

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

P09: NON-NEOPLASTIC LESIONS 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

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

P09: NON-NEOPLASTIC LESIONS 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 Control	DAY ON TEST																				* TOTALS						
	0730	0730	0735	0735	0752	0752	0774	0774	0777	0777	0777	0777	0777	0777	0777	0777	0777	0777	0777	0777		0777					
ANIMAL ID	00026	00027	00028	00029	00030	00031	00032	00033	00034	00035	00036	00037	00038	00039	00040	00041	00042	00043	00044	00045	00046	00047	00048	00049	00050		
Preputial Gland	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50		
Ectasia	1	3		2						1															8		
Inflammation, Chronic Active						3								3			1					1	2		9		
Prostate	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50		
Seminal Vesicle	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50		
Testes	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50		
Germinal Epithelium, Atrophy										2															1		
HEMATOPOIETIC SYSTEM																											
Bone Marrow	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50		
Lymph Node			+														+								4		
Lumbar, Infiltration Cellular, Mixed Cell																									1		
Lumbar, Lymphoid Follicle, Hyperplasia			4																						1		
Lymphoid Follicle, Renal, Hyperplasia			4																						1		
Lymph Node, Bronchial	M	M	+	+	M	+	+	M	M	+	M	+	M	M	M	+	M	+	+	+	+	M	+	+	26		
Infiltration Cellular, Polymorphonuclear			2																						1		
Lymph Node, Mandibular	+	M	M	M	+	+	+	+	M	+	+	+	+	M	+	M	M	M	+	M	+	M	M		31		
Lymph Node, Mediastinal	M	+	+	+	+	+	M	+	+	M	+	M	+	+	+	+	+	+	M	+	+	+	+	M	39		
Lymphoid Follicle, Hyperplasia			4																						1		
Lymph Node, Mesenteric	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	49		
Fibrosis			4																						1		

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

1-4 .. Lesion qualified as:
 1) Minimal 3) Moderate
 2) Mild 4) Marked

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

P09: NON-NEOPLASTIC LESIONS 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 10 mg/m3	DAY ON TEST																				ANIMAL ID	males (cont...)				
	0713	0723	0731	0764	0772	0773	0776	0777	0778	0779	0780	0781	0782	0783	0784	0785	0786	0787	0788	0789			0790			
Respiratory Epithelium, Hyperplasia	1	1	2	2	1	2	2	1	2	2	2	2	2	2	1	1	2	2	1	2	1	2	2	2	1	
Respiratory Epithelium, Metaplasia, Squamous Turbinate, Degeneration															1	1									2	
Trachea	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
SPECIAL SENSES SYSTEM																										
Eye	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Cornea, Inflammation, Chronic Active																									2	
Lens, Degeneration																										
Harderian Gland	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Cyst																									1	
Hyperplasia																										
URINARY SYSTEM																										
Kidney	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Cyst															X											
Infarct																										
Metaplasia, Osseous																										
Nephropathy	1	2	2	2	2	3	2	1	2	3	2	3	2	2	2	1	2	2	2	2	2	2	2	2		
Artery, Inflammation, Chronic Active															3								2			
Capsule, Fibrosis									1																	
Capsule, Hemorrhage																										
Papilla, Necrosis																									2	
Pelvis, Inflammation, Suppurative																									2	
Urinary Bladder	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	

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

1-4 .. Lesion qualified as:
 1) Minimal 3) Moderate
 2) Mild 4) Marked

Experiment Number: 20515 - 04

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P09: NON-NEOPLASTIC LESIONS 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	0729	0688	0709	0703	0556	0752	0591	0730	0536	0733	0592	0779	0573	0773	0544	0773	0622	0763	0673	0733	0599	0729	* TOTALS
	ANIMAL ID	00226	00227	00228	00229	00230	00231	00232	00233	00234	00235	00236	00237	00238	00239	00240	00241	00242	00243	00244	00245	00246	00247	

ALIMENTARY SYSTEM

Esophagus	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
Gallbladder	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	+	+	+	+	+	+	+	M	44		
Intestine Large, Cecum	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
Intestine Large, Colon Ulcer	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	1 2.0
Intestine Large, Rectum Cyst Fibrosis	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	1 1.0 1 1.0
Intestine Small, Duodenum	+	+	+	+	A	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	48	
Intestine Small, Ileum	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
Intestine Small, Jejunum	+	+	+	+	A	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	48	
Liver	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	1 2.0
Angiectasis																									1 2.0	
Basophilic Focus											X														3	
Clear Cell Focus											X		X					X							9	
Congestion																1									1 1.0	
Cyst																									1 3.0	
Eosinophilic Focus																		X							3	
Fatty Change	1	1				1	1		1	1				1			1		1				1		22 1.3	
Hyperplasia							2																		1 2.0	
Mixed Cell Focus																									4	

