     |       | X     |       |       |       |       | 9     |          |       |
| Spleen                            | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | 50       |       |
| Hemangiosarcoma                   |             |       |       |       |       |       |       |       |       | X     |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 1        |       |
| Histiocytic Sarcoma               |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 1        |       |
| Lymphoma Malignant                | X           |       |       | X     |       |       | X     |       | X     | X     |       | X     |       |       | X     |       | X     |       | X     | X     |       |       |       | 18    |          |       |
| Thymus                            | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | 44       |       |
| Lymphoma Malignant                | X           |       |       | X     |       |       | X     |       | X     |       | X     |       |       |       |       |       |       |       | X     | X     |       |       |       | M     | +        | 12    |

**INTEGUMENTARY SYSTEM**

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

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



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

P04: NEOPLASMS BY INDIVIDUAL ANIMAL  
 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 |       |  |
|------------------------------|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------|-------|--|
|                              | 0731        | 0686  | 0733  | 0733  | 0733  | 0733  | 0733  | 0733  | 0733  | 0733  | 0733  | 0733  | 0733  | 0733  | 0733  | 0733  | 0733  | 0733  | 0733  | 0733  | 0733  | 0733  | 0733  | 0733  |          |       |  |
| Control                      | ANIMAL ID   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | * TOTALS |       |  |
|                              | 00126       | 00127 | 00128 | 00129 | 00130 | 00131 | 00132 | 00133 | 00134 | 00135 | 00136 | 00137 | 00138 | 00139 | 00140 | 00141 | 00142 | 00143 | 00144 | 00145 | 00146 | 00147 | 00148 | 00149 |          | 00150 |  |
| Histiocytic Sarcoma          |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 1        |       |  |
| Lymphoma Malignant           |             |       |       |       |       |       |       |       |       |       |       | X     |       |       |       |       |       |       |       |       |       |       |       |       |          | 7     |  |
| Nose                         | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | 50       |       |  |
| Trachea                      | +           | M     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | 49       |       |  |
| <b>SPECIAL SENSES SYSTEM</b> |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |  |
| Eye                          | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | 50       |       |  |
| Harderian Gland Adenoma      | +           | +     | +     | +     | +     | +     | +     | +     | +     | X     | X     |       |       |       |       |       |       |       |       |       |       |       |       |       | 2        |       |  |
| <b>URINARY SYSTEM</b>        |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |  |
| Kidney                       | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | 50       |       |  |
| Histiocytic Sarcoma          |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 1        |       |  |
| Lymphoma Malignant           |             |       |       |       |       |       | X     |       |       | X     |       |       |       |       |       | X     |       |       | X     |       |       |       |       |       | 6        |       |  |
| Urinary Bladder              | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | 50       |       |  |
| Lymphoma Malignant           |             |       |       |       |       |       |       |       |       | X     |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 2        |       |  |
| <b>SYSTEMIC LESIONS</b>      |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |  |
| Multiple Organ               | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | 50       |       |  |
| Histiocytic Sarcoma          |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 2        |       |  |
| Lymphoma Malignant           | 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

**P04: NEOPLASMS BY INDIVIDUAL ANIMAL**

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 |       |       |       |       |
|--------------------|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------|-------|-------|-------|-------|
|                    | 0733        | 0583  | 0732  | 0655  | 0730  | 0759  | 0573  | 0753  | 0578  | 0733  | 0634  | 0733  | 0773  | 0773  | 0771  | 0773  | 0693  | 0753  | 0733  | 0733  |          | 0732  | 0773  |       |       |
| 10 mg/m3           | 00326       | 00327 | 00328 | 00329 | 00330 | 00331 | 00332 | 00333 | 00334 | 00335 | 00336 | 00337 | 00338 | 00339 | 00340 | 00341 | 00342 | 00343 | 00344 | 00345 | 00346    | 00347 | 00348 | 00349 | 00350 |

**ALIMENTARY SYSTEM**

|                                     |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |         |
|-------------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---------|
| Esophagus                           | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50      |
| Gallbladder                         | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 49      |
| Intestine Large, Cecum              | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50      |
| Intestine Large, Colon              | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50      |
| Intestine Large, Rectum             | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50      |
| Intestine Small, Duodenum           | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50      |
| Intestine Small, Ileum<br>Carcinoma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50<br>1 |
| Intestine Small, Jejunum            | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50      |
| Liver                               | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50      |
| Hepatocellular Adenoma              |   | X | X |   | X |   |   |   |   | X |   |   |   |   |   |   |   |   |   | X |   |   | X | X | 11      |
| Hepatocellular Adenoma, Multiple    |   |   |   |   |   | X |   |   |   |   | X |   |   |   |   |   |   |   |   |   |   |   |   |   | 3       |
| Hepatocellular Carcinoma            |   | X | X |   |   |   |   |   |   | X |   |   |   |   |   |   | X |   |   |   |   |   | X |   | 8       |
| Hepatocellular Carcinoma, Multiple  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 1       |
| Histiocytic Sarcoma                 |   |   |   |   |   |   |   |   | X |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 1       |
| Lymphoma Malignant                  |   |   | X | X |   |   |   |   |   |   |   |   | X |   |   | X |   |   |   |   |   |   |   |   | 6       |
| Mesentery                           |   | + | + | + |   | + | + |   | + | + | + | + |   |   |   |   |   | + | + |   |   | + |   |   | 23      |
| Hemangioma                          |   |   |   |   |   |   | X |   |   |   |   | X |   |   |   |   |   |   |   |   |   |   |   |   | 2       |
| Lymphoma Malignant                  |   |   | 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

P04: NEOPLASMS BY INDIVIDUAL ANIMAL  
 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 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | * TOTALS |      |
|--------------------------------|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------|------|
|                                | 0733        | 0583  | 0732  | 0655  | 0732  | 0751  | 0578  | 0733  | 0508  | 0733  | 0634  | 0733  | 0773  | 0773  | 0771  | 0672  | 0753  | 0773  | 0773  | 0773  |          | 0772 |
| ANIMAL ID                      | 00326       | 00337 | 00328 | 00309 | 00301 | 00302 | 00303 | 00304 | 00305 | 00306 | 00307 | 00308 | 00309 | 00310 | 00311 | 00312 | 00313 | 00314 | 00315 | 00316 | 00317    |      |
| Pancreas                       | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +        | 50   |
| Lymphoma Malignant             |             |       | X     |       | X     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          | 4    |
| Salivary Glands                | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +        | 50   |
| Stomach, Forestomach           | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +        | 50   |
| Stomach, Glandular             | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +        | 50   |
| <b>CARDIOVASCULAR SYSTEM</b>   |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |      |
| Blood Vessel                   | +           | +     | +     | +     | M     | +     | +     | +     | +     | I     | +     | +     | +     | M     | I     | +     | +     | +     | M     | +     | +        | 44   |
| Heart                          | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +        | 50   |
| Histiocytic Sarcoma            |             |       |       |       |       |       |       |       |       | X     |       |       |       |       |       |       |       |       |       |       |          | 1    |
| <b>ENDOCRINE SYSTEM</b>        |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |      |
| Adrenal Cortex                 | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +        | 50   |
| Lymphoma Malignant             |             |       |       | X     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          | 1    |
| Subcapsular, Adenoma           |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | X     |          | 2    |
| Adrenal Medulla                | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +        | 50   |
| Lymphoma Malignant             |             |       |       | X     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          | 1    |
| Pheochromocytoma Benign        |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          | 2    |
| Islets, Pancreatic             | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +        | 50   |
| Adenoma                        |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | X     |       |          | 1    |
| Parathyroid Gland              | M           | M     | M     | +     | +     | M     | +     | +     | M     | +     | +     | M     | +     | +     | +     | M     | +     | M     | M     | +     | M        | 29   |