* .. Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade

+ .. Tissue examined microscopically

X .. Lesion present

I .. Insufficient tissue

M .. Missing tissue

A .. Autolysis precludes evaluation

BLANK .. Not examined microscopically

1-4 .. Lesion qualified as:

1) Minimal 3) Moderate

2) Mild 4) Marked

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

P09: NON-NEOPLASTIC LESIONS 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 10 mg/m3	DAY ON TEST																								* TOTALS
	0729	0628	0709	0703	0556	0771	0570	0793	0535	0771	0577	0792	0539	0777	0577	0792	0539	0777	0577	0792	0539	0777	0577	0792	
ANIMAL ID	002226	00087	00098	00090	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000
Necrosis				3	2	3	2		2																
Tension Lipidosis								1																	
Mesentery			+																						
Inflammation, Chronic Active																							+	+	
Arteriole, Inflammation, Chronic Active																									3
Fat, Necrosis																									1
Pancreas			+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
Lipomatosis																									1
Acinus, Hypertrophy																									1
Artery, Inflammation, Chronic Active																									2
Salivary Glands			+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
Infiltration Cellular, Lymphocyte																									1
Stomach, Forestomach			+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
Cyst, Squamous																									1
Hyperplasia, Squamous																									2
Inflammation, Chronic Active																									2
Stomach, Glandular			+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
Arteriole, Serosa, Inflammation, Chronic Active																									2
Tooth			+	+	+	+		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	47
Dysplasia			1	1	1	1		1					2	3		1	1	1	1		1		1	1	35
Inflammation, Chronic Active																									1

CARDIOVASCULAR SYSTEM

Blood Vessel	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49
--------------	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	----

* .. Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue
 M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically
 1-4 .. Lesion qualified as:
 1) Minimal 3) Moderate
 2) Mild 4) Marked

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

P09: NON-NEOPLASTIC LESIONS 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 10 mg/m3	DAY ON TEST	0729	0628	0709	0703	0526	0721	0529	0730	0536	0733	0733	0529	0722	0722	0334	0334	0507	0707	0623	0623	0703	0509	0709	* 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	

Spleen	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
Fibrosis																							3			1 3.0
Hematopoietic Cell Proliferation																										1 2.0
Lymphoid Follicle, Hyperplasia																2										2 2.5
Thymus	+	+	+	+	M	M	+	+	+	M	M	M	+	+	+	+	M	+	+	+	+	+	+	38		

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	0
Skin	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49	
Inflammation, Chronic Active				3																		1	2		4 2.3
Ulcer										2									4				3		4 3.0
Sebaceous Gland, Hyperplasia							2																		1 2.0

MUSCULOSKELETAL SYSTEM

Bone	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
Fibro-Osseous Lesion	2										2		1	1											7 1.3
Cranium, Fracture																									1 3.0
Cranium, Inflammation, Chronic Active							4																		2 3.5
Joint, Vertebra, Fracture																									1 1.0
Maxilla, Necrosis							3																		1 3.0
Skeletal Muscle																								3	
Infiltration Cellular, Lymphocyte																									1 1.0

NERVOUS SYSTEM

Brain	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
-------	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----------

* .. Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue
 M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically
 1-4 .. Lesion qualified as:
 1) Minimal 3) Moderate
 2) Mild 4) Marked

Experiment Number: 20515 - 04

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P09: NON-NEOPLASTIC LESIONS 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 10 mg/m3	DAY ON TEST																				* TOTALS					
	0729	0628	0709	0703	0556	0771	0572	0773	0573	0773	0573	0773	0573	0773	0573	0773	0573	0773	0573	0773						
ANIMAL ID	002226	002227	002228	002229	002230	002231	002232	002233	002234	002235	002236	002237	002238	002239	002240	002241	002242	002243	002244	002245						
Respiratory Epithelium, Hyperplasia		2	2		1	2	2	1	1		1	1		1	2	1	1		1	2	1	1	1	1	44	
Respiratory Epithelium, Metaplasia, Squamous Turbinate, Degeneration			3																						3	
Trachea	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50		
SPECIAL SENSES SYSTEM																										
Eye	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50		
Cornea, Inflammation, Chronic Active			4														2			3				4		
Lens, Degeneration			3																					1		
Harderian Gland	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50		
Cyst																								1		
Hyperplasia																				2				1		
URINARY SYSTEM																										
Kidney	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50		
Cyst													X											2		
Infarct																				2				1		
Metaplasia, Osseous																	1							1		
Nephropathy	2	1	2	2	1	3	1	2	3	2	2	1	2	2	2	2	2	2	1	2	2	2	2	48		
Artery, Inflammation, Chronic Active																						2		3		
Capsule, Fibrosis																								1		
Capsule, Hemorrhage																			3					1		
Papilla, Necrosis																								1		
Pelvis, Inflammation, Suppurative																								1		
Urinary Bladder	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50		

* .. Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade
+ .. Tissue examined microscopically
X .. Lesion present
I .. Insufficient tissue
M .. Missing tissue
A .. Autolysis precludes evaluation
BLANK .. Not examined microscopically
1-4 .. Lesion qualified as:
1) Minimal 3) Moderate
2) Mild 4) Marked

Experiment Number: 20515 - 04

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P09: NON-NEOPLASTIC LESIONS 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 100 mg/m3	DAY ON TEST																								ANIMAL ID	males (cont...)
	0729	0687	0777	0777	0777	0677	0777	0777	0777	0777	0677	0777	0777	0777	0777	0777	0777	0777	0777	0777	0777	0777	0777	0777		
Olfactory Epithelium, Accumulation, Hyaline Droplet	2	3	1	3	3	3	2	3	3	3	3	3	3	2	2	3	3	3	3	3	3	2	3	3	2	
Olfactory Epithelium, Atrophy				1																			1			
Olfactory Epithelium, Metaplasia, Respiratory	1	2	1		2	2		2	2	1	2	2		2	2	2	1	1	2	1	2	1	1	2		
Respiratory Epithelium, Accumulation, Hyaline Droplet	1	3	3	3	3	3	2	3	3	3	3	3	2	2	3	3	3	3	3	3	3	2	3	3	2	
Respiratory Epithelium, Hyperplasia	2	2	1	2	1		2		1	1	1	2		2	1	2		2	2	2	2	2	2	2		
Respiratory Epithelium, Metaplasia, Squamous Turbinate, Atrophy																										
Trachea Ulcer	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
SPECIAL SENSES SYSTEM																										
Eye	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
Cornea, Hyperplasia, Squamous													1													
Cornea, Inflammation, Chronic Active																				1		2				
Lens, Degeneration																				1						
Harderian Gland Hyperplasia	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
													3													
URINARY SYSTEM																										
Kidney Cyst	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
Infarct											X	X										X				
Nephropathy	1	2	2	3	2	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	2	2		
Ureter																										

* .. Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade
+ .. Tissue examined microscopically
X .. Lesion present
I .. Insufficient tissue

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

1-4 .. Lesion qualified as:
1) Minimal 3) Moderate
2) Mild 4) Marked

Experiment Number: 20515 - 04

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P09: NON-NEOPLASTIC LESIONS 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 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	00662	00662	00662	00662	00662	00662	00662	00662	00662	00662	00662	00662	00662	00662	00662	00662	00662	00662	00662	00662		
Tension Lipidosis																						7 1.4	
Mesentery																							4
Artery, Inflammation, Chronic Active																							1 3.0
Fat, Necrosis																							3 1.3
Pancreas																							50
Necrosis																							1 2.0
Salivary Glands																							50
Stomach, Forestomach																							50
Hyperplasia, Squamous																							3 3.0
Stomach, Glandular																							50
Inflammation, Chronic Active																							2 2.0
Ulcer																							1 3.0
Glands, Mineralization																							1 1.0
Tooth																							50
Dysplasia																							40 1.8
Inflammation, Chronic Active																							5 2.6

CARDIOVASCULAR SYSTEM

Blood Vessel																							48
Heart																							50
Cardiomyopathy																							2 2.0
Inflammation, Chronic Active																							1 3.0
Thrombosis																							2 2.5

* .. Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade

+ .. Tissue examined microscopically

X .. Lesion present

I .. Insufficient tissue

M .. Missing tissue

A .. Autolysis precludes evaluation

BLANK .. Not examined microscopically

1-4 .. Lesion qualified as:

1) Minimal 3) Moderate

2) Mild 4) Marked

Experiment Number: 20515 - 04

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P09: NON-NEOPLASTIC LESIONS 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 100 mg/m3	DAY ON TEST																				* TOTALS								
	0730	0736	0752	0756	0773	0773	0776	0776	0766	0777	0777	0777	0777	0777	0777	0777	0777	0777	0777	0777			0777						
ANIMAL ID	00626	00666	00666	00666	00666	00666	00666	00666	00666	00666	00666	00666	00666	00666	00666	00666	00666	00666	00666	00666	00666								
Olfactory Epithelium, Accumulation, Hyaline Droplet	3	2	3	3	3	3	3	3	2	3	2	2	2	2	2	2	3	2	2	3	3	3	2	3	49	2.6			
Olfactory Epithelium, Atrophy		1																		1					4	1.0			
Olfactory Epithelium, Metaplasia, Respiratory	2	1	1	1		1			2	2	2	1				1	2			1	1	1		2	37	1.5			
Respiratory Epithelium, Accumulation, Hyaline Droplet	3	2	3	3	3	3	3	3	2	3	2	2	2	2	2	2	3	2	2	3	1	3	3	2	3	50	2.6		
Respiratory Epithelium, Hyperplasia	1	2	1	1	2	1	1		2	1		2	1		2	2	1	1	1	2	1		1	2	2	41	1.6		
Respiratory Epithelium, Metaplasia, Squamous Turbinate, Atrophy		1																								1	1.0		
		2																								1	2.0		
Trachea	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50			
Ulcer								X																			1		
SPECIAL SENSES SYSTEM																													
Eye	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50		
Cornea, Hyperplasia, Squamous																												1	1.0
Cornea, Inflammation, Chronic Active																												2	1.5
Lens, Degeneration																												1	1.0
Harderian Gland	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50		
Hyperplasia																												2	3.0
URINARY SYSTEM																													
Kidney	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50		
Cyst								X													X							5	
Infarct																												2	2.0
Nephropathy	3	2		1	3		2	2	1	2	3	2	2	2	2	2	4	2	2	3	2	2	1	2	2	48	2.1		
Ureter																												1	

* .. Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade

+ .. Tissue examined microscopically

X .. Lesion present

I .. Insufficient tissue

M .. Missing tissue

A .. Autolysis precludes evaluation

BLANK .. Not examined microscopically

1-4 .. Lesion qualified as:

1) Minimal 3) Moderate

2) Mild 4) Marked

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

P09: NON-NEOPLASTIC LESIONS 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	0 7 3 2	0 7 3 1	0 7 3 3	0 7 3 3	0 7 3 2	0 7 3 2	0 6 7 3	0 6 7 7	0 7 3 4	0 7 3 3	0 7 6 5	0 7 6 4	0 7 7 3	0 7 6 3	0 7 7 8	0 7 6 3	0 7 7 9	0 7 7 3	0 7 7 3	0 7 7 3	0 7 7 3	0 7 5 2	0 7 7 3	females (cont...)
	ANIMAL ID	0 0 1 0 1	0 0 0 1 2	0 0 0 0 3	0 0 0 0 4	0 0 0 0 5	0 0 0 0 6	0 0 0 0 7	0 0 0 0 8	0 0 0 0 9	0 0 0 0 0	0 0 0 0 1	0 0 0 0 2	0 0 0 0 3	0 0 0 0 4	0 0 0 0 5	0 0 0 0 6	0 0 0 0 7	0 0 0 0 8	0 0 0 0 9	0 0 0 0 0	0 0 0 0 1	0 0 0 0 2	0 0 0 0 3	

ALIMENTARY SYSTEM

Esophagus	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Gallbladder	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	M	+	+	M	+	+	+	
Intestine Large, Cecum	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Intestine Large, Colon	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	A	+	+	+	+	+	+	
Intestine Large, Rectum	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Intestine Small, Duodenum	+	+	+	+	+	+	+	+	+	+	+	+	A	+	+	+	+	A	+	+	+	+	+	
Intestine Small, Ileum	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	A	+	+	+	+	+	
Intestine Small, Jejunum	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	A	+	+	+	+	+	
Liver	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Basophilic Focus																								
Clear Cell Focus																								
Eosinophilic Focus			X											X					X	X	X			
Fatty Change													2						2					
Mixed Cell Focus					X																			
Necrosis								3																
Tension Lipidosis													1						2			1	X	
Vacuolization Cytoplasmic																						1		
Mesentery							+							+	+					+	+	+		
Angiectasis																								
Cyst																							3	

* .. Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue
 M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically
 1-4 .. Lesion qualified as:
 1) Minimal 3) Moderate
 2) Mild 4) Marked