\* .. Total animals with tissue examined microscopically; Total animals 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

P04: NEOPLASMS BY INDIVIDUAL ANIMAL  
 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 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | * TOTALS |       |       |         |
|---|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------|-------|-------|---------|
|   | 0733        | 0583  | 0732  | 0655  | 0730  | 0759  | 0778  | 0573  | 0753  | 0783  | 0753  | 0773  | 0773  | 0773  | 0773  | 0673  | 0753  | 0773  | 0773  | 0773  |          | 0773  | 0773  |         |
| ANIMAL ID                                 | 00326       | 00337 | 00332 | 00339 | 00330 | 00331 | 00332 | 00333 | 00333 | 00333 | 00333 | 00333 | 00333 | 00333 | 00333 | 00334 | 00334 | 00334 | 00334 | 00334 | 00334    | 00334 | 00334 |         |
| Pituitary Gland<br>Pars Distalis, Adenoma | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +        | +     | +     | 50<br>4 |
| Thyroid Gland                             | +           | M     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +        | +     | +     | 48      |
| <b>GENERAL BODY SYSTEM</b>                |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |       |         |
| Tissue NOS<br>Mediastinum, Carcinoma      |             |       |       |       |       |       |       |       |       |       |       | +     | X     |       |       |       |       |       |       |       |          |       |       | 2<br>1  |
| <b>GENITAL SYSTEM</b>                     |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |       |         |
| Clitoral Gland                            | +           | +     | +     | +     | +     | +     | M     | +     | M     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +        | +     | +     | 45      |
| Ovary<br>Cystadenoma                      | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +        | +     | +     | 50<br>1 |
| Luteoma                                   |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          | X     |       | 1       |
| Lymphoma Malignant                        |             |       |       | X     | X     | X     |       |       |       |       |       |       |       | X     |       |       |       |       |       |       |          |       |       | 8       |
| Uterus<br>Hemangiosarcoma                 | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +        | +     | +     | 50<br>1 |
| Histiocytic Sarcoma                       |             |       |       |       |       |       |       |       |       |       |       | X     |       |       |       |       |       |       |       |       |          |       |       | 1       |
| Lymphoma Malignant                        |             |       |       |       |       |       |       |       |       |       |       |       |       | X     |       |       |       |       |       |       |          |       |       | 1       |
| Polyp Stromal                             |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |       | 3       |
| <b>HEMATOPOIETIC SYSTEM</b>               |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |       |         |
| Bone Marrow                               | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +        | +     | +     | 50      |
| Lymph Node<br>Iliac, Lymphoma Malignant   |             |       |       | +     |       |       |       |       |       |       |       |       | +     |       |       |       | +     |       |       |       |          |       | +     | 12<br>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

P04: NEOPLASMS BY INDIVIDUAL ANIMAL

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 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | * TOTALS |       |       |       |       |          |  |
|--|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------|-------|-------|-------|-------|----------|--|
|  | 0733        | 0583  | 0732  | 0655  | 0730  | 0770  | 0598  | 0733  | 0588  | 0733  | 0674  | 0773  | 0773  | 0773  | 0773  | 0678  | 0753  | 0773  | 0773  | 0773  |          | 0773  | 0773  |       |       |          |  |
| ANIMAL ID                                  | 00326       | 00337 | 00338 | 00339 | 00340 | 00341 | 00342 | 00343 | 00344 | 00345 | 00346 | 00347 | 00348 | 00349 | 00350 | 00351 | 00352 | 00353 | 00354 | 00355 | 00356    | 00357 | 00358 | 00359 | 00360 |          |  |
| Lumbar, Lymphoma Malignant                 |             |       |       | X     |       |       |       |       |       |       |       | X     |       |       |       |       |       |       |       |       |          |       |       |       |       | 5        |  |
| Pancreatic, Lymphoma Malignant             |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |       |       |       | 1        |  |
| Renal, Lymphoma Malignant                  |             |       |       | X     |       |       |       |       |       |       |       | X     |       |       |       |       |       |       |       |       |          |       |       |       |       | 4        |  |
| Lymph Node, Bronchial Lymphoma Malignant   | M           | M     | +     | +     | M     | +     | +     | +     | M     | M     | +     | M     | +     | +     | +     | M     | +     | +     | M     | +     | M        | +     | +     | +     | M     | 27<br>2  |  |
| Lymph Node, Mandibular Lymphoma Malignant  | +           | +     | M     | +     | +     | +     | M     | M     | M     | M     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +        | +     | +     | +     | +     | 42<br>5  |  |
| Lymph Node, Mediastinal Lymphoma Malignant | +           | +     | +     | +     | +     | M     | +     | +     | +     | +     | M     | +     | +     | +     | M     | +     | +     | +     | +     | +     | +        | +     | +     | +     | +     | 46<br>13 |  |
| Lymph Node, Mesenteric Lymphoma Malignant  | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +        | +     | +     | +     | +     | 50<br>8  |  |
| Spleen Hemangiosarcoma                     | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +        | +     | +     | +     | +     | 50<br>1  |  |
| Histiocytic Sarcoma                        |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |       |       |       | 1        |  |
| Lymphoma Malignant                         |             |       |       | X     | X     | X     |       |       | X     |       |       |       | X     | X     |       | X     |       |       | X     |       |          |       |       | X     |       | 17       |  |
| Thymus Lymphoma Malignant                  | +           | +     | +     | +     | +     | +     | M     | +     | M     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | M        | +     | +     | +     | +     | 46<br>8  |  |
| <b>INTEGUMENTARY SYSTEM</b>                |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |       |       |       |          |  |
| Mammary Gland                              | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +        | +     | +     | +     | +     | 50       |  |
| Skin Subcutaneous Tissue, Fibrosarcoma     | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +        | +     | +     | +     | +     | 50<br>1  |  |
| Subcutaneous Tissue, Lymphoma Malignant    |             |       |       | X     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |       |       |       | 1        |  |

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

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

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

P04: NEOPLASMS BY INDIVIDUAL ANIMAL  
 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 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | * TOTALS |       |       |       |       |
|--------------------------------|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------|-------|-------|-------|-------|
|                                | 0733        | 0758  | 0773  | 0765  | 0777  | 0757  | 0777  | 0757  | 0777  | 0757  | 0777  | 0767  | 0777  | 0777  | 0777  | 0767  | 0777  | 0757  | 0777  | 0777  |          | 0777  | 0777  |       |       |
| ANIMAL ID                      | 00026       | 00007 | 00008 | 00009 | 00000 | 00001 | 00002 | 00003 | 00004 | 00005 | 00006 | 00007 | 00008 | 00009 | 00000 | 00001 | 00002 | 00003 | 00004 | 00005 | 00006    | 00007 | 00008 | 00009 | 00000 |
|                                | 0           | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0        | 0     | 0     | 0     |       |
|                                | 3           | 3     | 3     | 3     | 3     | 3     | 3     | 3     | 3     | 3     | 3     | 3     | 3     | 3     | 3     | 3     | 3     | 3     | 3     | 3     | 3        | 3     | 3     | 3     |       |

Subcutaneous Tissue, Schwannoma Malignant X 1

**MUSCULOSKELETAL SYSTEM**

Bone + 50  
 Skeletal Muscle + 3

**NERVOUS SYSTEM**

Brain + 50  
 Peripheral Nerve + 3  
 Spinal Cord + 3

**RESPIRATORY SYSTEM**

Larynx + 49  
 Lung + 50  
   Alveolar/Bronchiolar Adenoma X X 3  
   Alveolar/Bronchiolar Adenoma, Multiple X 1  
   Alveolar/Bronchiolar Carcinoma X 1  
   Hepatocellular Carcinoma, Metastatic, Liver X 4  
   Histiocytic Sarcoma X 1  
   Lymphoma Malignant X X X 8  
 Nose + + + + + + A + + + + + + + + + + + + + + + + 49  
 Trachea + + + + + + A + + + + + + + + + + + + + + + + 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