Experiment Number: 20515 - 04

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P09: NON-NEOPLASTIC LESIONS 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 Control	DAY ON TEST																				ANIMAL ID	females (cont...)								
	0 7 3 2	0 7 3 1	0 7 3 3	0 7 3 3	0 7 3 2	0 7 3 2	0 6 1 3	0 6 7 7	0 6 3 2	0 7 4 5	0 3 3 3	0 7 4 5	0 7 3 5	0 6 0 5	0 5 4 9	0 7 3 3	0 7 3 2	0 6 8 3	0 7 3 1	0 1 9 4			0 7 3 2	0 7 3 3	0 7 3 2	0 5 2 7	0 7 3 2			
Bronchiole, Hyperplasia	1														1				1											
Interstitial, Inflammation, Chronic Active	2																													
Perivascular, Inflammation, Chronic Active											3																			
Nose	+																													
Inflammation, Chronic Active											2										1									
Necrosis											1																			
Olfactory Epithelium, Accumulation, Hyaline Droplet	1		1		2		2												1		1		2		2		2		2	
Olfactory Epithelium, Atrophy											1																			
Olfactory Epithelium, Metaplasia, Respiratory											1										1									
Respiratory Epithelium, Accumulation, Hyaline Droplet	1		1		2		1		2		1		1		1		2		1		1		2		2		2			
Respiratory Epithelium, Hyperplasia	1		2		1		2		2		2		1		1		2		1		1		1		2		1		2	
Trachea	+																													
SPECIAL SENSES SYSTEM																														
Eye	+																													
Lens, Degeneration											1										1									
Harderian Gland	+																													
Atrophy											1																			
Hyperplasia											4										2									
URINARY SYSTEM																														
Kidney	+																													
Accumulation, Hyaline Droplet											2																			
Infarct																														

* .. Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade

+ .. Tissue examined microscopically

X .. Lesion present

I .. Insufficient tissue

M .. Missing tissue

A .. Autolysis precludes evaluation

BLANK .. Not examined microscopically

1-4 .. Lesion qualified as:

1) Minimal 3) Moderate

2) Mild 4) Marked

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

P09: NON-NEOPLASTIC LESIONS 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	0736	0738	0739	0741	0742	0743	0744	0745	0746	0747	0748	0749	0750	0751	0752	0753	0754	0755	0756	0757	0758	0759	0760			
Control	ANIMAL ID																										
	001	002	003	004	005	006	007	008	009	010	011	012	013	014	015	016	017	018	019	020	021	022	023	024			
Inflammation, Chronic Active																									2	1	2.0
Fat, Necrosis				2		2				2		1					1		1	1						11	1.5
Pancreas	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50			
Fibrosis												4													1	4.0	
Inflammation, Chronic Active																									1	2.0	
Acinus, Atrophy																									1	3.0	
Salivary Glands	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50			
Stomach, Forestomach	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50			
Fibrosis																									1	1.0	
Hyperplasia, Squamous																									1	4.0	
Stomach, Glandular	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50			
Degeneration, Hyaline																									1	1.0	
Inflammation, Chronic Active																									1	1.0	
Tooth																									1		
Dysplasia																									3	3.0	
CARDIOVASCULAR SYSTEM																											
Blood Vessel	+	+	+	+	+	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	+	+	+	46			
Aorta, Embolus Bacterial																									1	3.0	
Heart	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50			
Cardiomyopathy																									1	2.0	
Necrosis																									1	2.0	
Artery, Inflammation, Chronic Active																									3	3.0	

* .. Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue
 M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically
 1-4 .. Lesion qualified as:
 1) Minimal 3) Moderate
 2) Mild 4) Marked

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

P09: NON-NEOPLASTIC LESIONS 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	0736	0737	0738	0739	0740	0741	0742	0743	0744	0745	0746	0747	0748	0749	0750	0751	0752	0753	0754	0755	0756	0757	0758		0759
Control	001	002	003	004	005	006	007	008	009	010	011	012	013	014	015	016	017	018	019	020	021	022	023	024	025	026

Capillary, Hyperplasia

1 1.0

ENDOCRINE SYSTEM

Adrenal Cortex	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49
Angiectasis																											1 2.0
Hyperplasia	1		2			2			1				1			1				1							10 1.3
Vacuolization Cytoplasmic																											2 2.5
Adrenal Medulla	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49
Hyperplasia							2																				2 1.5
Islets, Pancreatic	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
Parathyroid Gland	M	+	M	+	M	+	M	+	M	+	M	+	+	M	+	+	M	+	M	M	M	+	+	M	+	26	
Hyperplasia																											1 4.0
Pituitary Gland	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
Angiectasis																											2 2.5
Pars Distalis, Hyperplasia	2								3					1				1			1		3				17 1.9
Thyroid Gland	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
C-cell, Hyperplasia			3																								1 3.0
Follicular Cell, Hyperplasia																											1 2.0

GENERAL BODY SYSTEM

Tissue NOS																											+	3
Mediastinum, Infiltration Cellular, Lymphocyte																											3	1 3.0
Mediastinum, Thrombosis																												1 1.0

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

1-4 .. Lesion qualified as:
 1) Minimal 3) Moderate
 2) Mild 4) Marked

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

P09: NON-NEOPLASTIC LESIONS 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 Control	DAY ON TEST																								* TOTALS				
	0 7 3 1	0 6 8 6	0 7 3 3	0 7 3 1	0 7 3 2	0 7 3 2	0 7 3 3	0 7 3 2	0 7 3 1	0 7 3 2	0 7 3 3	0 7 3 2	0 7 3 2	0 7 3 1	0 7 3 1	0 7 3 2	0 7 3 2	0 7 3 3	0 7 3 2	0 7 3 3	0 7 3 1	0 7 3 1	0 7 3 2	0 7 3 0		0 7 3 2			
	ANIMAL ID																												
	0 0 1 2 6	0 0 1 2 7	0 0 1 2 8	0 0 1 2 9	0 0 1 3 0	0 0 1 3 1	0 0 1 3 2	0 0 1 3 3	0 0 1 3 4	0 0 1 3 5	0 0 1 3 6	0 0 1 3 7	0 0 1 3 8	0 0 1 3 9	0 0 1 4 0	0 0 1 4 1	0 0 1 4 2	0 0 1 4 3	0 0 1 4 4	0 0 1 4 5	0 0 1 4 6	0 0 1 4 7	0 0 1 4 8	0 0 1 4 9	0 0 1 5 0				
Iliac, Ectasia																											1	4.0	
Iliac, Hyperplasia, Lymphoid														1														1	1.0
Lumbar, Ectasia																												1	1.0
Pancreatic, Inflammation, Chronic Active													4															1	4.0
Renal, Ectasia																												1	4.0
Lymph Node, Bronchial	+	+	M	+	M	+	+	M	+	+	+	M	M	M	M	M	+	M	M	+	M	M	+	+	+		26		
Lymph Node, Mandibular	+	+	+	+	M	+	+	M	M	M	+	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+		41	
Lymph Node, Mediastinal	M	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		43	
Lymph Node, Mesenteric Infiltration Cellular, Histiocyte	+	+	+	+	+	M	+	+	+	+	+	M	+	+	+	+	+	+	+	+	+	+	+	+	+	+		48	1 2.0
Spleen Hematopoietic Cell Proliferation	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		50	4 2.3
Thymus Atrophy Hyperplasia, Lymphoid	+	+	+	+	+	+	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	+	+	+	+	M	+	44	2 1.5 1 3.0
INTEGUMENTARY SYSTEM																													
Mammary Gland Hyperplasia	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		50	2 1.0
Skin Ulcer Epidermis, Hyperplasia	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		50	1 3.0 1 2.0

* .. Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue
 M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically
 1-4 .. Lesion qualified as:
 1) Minimal 3) Moderate
 2) Mild 4) Marked

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

P09: NON-NEOPLASTIC LESIONS 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 Control	DAY ON TEST																				* TOTALS					
	0731	0731	0731	0731	0731	0731	0731	0731	0731	0731	0731	0731	0731	0731	0731	0731	0731	0731	0731	0731		0731	0731			
ANIMAL ID	00126	00127	00128	00129	00130	00131	00132	00133	00134	00135	00136	00137	00138	00139	00140	00141	00142	00143	00144	00145	00146	00147	00148	00149	00150	
Bronchiole, Hyperplasia	1						1																			7 1.0
Interstitial, Inflammation, Chronic Active																										1 2.0
Perivascular, Inflammation, Chronic Active																			1		1					4 1.8
Nose	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
Inflammation, Chronic Active						1										1								1	1	9 1.1
Necrosis																										1 1.0
Olfactory Epithelium, Accumulation, Hyaline Droplet	2		2	2	2	2					2		2	2					2		2	2			25 1.8	
Olfactory Epithelium, Atrophy																										1 1.0
Olfactory Epithelium, Metaplasia, Respiratory				1																						3 1.0
Respiratory Epithelium, Accumulation, Hyaline Droplet	2	1	2	2	2	2	1		2		2		2	2	1		1	1		2		2	2		34 1.6	
Respiratory Epithelium, Hyperplasia	1	2	2	2	2	2		2	1	1	1	1	2	2	1	1	1	1	1		1	2	1	1	39 1.4	
Trachea	+	M	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49	
SPECIAL SENSES SYSTEM																										
Eye	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
Lens, Degeneration																										2 1.0
Harderian Gland	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
Atrophy																										1 1.0
Hyperplasia																										2 3.0
URINARY SYSTEM																										
Kidney	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
Accumulation, Hyaline Droplet																										1 2.0
Infarct														2												1 2.0