P04: NEOPLASMS BY INDIVIDUAL ANIMAL  
 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 | 0732 | 0573 | 0773 | 0773 | 0773 | 0476 | 0773 | 0773 | 0773 | 0773 | 0773 | 0773 | 0773 | 0773 | 0773 | 0673 | 0773 | 0773 | 0673 | 0773 | 0773 | 0773 | 0773 | <b>females<br/>(cont...)</b> |
|                           | ANIMAL ID   | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 |                              |

**ALIMENTARY SYSTEM**

|                                      |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Esophagus                            | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Gallbladder<br>Lymphoma Malignant    | M | + | M | M | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Large, Cecum               | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Large, Colon               | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Large, Rectum              | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Small, Duodenum<br>Adenoma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Small, Ileum               | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Small, Jejunum             | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Liver<br>Hepatocellular Adenoma      | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Hepatocellular Adenoma, Multiple     | X | X |   | X |   |   |   | X |   |   |   |   |   |   |   |   |   | X |   |   |   | X | X |   |
| Hepatocellular Carcinoma             |   |   |   |   |   |   |   |   |   |   | X |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Histiocytic Sarcoma                  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | X |   |   |   |
| Leiomyosarcoma, Metastatic, Uterus   |   |   |   |   |   |   |   |   |   |   | X |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Lymphoma Malignant                   | X |   |   |   |   | X |   |   |   |   |   |   |   |   |   | X | X |   |   |   | X |   |   |   |
| Mesentery<br>Hemangiosarcoma         |   | + |   |   | + |   | + | + | + | + | + |   |   |   |   | + | + |   |   | + | + |   |   | + |

\* .. Total animals with tissue examined microscopically; Total animals 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

P04: NEOPLASMS BY INDIVIDUAL ANIMAL  
 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 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |   |   |   |  |
|---|-------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|--|
|   | ANIMAL ID   | 7 | 5 | 7 | 7 | 7 | 7 | 4 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 6 | 7 | 7 | 6 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 |   |   |  |
|   |             | 3 | 7 | 3 | 3 | 3 | 3 | 6 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 9 | 3 | 3 | 0 | 3 | 9 | 3 | 3 | 0 | 3 | 3 | 0 | 3 | 0 | 3 | 0 | 3 | 0 | 3 | 0 | 3 |   |   |   |  |
|   |             | 2 | 6 | 3 | 1 | 1 | 2 | 0 | 3 | 3 | 2 | 3 | 2 | 3 | 2 | 2 | 4 | 1 | 8 | 2 | 3 | 8 | 2 | 3 | 8 | 1 | 3 | 9 | 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 |   |   |  |
|   |             | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |   |   |  |
|   |             | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |   |   |  |
|   |             | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |   |   |  |
| Lymphoma Malignant                          |             |   |   |   |   |   |   | X |   |   | X |   |   |   |   |   | X |   | X |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | X |   |   |  |
| Pancreas                                    |             | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |   |  |
| Lymphoma Malignant                          |             |   |   |   | X |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |  |
| Salivary Glands                             |             | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |   |  |
| Stomach, Forestomach                        |             | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |   |  |
| Stomach, Glandular                          |             | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |   |  |
| Tooth                                       |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |  |
| <b>CARDIOVASCULAR SYSTEM</b>                |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |  |
| Blood Vessel                                |             | + | + | + | + | + | + | M | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |   |   |  |
| Heart                                       |             | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |   |  |
| Lymphoma Malignant                          |             |   |   |   |   |   |   | X |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |  |
| <b>ENDOCRINE SYSTEM</b>                     |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |  |
| Adrenal Cortex                              |             | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |   |  |
| Adenoma                                     |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |  |
| Hepatocellular Carcinoma, Metastatic, Liver |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |  |
| Lymphoma Malignant                          |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |  |
| Subcapsular, Adenoma                        |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |  |
| Adrenal Medulla                             |             | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |  |
| Pheochromocytoma Benign                     |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |  |
| Pheochromocytoma Malignant                  |             |   |   |   |   |   |   |   | X |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |  |

females  
(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

P04: NEOPLASMS BY INDIVIDUAL ANIMAL

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 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | ANIMAL ID | females<br>(cont...) |      |
|--------------------------------|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----------|----------------------|------|
|                                | 0732        | 0736 | 0733 | 0731 | 0733 | 0733 | 0736 | 0733 | 0733 | 0732 | 0733 | 0732 | 0733 | 0732 | 0734 | 0731 | 0738 | 0732 | 0733 | 0738 | 0733 | 0739 | 0732 |           |                      | 0733 |

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Islets, Pancreatic<br>Adenoma<br>Lymphoma Malignant                   | + | + | + | + | + | + | + | + | + | X | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Parathyroid Gland   | M | + | M | M | M | M | + | M | + | + | + | M | + | + | M | M | M | + | M | M | M | + | + | + | + | M |
| Pituitary Gland<br>Pars Distalis, Adenoma<br>Pars Intermedia, Adenoma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Thyroid Gland<br>Lymphoma Malignant                                   | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |

### GENERAL BODY SYSTEM

NONE

### GENITAL SYSTEM

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Clitoral Gland  | + | + | + | + | + | + | M | + | + | + | + | + | + | + | + | + | M | + | + | + | + | + | + | + | + | + |
| Ovary<br>Cystadenocarcinoma<br>Leiomyosarcoma, Metastatic, Uterus<br>Lymphoma Malignant | + | M | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Uterus<br>Carcinoma<br>Leiomyosarcoma<br>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

P04: NEOPLASMS BY INDIVIDUAL ANIMAL  
 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<br>7<br>3<br>2      | 0<br>5<br>7<br>6      | 0<br>7<br>3<br>3      | 0<br>7<br>3<br>1      | 0<br>7<br>3<br>1      | 0<br>7<br>3<br>2      | 0<br>4<br>6<br>0      | 0<br>7<br>3<br>3      | 0<br>7<br>3<br>3      | 0<br>7<br>3<br>2      | 0<br>7<br>3<br>3      | 0<br>7<br>3<br>2      | 0<br>7<br>3<br>3      | 0<br>7<br>3<br>2      | 0<br>7<br>3<br>4      | 0<br>6<br>9<br>1      | 0<br>7<br>3<br>2      | 0<br>7<br>3<br>3      | 0<br>6<br>0<br>8      | 0<br>7<br>3<br>1      | 0<br>7<br>3<br>3      | 0<br>7<br>0<br>9      | 0<br>7<br>3<br>2      |                       |                       |           |                      |
| 30 mg/m3           | 0<br>0<br>5<br>0<br>1 | 0<br>0<br>5<br>0<br>2 | 0<br>0<br>5<br>0<br>3 | 0<br>0<br>5<br>0<br>4 | 0<br>0<br>5<br>0<br>5 | 0<br>0<br>5<br>0<br>6 | 0<br>0<br>5<br>0<br>7 | 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>0 | 0<br>0<br>5<br>1<br>1 | 0<br>0<br>5<br>1<br>1 | 0<br>0<br>5<br>1<br>1 | 0<br>0<br>5<br>1<br>1 | 0<br>0<br>5<br>1<br>1 | 0<br>0<br>5<br>1<br>1 | 0<br>0<br>5<br>1<br>1 | 0<br>0<br>5<br>1<br>1 | 0<br>0<br>5<br>1<br>1 | 0<br>0<br>5<br>2<br>1 | 0<br>0<br>5<br>2<br>2 | 0<br>0<br>5<br>2<br>2 | 0<br>0<br>5<br>2<br>3 | 0<br>0<br>5<br>2<br>4 | 0<br>0<br>5<br>2<br>5 |           |                      |

Lymphoma Malignant  
 Thymoma Benign

X

X

X

**INTEGUMENTARY SYSTEM**

Mammary Gland  
 Carcinoma

+ + + + + + + + + + + + + + + + + X + + + + + + +

Skin  
 Subcutaneous Tissue, Fibrosarcoma  
 Subcutaneous Tissue, Schwannoma Malignant

+ X

**MUSCULOSKELETAL SYSTEM**

Bone

+ +

Skeletal Muscle

+

**NERVOUS SYSTEM**

Brain

+ +

Peripheral Nerve

+

Spinal Cord

+

**RESPIRATORY SYSTEM**

Larynx

+ +

Lung

+ +

Alveolar/Bronchiolar 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

P04: NEOPLASMS BY INDIVIDUAL ANIMAL

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 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | females<br>(cont...) |  |
|---|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----------------------|--|
|   | 0732        | 0736 | 0731 | 0733 | 0735 | 0737 | 0739 | 0741 | 0743 | 0745 | 0747 | 0749 | 0751 | 0753 | 0755 | 0757 | 0759 | 0761 | 0763 | 0765 | 0767 | 0769 | 0771 | 0773 | 0775 |                      |  |
| ANIMAL ID                                   | 0050        | 0055 | 0050 | 0055 | 0050 | 0055 | 0050 | 0055 | 0050 | 0055 | 0050 | 0055 | 0050 | 0055 | 0050 | 0055 | 0050 | 0055 | 0050 | 0055 | 0050 | 0055 | 0050 | 0055 | 0050 | 0055                 |  |
| Alveolar/Bronchiolar Carcinoma              |             |      |      |      |      |      | X    | X    |      |      |      |      |      |      | X    |      |      |      |      |      |      |      |      |      |      |                      |  |
| Carcinoma, Metastatic, Mammary Gland        |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | X    |      |      |      |                      |  |
| Hepatocellular Carcinoma, Metastatic, Liver |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                      |  |
| Lymphoma Malignant                          |             |      |      |      |      |      | X    |      |      |      |      |      |      |      | X    |      |      |      |      |      | X    | X    |      |      |      |                      |  |
| Schwannoma Malignant, Metastatic, Skin      |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | X                    |  |
| Nose  | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +                    |  |
| Carcinoma, Metastatic, Harderian Gland      |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                      |  |
| Trachea                                     | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +                    |  |
| <b>SPECIAL SENSES SYSTEM</b>                |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                      |  |
| Eye   | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +                    |  |
| Carcinoma, Metastatic, Harderian Gland      |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                      |  |
| Harderian Gland                             | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +                    |  |
| Adenoma                                     |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                      |  |
| Carcinoma                                   |             |      |      |      |      |      |      |      |      |      |      |      |      |      | X    |      | X    |      |      |      |      |      |      |      |      |                      |  |
| <b>URINARY SYSTEM</b>                       |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                      |  |
| Kidney                                      | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +                    |  |
| Lymphoma Malignant                          |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | X    | X    |      |      |      |      | X    |      |      |                      |  |
| Ureter                                      |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                      |  |
| Lymphoma Malignant                          |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | +    | X                    |  |
| Urinary Bladder                             | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +                    |  |
| Lymphoma Malignant                          |             |      | X    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                      |  |

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

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







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

P04: NEOPLASMS BY INDIVIDUAL ANIMAL  
 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 |
|---|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------|
|   | 0733        | 0731  | 0681  | 0771  | 0772  | 0772  | 0775  | 0667  | 0664  | 0773  | 0773  | 0773  | 0773  | 0773  | 0773  | 0773  | 0773  | 0773  | 0773  | 0773  | 0773  | 0773  | 0773  | 0773  |          |
| ANIMAL ID                                   | 00526       | 00527 | 00528 | 00529 | 00530 | 00531 | 00532 | 00533 | 00534 | 00535 | 00536 | 00537 | 00538 | 00539 | 00540 | 00541 | 00542 | 00543 | 00544 | 00545 | 00546 | 00547 | 00548 | 00549 |          |
| Lymphoma Malignant                          |             |       |       | X     |       | X     | X     |       |       |       |       |       |       |       |       |       |       |       | X     |       | X     |       |       |       |          |
| Pancreas                                    | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     |          |
| Lymphoma Malignant                          |             |       |       |       |       |       |       | X     |       |       |       |       |       |       |       |       |       |       | X     |       |       |       |       |       |          |
| Salivary Glands                             | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     |          |
| Stomach, Forestomach                        | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     |          |
| Stomach, Glandular                          | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     |          |
| Tooth                                       |             |       |       | +     |       |       |       |       |       |       |       |       |       | +     |       |       |       |       |       |       |       |       |       |       |          |
| <b>CARDIOVASCULAR SYSTEM</b>                |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |
| Blood Vessel                                | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     |          |
| Heart                                       | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     |          |
| Lymphoma Malignant                          |             |       |       |       |       |       |       | X     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |
| <b>ENDOCRINE SYSTEM</b>                     |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |
| Adrenal Cortex                              | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     |          |
| Adenoma                                     |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | X     |       |       |       |       |       |          |
| Hepatocellular Carcinoma, Metastatic, Liver |             |       |       |       |       |       |       |       | X     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |
| Lymphoma Malignant                          |             |       |       |       |       | X     | X     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |
| Subcapsular, Adenoma                        |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | X     |       |       |       |          |
| Adrenal Medulla                             | +           | +     | M     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     |          |
| Pheochromocytoma Benign                     |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |
| Pheochromocytoma Malignant                  |             |       |       |       |       |       |       |       |       |       |       |       | X     |       |       |       |       |       |       |       |       |       |       |       |          |

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

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





Experiment Number: 20515 - 04

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

**P04: NEOPLASMS BY INDIVIDUAL ANIMAL**

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 |       |       |       |       |              |
|---|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------|-------|-------|-------|-------|--------------|
|   | 0733        | 0731  | 0681  | 0771  | 0772  | 0772  | 0775  | 0667  | 0664  | 0773  | 0773  | 0773  | 0773  | 0773  | 0773  | 0773  | 0773  | 0773  | 0573  | 0773  |          | 0775  |       |       |       |              |
|   | ANIMAL ID   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |       |       |       |              |
|   | 00526       | 00527 | 00528 | 00529 | 00530 | 00531 | 00532 | 00533 | 00534 | 00535 | 00536 | 00537 | 00538 | 00539 | 00540 | 00541 | 00542 | 00543 | 00544 | 00545 | 00546    | 00547 | 00548 | 00549 | 00550 |              |
| Lymphoma Malignant                        |             |       |       |       |       |       |       |       | X     | X     |       |       |       |       |       |       |       |       | X     |       | X        |       |       |       |       | 7            |
| Thymoma Benign                            |             |       |       |       |       |       |       |       |       |       |       | X     |       |       |       |       |       |       |       |       |          |       |       |       |       | 1            |
| <b>INTEGUMENTARY SYSTEM</b>               |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |       |       |       |              |
| Mammary Gland Carcinoma                   | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     |          | +     | +     | +     | +     | 50<br>2      |
| Skin                                      | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +        | +     | +     | +     | +     | 50<br>1<br>1 |
| Subcutaneous Tissue, Fibrosarcoma         |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |       |       | X     |              |
| Subcutaneous Tissue, Schwannoma Malignant |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |       |       |       |              |
| <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>                 |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |       |       |       |              |
| Larynx                                    | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +        | +     | +     | +     | +     | 50           |
| Lung                                      | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +        | +     | +     | +     | +     | 50           |
| Alveolar/Bronchiolar 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