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

1-4 .. Lesion qualified as:
 1) Minimal 3) Moderate
 2) Mild 4) Marked

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

P09: NON-NEOPLASTIC LESIONS 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	0731	0772	0772	0773	0773	0773	0773	0773	0773	0773	0773	0773	0773	0773	0773	0773	0773	0773	0773	0773	0773		
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		
	112	112	112	112	113	113	113	113	113	113	113	113	113	113	113	113	113	113	113	113	113	113	113	113		
	678	678	678	678	678	678	678	678	678	678	678	678	678	678	678	678	678	678	678	678	678	678	678	678		
Necrosis																									1 1.0	
Nephropathy	1		1	1	2	2	1	1	1	1	1	1	1	2	2	1	2	1	2	1	1	2	1	2	1	47 1.5
Glomerulus, Amyloid Deposition																										1 4.0
Urinary Bladder Angiectasis	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
														3												1 3.0

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

1-4 .. Lesion qualified as:
 1) Minimal 3) Moderate
 2) Mild 4) Marked

Experiment Number: 20515 - 04

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P09: NON-NEOPLASTIC LESIONS 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	0733	0583	0732	0655	0730	0751	0578	0753	0578	0634	0733	0773	0773	0771	0672	0572	0733	0731	0733	0733	0733	0732	0732	* TOTALS
	ANIMAL ID	00326	00327	00328	00329	00330	00331	00332	00333	00334	00335	00336	00337	00338	00339	00340	00341	00342	00343	00344	00345	00346	00347	00348	

ALIMENTARY SYSTEM

Esophagus	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
Gallbladder Epithelium, Hyperplasia	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49	1 2.0
Intestine Large, Cecum Hyperplasia	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	1 3.0
Intestine Large, Colon	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
Intestine Large, Rectum	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
Intestine Small, Duodenum	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
Intestine Small, Ileum	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
Intestine Small, Jejunum	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
Liver	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
Angiectasis																									2	1.0
Basophilic Focus					X							X											X		5	
Cyst																									1	
Degeneration																									1	3.0
Eosinophilic Focus																X									1	
Fatty Change																									2	1.5
Hyperplasia																									1	1.0
Infiltration Cellular, Lymphocyte																									1	1.0
Infiltration Cellular, Mixed Cell																									1	3.0
Mixed Cell Focus																									4	

* .. Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade

+ .. Tissue examined microscopically

X .. Lesion present

I .. Insufficient tissue

M .. Missing tissue

A .. Autolysis precludes evaluation

BLANK .. Not examined microscopically

1-4 .. Lesion qualified as:

1) Minimal 3) Moderate

2) Mild 4) Marked

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

P09: NON-NEOPLASTIC LESIONS 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 10 mg/m3	DAY ON TEST																								* TOTALS	
	0733	0583	0732	0655	0730	0770	0579	0753	0573	0783	0038	0034	0073	0077	0073	0071	0062	0075	0073	0073	0073	0073	0073	0072		
ANIMAL ID	00326	00337	00308	00309	00300	00300	00300	00300	00300	00300	00300	00300	00300	00300	00300	00300	00300	00300	00300	00300	00300	00300	00300	00300		
Renal, Hyperplasia, Lymphoid																								2 2.5		
Lymph Node, Bronchial	M	M	+	+	M	+	+	+	M	M	+	M	+	+	+	M	+	+	M	+	M	+	+	M	27	
Lymph Node, Mandibular	+	+	M	+	+	+	M	M	M	M	+	+	+	+	+	+	+	+	+	+	+	+	+	+	42	
Lymph Node, Mediastinal Hematopoietic Cell Proliferation Hyperplasia, Lymphoid	+	+	+	+	+	M	+	+	+	+	M	+	+	+	M	+	+	+	+	+	+	+	+	+	46	1 1.0 1 3.0
Lymph Node, Mesenteric Angiectasis Hematopoietic Cell Proliferation Hemorrhage	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	1 3.0 1 1.0 2 2.0
Spleen Hematopoietic Cell Proliferation Hyperplasia, Lymphoid	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	3 1.3 1 3.0
Thymus	+	+	+	+	+	+	M	+	M	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	46	
INTEGUMENTARY SYSTEM																										
Mammary Gland	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
Skin	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
MUSCULOSKELETAL SYSTEM																										
Bone Fibro-Osseous Lesion	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	1 25 1.5