P04: NEOPLASMS BY INDIVIDUAL ANIMAL  
 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 |       |       |       |       |   |   |    |
|---|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------|-------|-------|-------|-------|---|---|----|
|   | 0733        | 0731  | 0681  | 0771  | 0772  | 0772  | 0766  | 0667  | 0674  | 0773  | 0773  | 0773  | 0773  | 0773  | 0773  | 0773  | 0773  | 0773  | 0773  | 0773  |          | 0773  |       |       |       |   |   |    |
| ANIMAL ID                                   | 00526       | 00527 | 00528 | 00529 | 00530 | 00531 | 00532 | 00533 | 00534 | 00535 | 00536 | 00537 | 00538 | 00539 | 00540 | 00541 | 00542 | 00543 | 00544 | 00545 | 00546    | 00547 | 00548 | 00549 | 00550 |   |   |    |
| Alveolar/Bronchiolar Carcinoma              |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |       |       |       | X | 4 |    |
| Carcinoma, Metastatic, Mammary Gland        |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |       |       |       |   |   | 1  |
| Hepatocellular Carcinoma, Metastatic, Liver |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |       |       |       | X | 1 |    |
| Lymphoma Malignant                          |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |       |       |       | X | 7 |    |
| Schwannoma Malignant, Metastatic, Skin      |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |       |       |       | X | 1 |    |
| Nose  |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |       |       |       |   |   | 50 |
| Carcinoma, Metastatic, Harderian Gland      |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |       |       |       | X | 1 |    |
| Trachea                                     |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |       |       |       |   |   | 50 |
| <b>SPECIAL SENSES SYSTEM</b>                |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |       |       |       |   |   |    |
| Eye   |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |       |       |       |   |   | 50 |
| Carcinoma, Metastatic, Harderian Gland      |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |       |       |       | X | 1 |    |
| Harderian Gland                             |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |       |       |       |   |   | 50 |
| Adenoma                                     |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |       |       |       | X | 3 |    |
| Carcinoma                                   |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |       |       |       | X | 1 |    |
| <b>URINARY SYSTEM</b>                       |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |       |       |       |   |   |    |
| Kidney                                      |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |       |       |       |   |   | 50 |
| Lymphoma Malignant                          |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |       |       |       | X | 4 |    |
| Ureter                                      |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |       |       |       |   |   | 1  |
| Lymphoma Malignant                          |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |       |       |       |   |   | 1  |
| Urinary Bladder                             |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |       |       |       |   |   | 50 |
| Lymphoma Malignant                          |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |       |       |       |   |   | 1  |

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

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

Experiment Number: 20515 - 04

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P04: NEOPLASMS BY INDIVIDUAL ANIMAL

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><br><b>30 mg/m3</b> | DAY ON TEST | 0733  | 0731  | 0681  | 0771  | 0772  | 0775  | 0677  | 0664  | 0743  | 0731  | 0733  | 0733  | 0732  | 0771  | 0773  | 0773  | 0773  | 0773  | 0575  | 0773  | 0775  | 0750  | 0773  | 0750  | <b>* TOTALS</b> |
|  | ANIMAL ID   | 00526 | 00527 | 00528 | 00529 | 00530 | 00531 | 00532 | 00533 | 00534 | 00535 | 00536 | 00537 | 00538 | 00539 | 00540 | 00541 | 00542 | 00543 | 00544 | 00545 | 00546 | 00547 | 00548 | 00549 |                 |
|  |             | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |                 |

**SYSTEMIC LESIONS**

|                     |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |    |
|---------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|
| Multiple Organ      | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Histiocytic Sarcoma |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 1  |
| Lymphoma Malignant  |   |   |   | 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

P04: NEOPLASMS BY INDIVIDUAL ANIMAL

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><br><b>100 mg/m3</b> | DAY ON TEST | 0733 | 0731 | 0732 | 0596 | 0733 | 0732 | 0430 | 0256 | 0646 | 0576 | 0773 | 0773 | 0772 | 0771 | 0773 | 0772 | 0671 | 0772 | 0773 | 0576 | 0773 | 0771 | 0574 | 0775 | <b>females (cont...)</b> |
|   | 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 |                          |

**ALIMENTARY SYSTEM**

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Esophagus   | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Gallbladder<br>Leiomyosarcoma, Metastatic, Intestine Small, Duodenum<br>Lymphoma Malignant  | + | + | + | + | + | A | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | M | + | M |
| Intestine Large, Cecum<br>Leiomyoma   | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Large, Colon  | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Large, Rectum   | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Small, Duodenum<br>Leiomyosarcoma   | + | + | + | + | + | A | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Small, Ileum  | + | + | + | + | + | A | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Intestine Small, Jejunum  | + | + | + | + | + | A | + | + | A | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Liver<br>Hemangiosarcoma<br>Hepatocellular Adenoma<br>Hepatocellular Adenoma, Multiple<br>Hepatocellular Carcinoma<br>Hepatocholangiocarcinoma<br>Histiocytic 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

P04: NEOPLASMS BY INDIVIDUAL ANIMAL  
 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 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | ANIMAL ID | females<br>(cont...) |
|--|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----------|----------------------|
|  | 0733        | 0731 | 0732 | 0596 | 0733 | 0732 | 0733 | 0730 | 0736 | 0734 | 0736 | 0733 | 0733 | 0732 | 0731 | 0733 | 0732 | 0731 | 0732 | 0733 | 0736 | 0733 | 0733 | 0731 | 0734 |           |                      |
| Lymphoma Malignant   |             |      |      |      |      |      | X    |      |      |      |      | X    |      |      |      |      |      |      |      |      |      |      |      |      | X    |           |                      |
| Mesentery  |             | +    | +    |      |      |      | +    | +    | M    |      |      | +    |      |      |      |      |      |      |      | +    |      |      |      |      | +    |           |                      |
| Lymphoma Malignant   |             | X    |      |      |      |      | X    |      |      |      |      | X    |      |      |      |      |      |      |      |      |      |      |      |      |      |           |                      |
| Fat, Leiomyosarcoma, Metastatic, Intestine Small, Duodenum |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |           |                      |
| Pancreas   | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    |           |                      |
| Leiomyosarcoma, Metastatic, Intestine Small, Duodenum      |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |           |                      |
| Lymphoma Malignant   |             |      |      |      | X    | X    |      |      |      |      |      | X    |      |      |      |      |      |      |      |      |      |      |      |      | X    |           |                      |
| Salivary Glands  | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    |           |                      |
| Lymphoma Malignant   |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |           |                      |
| Stomach, Forestomach                                       | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    |           |                      |
| Squamous Cell Papilloma                                    |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |           |                      |
| Stomach, Glandular   | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    |           |                      |
| Tooth  |             |      |      |      |      | +    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | +    |           |                      |
| <b>CARDIOVASCULAR SYSTEM</b>                               |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |           |                      |
| Blood Vessel   | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | M    | +    | +    | +    | +    | I    | +    | +    | +    | +    | +    | I    | +    | +    |           |                      |
| Heart  | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    |           |                      |
| <b>ENDOCRINE SYSTEM</b>                                    |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |           |                      |
| Adrenal Cortex   | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    |           |                      |

\* .. Total animals with tissue examined microscopically; Total animals 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

P04: NEOPLASMS BY INDIVIDUAL ANIMAL  
 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 (cont...) |
|---|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----------|-------------------|
|   | 0733        | 0733 | 0733 | 0596 | 0773 | 0773 | 0423 | 0256 | 0064 | 0064 | 0064 | 0064 | 0064 | 0064 | 0064 | 0064 | 0064 | 0064 | 0064 | 0064 | 0064 | 0064 | 0064 | 0064 |           |                   |
| 100 mg/m3                               | 0733        | 0733 | 0733 | 0596 | 0773 | 0773 | 0423 | 0256 | 0064 | 0064 | 0064 | 0064 | 0064 | 0064 | 0064 | 0064 | 0064 | 0064 | 0064 | 0064 | 0064 | 0064 | 0064 | 0064 | 0064      |                   |
| Lymphoma Malignant                      |             |      |      |      |      |      |      |      |      |      |      | X    |      |      |      |      |      |      |      |      |      |      |      |      | X         |                   |
| Adrenal Medulla                         | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +         |                   |
| Lymphoma Malignant                      |             |      |      |      |      |      |      |      |      |      |      | X    |      |      |      |      |      |      |      |      |      |      |      |      | X         |                   |
| Islets, Pancreatic                      | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | M         |                   |
| Adenoma                                 |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |           |                   |
| Lymphoma Malignant                      |             |      |      | X    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |           |                   |
| Parathyroid Gland                       | +           | M    | M    | M    | +    | +    | M    | +    | +    | +    | +    | M    | +    | M    | +    | M    | +    | M    | M    | M    | +    | +    | +    | M    | +         |                   |
| Pituitary Gland                         | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +         |                   |
| Meningioma Malignant, Metastatic, Brain |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |           |                   |
| Pars Distalis, Adenoma                  |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | X    | X    |      | X    |      |      | X         |                   |
| Thyroid Gland                           | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +         |                   |
| C-cell, Adenoma                         |             |      |      | X    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |           |                   |
| Follicular Cell, Carcinoma              |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | X    |      |      |      |      | X         |                   |

GENERAL BODY SYSTEM

NONE

GENITAL SYSTEM

Clitoral Gland

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

Ovary

+ +

Lymphoma Malignant

X X

Uterus

+ +

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

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

|                           |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---------------------------|-------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| <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 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |   |
|                           |             | 7 | 7 | 7 | 5 | 7 | 7 | 4 | 2 | 5 | 6 | 5 | 7 | 7 | 7 | 7 | 7 | 7 | 6 | 7 | 7 | 7 | 5 | 7 | 7 | 5 | 7 | 7 | 7 | 5 | 7 | 7 | 5 | 7 | 5 |
| <b>100 mg/m3</b>          |             | 3 | 3 | 3 | 9 | 3 | 3 | 3 | 5 | 3 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 9 | 1 | 1 | 1 | 3 | 6 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 4 |   |
|                           | ANIMAL ID   | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
|                           |             | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 |
|                           |             | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
|                           |             | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 |

females (cont...)

Lymphoma Malignant

### HEMATOPOIETIC SYSTEM

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bone Marrow   |   | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |   |   |
| Lymphoma Malignant  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Lymph Node  |   |   |   |   |   |   | M |   |   |   |   | + |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | + | + |   |
| Axillary, Lymphoma Malignant  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | X |
| Deep Cervical, Lymphoma Malignant                                   |   |   |   |   |   |   |   |   |   |   |   |   | X |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Iliac, Histiocytic Sarcoma  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Lumbar, Lymphoma Malignant  |   |   |   |   |   |   |   |   |   |   |   |   | X |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | X |   |
| Pancreatic, Histiocytic Sarcoma                                     |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Pancreatic, Lymphoma Malignant                                      |   |   |   |   |   |   |   |   |   |   |   |   | X |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | X |   |
| Renal, Hemangiosarcoma  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | X |   |
| Renal, Histiocytic Sarcoma  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Renal, Lymphoma Malignant   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Lymph Node, Bronchial Carcinoma, Metastatic, Uncertain Primary Site | M | + | + | + | + |   | M | + | + | + |   | M | + | + | + | + | + |   | M | + | + | + |   | M | + | + | + |   | M | + | + |   |   |   |   |   |   |
| Lymphoma Malignant  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | X |
| Lymph Node, Mandibular Hemangiosarcoma                              |   | + | + | + | + | + | + | M | + | M | + |   |   | M | + | + | + | + | + |   | + | + | + |   | + | + | + | + | + | + | + |   |   |   | M | + |   |
| Lymphoma Malignant  |   |   | X | X |   | X | X |   |   |   |   |   | X |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | X |
| Lymph Node, Mediastinal Histiocytic Sarcoma                         |   | + | + | + | + |   | M | + | + | + | + | + | + | + | + | + | + | + |   | M | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |   |
| Lymphoma Malignant  |   |   | X | X |   |   | X |   |   |   |   |   | X |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | X |
| Lymph Node, Mesenteric  |   | + | + | + | + | + | + | + | + | + | + | + | + |   | M | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |   |

\* .. Total animals with tissue examined microscopically; Total animals with tumor  
+ .. Tissue examined microscopically  
X .. Lesion present  
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M .. Missing tissue  
A .. Autolysis precludes evaluation  
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Experiment Number: 20515 - 04  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: MICE/B6C3F1

**P04: NEOPLASMS BY INDIVIDUAL ANIMAL**  
 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           |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       | ANIMAL ID | females<br>(cont...) |
|---------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------|----------------------|
|                                 | 0<br>7<br>3<br>3      | 0<br>7<br>3<br>1      | 0<br>7<br>3<br>2      | 0<br>5<br>9<br>6      | 0<br>7<br>3<br>3      | 0<br>7<br>3<br>2      | 0<br>4<br>3<br>3      | 0<br>2<br>5<br>0      | 0<br>5<br>3<br>6      | 0<br>6<br>4<br>4      | 0<br>5<br>3<br>6      | 0<br>7<br>3<br>3      | 0<br>7<br>3<br>3      | 0<br>7<br>3<br>2      | 0<br>7<br>3<br>1      | 0<br>7<br>3<br>3      | 0<br>6<br>9<br>1      | 0<br>7<br>1<br>2      | 0<br>7<br>3<br>2      | 0<br>5<br>6<br>3      | 0<br>7<br>3<br>3      | 0<br>7<br>3<br>1      | 0<br>5<br>3<br>4      |                       |                       |           |                      |
|                                 | 0<br>0<br>7<br>0<br>1 | 0<br>0<br>7<br>0<br>2 | 0<br>0<br>7<br>0<br>3 | 0<br>0<br>7<br>0<br>4 | 0<br>0<br>7<br>0<br>5 | 0<br>0<br>7<br>0<br>6 | 0<br>0<br>7<br>0<br>7 | 0<br>0<br>7<br>0<br>8 | 0<br>0<br>7<br>0<br>9 | 0<br>0<br>7<br>1<br>0 | 0<br>0<br>7<br>1<br>1 | 0<br>0<br>7<br>1<br>1 | 0<br>0<br>7<br>1<br>1 | 0<br>0<br>7<br>1<br>1 | 0<br>0<br>7<br>1<br>1 | 0<br>0<br>7<br>1<br>1 | 0<br>0<br>7<br>1<br>1 | 0<br>0<br>7<br>1<br>1 | 0<br>0<br>7<br>1<br>2 | 0<br>0<br>7<br>2<br>2 | 0<br>0<br>7<br>2<br>2 | 0<br>0<br>7<br>2<br>2 | 0<br>0<br>7<br>2<br>2 | 0<br>0<br>7<br>2<br>3 | 0<br>0<br>7<br>2<br>4 |           |                      |

Histiocytic Sarcoma  
 Lymphoma Malignant

X X X X X

Spleen  
 Histiocytic Sarcoma  
 Lymphoma Malignant

+ + + + + + + + + A + + + + + + + + + + + + + +  
 X X X X X X X X X X

Thymus  
 Lymphoma Malignant

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

**INTEGUMENTARY SYSTEM**

Mammary Gland  
 Adenoma  
 Carcinoma

+  
 X

Skin  
 Rhabdomyosarcoma, Metastatic, Skeletal Muscle  
 Subcutaneous Tissue, Fibrosarcoma

+  
 X  
 X

**MUSCULOSKELETAL SYSTEM**

Bone  
 Vertebra, Rhabdomyosarcoma, Metastatic, Skeletal Muscle

+  
 X

Skeletal Muscle  
 Leiomyosarcoma, Metastatic, Intestine Small, Duodenum  
 Rhabdomyosarcoma

+  
 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

P04: NEOPLASMS BY INDIVIDUAL ANIMAL

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

Carcinoma

URINARY SYSTEM

|                    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kidney             | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Lymphoma Malignant |   |   |   | X | X |   |   |   |   | X |   |   |   |   |   |   |   |   |   |   |   |   |   | X |
| Urinary Bladder    | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Lymphoma Malignant |   |   |   |   |   |   |   |   |   | X |   |   |   |   |   |   |   |   |   |   |   |   |   |   |

SYSTEMIC LESIONS

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

P04: NEOPLASMS BY INDIVIDUAL ANIMAL  
 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 | * TOTALS |
|--------------------|--|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----------|
| DAY ON TEST        |  | 7 | 7 | 7 | 7 | 6 | 6 | 6 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 6 | 7 | 7 | 6 | 7 | 7 | 7 | 6 | 7 |          |
| B6C3F1 MICE FEMALE |  | 3 | 3 | 3 | 3 | 6 | 8 | 6 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 9 | 3 | 3 | 3 | 8 | 3 |          |
| 100 mg/m3          |  | 2 | 3 | 2 | 1 | 3 | 8 | 9 | 3 | 2 | 2 | 1 | 2 | 2 | 3 | 3 | 3 | 4 | 1 | 2 | 9 | 3 | 2 | 2 | 8 | 1        |
| ANIMAL ID          |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0        |
|                    |  | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7        |
|                    |  | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5        |
|                    |  | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0        |

### ALIMENTARY SYSTEM

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |    |    |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|----|
| Esophagus   | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |    |
| Gallbladder   | + | + | + | + | + | + | + | M | + | + | + | + | + | M | M | M | + | + | M | + | + | + | M | + | +  | 41 |
| Leiomyosarcoma, Metastatic, Intestine Small, Duodenum |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | X |   |   | 1  |    |
| Lymphoma Malignant                                    |   |   |   |   |   |   |   |   |   |   |   | X |   |   |   |   |   |   |   |   |   |   |   |   | 1  |    |
| Intestine Large, Cecum                                | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |    |
| Leiomyoma   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | X | 1  |    |
| Intestine Large, Colon                                | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |    |
| Intestine Large, Rectum                               | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |    |
| Intestine Small, Duodenum                             | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 49 |    |
| Leiomyosarcoma  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | X |   | 1  |    |
| Intestine Small, Ileum                                | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 49 |    |
| Intestine Small, Jejunum                              | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 48 |    |
| Liver   | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |    |
| Hemangiosarcoma                                       |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 1  |    |
| Hepatocellular Adenoma                                |   |   |   |   |   | X |   | X |   |   |   |   |   |   | X |   |   |   | X |   |   |   |   |   | 7  |    |
| Hepatocellular Adenoma, Multiple                      |   |   |   |   |   |   |   |   |   |   |   |   |   | X |   |   |   | X |   |   | X |   |   |   | 3  |    |
| Hepatocellular Carcinoma                              |   |   |   |   |   |   |   |   |   |   |   |   |   | X |   |   |   |   |   |   |   |   |   |   | 1  |    |
| Hepatocholangiocarcinoma                              |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | X |   |   | 1  |    |
| Histiocytic Sarcoma                                   |   |   | 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

P04: NEOPLASMS BY INDIVIDUAL ANIMAL

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        | 0733  | 0732  | 0731  | 0763  | 0768  | 0766  | 0769  | 0773  | 0773  | 0772  | 0771  | 0772  | 0773  | 0773  | 0773  | 0773  | 0773  | 0766  | 0777  | 0776  | 0777  | 0766  | 0777  |          |  |
| ANIMAL ID  | 00726       | 00707 | 00707 | 00707 | 00707 | 00707 | 00707 | 00707 | 00707 | 00707 | 00707 | 00707 | 00707 | 00707 | 00707 | 00707 | 00707 | 00707 | 00707 | 00707 | 00707 | 00707 | 00707 | 00707 |          |  |
| Lymphoma Malignant   |             |       |       |       | X     | X     |       |       |       |       | X     | X     | X     |       | X     |       |       |       |       |       |       | X     | X     | 11    |          |  |
| Mesentery  |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 15       |  |
| Lymphoma Malignant   |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 6        |  |
| Fat, Leiomyosarcoma, Metastatic, Intestine Small, Duodenum |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 1        |  |
| Pancreas   |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 50       |  |
| Leiomyosarcoma, Metastatic, Intestine Small, Duodenum      |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 1        |  |
| Lymphoma Malignant   |             |       |       |       |       | X     |       |       |       |       |       |       | X     |       |       | X     |       |       |       |       |       |       |       |       | 7        |  |
| Salivary Glands  | M           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 49       |  |
| Lymphoma Malignant   |             |       |       |       |       | X     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 1        |  |
| Stomach, Forestomach                                       |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 50       |  |
| Squamous Cell Papilloma                                    |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 1        |  |
| Stomach, Glandular   |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 50       |  |
| Tooth  |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 4        |  |
| <b>CARDIOVASCULAR SYSTEM</b>                               |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |  |
| Blood Vessel   |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 44       |  |
| Heart  |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 50       |  |
| <b>ENDOCRINE SYSTEM</b>                                    |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |  |
| Adrenal Cortex   |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 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

P04: NEOPLASMS BY INDIVIDUAL ANIMAL  
 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        | 0733  | 0732  | 0731  | 0733  | 0738  | 0736  | 0739  | 0733  | 0732  | 0732  | 0731  | 0732  | 0733  | 0733  | 0733  | 0733  | 0734  | 0731  | 0732  | 0739  | 0733  | 0732  | 0733  | 0738  |              | 0731    |
| ANIMAL ID  | 00726       | 00707 | 00707 | 00707 | 00707 | 00707 | 00707 | 00707 | 00707 | 00707 | 00707 | 00707 | 00707 | 00707 | 00707 | 00707 | 00707 | 00707 | 00707 | 00707 | 00707 | 00707 | 00707 | 00707 | 00707 |              |         |
| Lymphoma Malignant   |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 2            |         |
| Adrenal Medulla<br>Lymphoma Malignant  | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | 50<br>2      |         |
| Islets, Pancreatic<br>Adenoma<br>Lymphoma Malignant                                  | +           | +     | +     | +     | +     | X     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | 49<br>1<br>1 |         |
| Parathyroid Gland  | M           | +     | +     | M     | +     | +     | +     | +     | M     | M     | M     | M     | M     | M     | +     | +     | M     | +     | M     | M     | M     | +     | +     | M     | M     | 25           |         |
| Pituitary Gland<br>Meningioma Malignant, Metastatic, Brain<br>Pars Distalis, Adenoma | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | 50<br>1<br>9 |         |
| Thyroid Gland<br>C-cell, Adenoma<br>Follicular Cell, Carcinoma                       | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | 50<br>1<br>3 |         |
| <b>GENERAL BODY SYSTEM</b>   |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |              |         |
| NONE   |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |              |         |
| <b>GENITAL SYSTEM</b>  |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |              |         |
| Clitoral Gland   | +           | +     | +     | +     | M     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | M     | +     | +     | +     | +     | +     | M     | +     | M            | 44      |
| Ovary<br>Lymphoma Malignant  | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +            | 50<br>7 |
| Uterus   | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +            | 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

P04: NEOPLASMS BY INDIVIDUAL ANIMAL  
 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        | 0733  | 0732  | 0731  | 0733  | 0738  | 0739  | 0733  | 0732  | 0732  | 0731  | 0732  | 0733  | 0733  | 0733  | 0733  | 0733  | 0734  | 0731  | 0732  | 0739  | 0733  | 0732  | 0732  |          | 0738  | 0733  | 0738  | 0739  |
| ANIMAL ID   | 00726       | 00707 | 00708 | 00700 | 00700 | 00700 | 00700 | 00700 | 00700 | 00700 | 00700 | 00700 | 00700 | 00700 | 00700 | 00700 | 00700 | 00700 | 00700 | 00700 | 00700 | 00700 | 00700 | 00700 | 00700    | 00700 | 00700 | 00700 | 00700 |
| Histiocytic Sarcoma                                     |             |       | X     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |       |       | 1     |
| Lymphoma Malignant                                      |             |       |       |       | X     | X     |       |       |       |       | X     | X     | X     |       | X     |       |       |       |       |       |       |       |       |       | X        |       |       |       | 11    |
| Spleen  | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +        | +     | +     | +     | 49    |
| Histiocytic Sarcoma                                     |             |       | X     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |       |       | 1     |
| Lymphoma Malignant                                      | X           |       |       |       | X     | X     |       |       |       |       | X     | X     | X     |       | X     | X     | X     |       |       | X     |       |       | X     | X     | X        |       |       | 20    |       |
| Thymus  | +           | +     | +     | +     | +     | M     | M     | +     | +     | I     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +        | M     | +     | 45    |       |
| Lymphoma Malignant                                      |             |       |       |       | X     |       |       |       |       |       | X     |       |       |       | X     | X     |       |       |       |       |       |       |       |       |          | X     |       | 8     |       |
| <b>INTEGUMENTARY SYSTEM</b>                             |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |       |       |       |
| Mammary Gland   | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +        | +     | +     | 50    |       |
| Adenoma   |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |       |       | 1     |
| Carcinoma   |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |       |       | 1     |
| Skin  | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +        | +     | +     | 50    |       |
| Rhabdomyosarcoma, Metastatic, Skeletal Muscle           |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |       |       | 1     |
| Subcutaneous Tissue, Fibrosarcoma                       |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |       |       | 1     |
| <b>MUSCULOSKELETAL SYSTEM</b>                           |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |       |       |       |
| Bone  | +           | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +     | +        | +     | +     | 50    |       |
| Vertebra, Rhabdomyosarcoma, Metastatic, Skeletal Muscle |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |       |       | 1     |
| Skeletal Muscle   |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |       |       | 4     |
| Leiomyosarcoma, Metastatic, Intestine Small, Duodenum   |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       | X     |       | 1     |
| Rhabdomyosarcoma  |             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |       |       | 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

**P04: NEOPLASMS BY INDIVIDUAL ANIMAL**  
 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 |      | ANIMAL ID |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | * TOTALS |      |      |  |
|---------------------------------|-------------|------|-----------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----------|------|------|--|
|                                 | 0732        | 0733 | 0734      | 0735 | 0736 | 0737 | 0738 | 0739 | 0740 | 0741 | 0742 | 0743 | 0744 | 0745 | 0746 | 0747 | 0748 | 0749 | 0750 | 0751 | 0752 | 0753 |          | 0754 | 0755 |  |
|                                 | 0           | 0    | 0         | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0        | 0    | 0    |  |
|                                 | 7           | 7    | 7         | 7    | 6    | 6    | 6    | 7    | 7    | 7    | 7    | 7    | 7    | 7    | 7    | 7    | 6    | 7    | 7    | 6    | 7    | 7    | 7        | 6    | 7    |  |
|                                 | 3           | 3    | 3         | 3    | 6    | 8    | 6    | 3    | 3    | 3    | 3    | 3    | 3    | 3    | 3    | 3    | 3    | 3    | 3    | 3    | 3    | 3    | 3        | 3    | 3    |  |
|                                 | 2           | 3    | 2         | 1    | 3    | 8    | 9    | 3    | 2    | 2    | 1    | 2    | 2    | 3    | 3    | 4    | 1    | 2    | 9    | 3    | 2    | 2    | 8        | 3    | 1    |  |
|                                 | 0           | 0    | 0         | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0        | 0    | 0    |  |
|                                 | 7           | 7    | 7         | 7    | 7    | 7    | 7    | 7    | 7    | 7    | 7    | 7    | 7    | 7    | 7    | 7    | 7    | 7    | 7    | 7    | 7    | 7    | 7        | 7    | 7    |  |
|                                 | 2           | 2    | 2         | 2    | 3    | 3    | 3    | 3    | 3    | 3    | 3    | 3    | 3    | 3    | 3    | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 4        | 4    | 5    |  |
|                                 | 6           | 7    | 8         | 9    | 0    | 1    | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 0    | 1    | 2    | 3    | 4    | 5    | 6    | 7    | 8        | 9    | 0    |  |

### NERVOUS SYSTEM

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |    |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|
| Brain   | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Meningioma Malignant                          |   |   |   |   |   |   | X |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 1  |
| Peripheral Nerve                              |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | + |   |   |   |   |   |   |   | 3  |
| 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 |   |   |   | X |   |   | X |   |   |   |   | X |   |   | 8  |
| Carcinoma, Metastatic, Mammary Gland |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 1  |
| Lymphoma Malignant                   | X |   |   |   | X |   |   |   |   |   | X |   |   | X |   |   |   |   |   |   |   |   |   |   | 9  |
| Nose                                 | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Trachea                              | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |

### SPECIAL SENSES SYSTEM

|                         |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |    |
|-------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|
| Eye                     | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Harderian Gland Adenoma | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
|                         |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 1  |

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

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

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

P04: NEOPLASMS BY INDIVIDUAL ANIMAL  
 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 | 0733 | 0732 | 0731 | 0733 | 0738 | 0739 | 0733 | 0732 | 0732 | 0731 | 0732 | 0733 | 0733 | 0733 | 0733 | 0734 | 0731 | 0732 | 0739 |          | 0733 | 0732 | 0732 | 0733 | 0738 |
| ANIMAL ID                       | 0726        | 0727 | 0728 | 0729 | 0730 | 0731 | 0732 | 0733 | 0734 | 0735 | 0736 | 0737 | 0738 | 0739 | 0740 | 0741 | 0742 | 0743 | 0744 | 0745 | 0746 | 0747     | 0748 | 0749 | 0750 |      |      |
| Carcinoma                       |             |      |      | X    |      |      | X    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |          |      |      |      | 2    |      |
| <b>URINARY SYSTEM</b>           |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |          |      |      |      |      |      |
| Kidney                          | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +        | +    | +    | +    | 50   |      |
| Lymphoma Malignant              | X           |      |      |      | X    |      |      |      |      | X    |      |      |      |      |      |      |      |      |      |      |      |          |      |      | X    | 8    |      |
| Urinary Bladder                 | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +        | +    | +    | +    | 50   |      |
| Lymphoma Malignant              |             |      |      |      | X    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |          |      |      |      | 2    |      |
| <b>SYSTEMIC LESIONS</b>         |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |          |      |      |      |      |      |
| Multiple Organ                  | +           | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +    | +        | +    | +    | +    | 50   |      |
| Histiocytic Sarcoma             |             |      | X    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |          |      |      |      | 1    |      |
| Lymphoma Malignant              | X           |      |      |      | X    | X    |      |      |      |      | X    | X    | X    |      | X    | X    | X    |      | X    |      |      | X        | X    | X    |      | 20   |      |

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

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