* .. Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue
 M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically
 1-4 .. Lesion qualified as:
 1) Minimal 3) Moderate
 2) Mild 4) Marked

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

P09: NON-NEOPLASTIC LESIONS 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	0758	0773	0765	0777	0757	0777	0757	0777	0758	0773	0766	0777	0777	0767	0777	0757	0773	0777	0777		0777
10 mg/m3	0032	0037	0032	0035	0032	0031	0038	0033	0038	0034	0033	0033	0033	0031	0032	0038	0032	0032	0031	0033	0033	3
	0036	0037	0038	0039	0030	0031	0032	0033	0034	0035	0036	0037	0038	0039	0030	0031	0032	0033	0034	0035	0036	1 1.0

Skeletal Muscle Infiltration Cellular, Lymphocyte + 3 1 1.0

NERVOUS SYSTEM

Brain Compression + 50 1 2.0

Peripheral Nerve Degeneration Infiltration Cellular, Polymorphonuclear + 2 2 3 1 2.0 1 2.0

Spinal Cord Infiltration Cellular, Lymphocyte + 3 1 1.0

RESPIRATORY SYSTEM

Larynx Metaplasia, Squamous + 49 49 1.1

Lung Hemorrhage Infiltration Cellular, Histiocyte Infiltration Cellular, Lymphocyte Metaplasia, Osseous Alveolar Epithelium, Hyperplasia Bronchiole, Hyperplasia Perivascular, Inflammation, Chronic Active + 50 1 2.0 1 1.0 1 1.0 1 1.0 2 2.0 4 1.0 3 1.7

Nose Necrosis + + + + + + A + + + + + + + + + + + + + + + + 49 1 1.0

* .. Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade
 + .. Tissue examined microscopically M .. Missing tissue 1-4 .. Lesion qualified as:
 X .. Lesion present A .. Autolysis precludes evaluation 1) Minimal 3) Moderate
 I .. Insufficient tissue BLANK .. Not examined microscopically 2) Mild 4) Marked

Experiment Number: 20515 - 04

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P09: NON-NEOPLASTIC LESIONS 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 30 mg/m3	DAY ON TEST																								ANIMAL ID	females (cont...)	
	0732	0733	0734	0735	0736	0737	0738	0739	0740	0741	0742	0743	0744	0745	0746	0747	0748	0749	0750	0751	0752	0753	0754	0755			
Olfactory Epithelium, Accumulation, Hyaline Droplet	2	3	2	3	2	3	3	2	3	2	3	2	2	3	2	3	3	3	3	3	3	2	2	2			
Olfactory Epithelium, Metaplasia, Respiratory Epithelium, Accumulation, Hyaline Droplet	2	3	2	3	2	3	3	2	3	2	3	2	1	3	2	3	3	3	3	3	3	2	2	2			
Respiratory Epithelium, Hyperplasia	2			1		2	2	1	2				1		1	2	1	1	1	1	2	2	1	2	1	2	
Trachea	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
SPECIAL SENSES SYSTEM																											
Eye	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
Atrophy																										4	
Lens, Degeneration																										1	
Harderian Gland	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
Atrophy																										2	
Hyperplasia																										1	
Inflammation, Suppurative																										1	
Inflammation, Chronic Active				1																							
URINARY SYSTEM																											
Kidney	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
Infarct	2																									2	
Metaplasia, Osseous																										1	
Nephropathy	2	1	3	1	2	2	2	2	1	2	1	1	2	1	1	2	2	1	1	1	2	1	1	4	2		
Ureter																										+	
Urinary Bladder	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		

* .. Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade

+ .. Tissue examined microscopically

X .. Lesion present

I .. Insufficient tissue

M .. Missing tissue

A .. Autolysis precludes evaluation

BLANK .. Not examined microscopically

1-4 .. Lesion qualified as:

1) Minimal 3) Moderate

2) Mild 4) Marked

Experiment Number: 20515 - 04

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P09: NON-NEOPLASTIC LESIONS 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 30 mg/m3	DAY ON TEST																				* TOTALS			
	0 7 3 3	0 7 3 1	0 6 8 1	0 7 3 1	0 7 3 2	0 7 3 2	0 7 0 5	0 6 7 4	0 6 4 3	0 7 3 1	0 7 3 3	0 7 3 3	0 7 3 2	0 7 3 1	0 7 3 0	0 7 3 2	0 7 3 3	0 7 3 3	0 5 9 5	0 7 3 3		0 7 3 1	0 5 3 0	
ANIMAL ID	0 0 5 2 6	0 0 5 2 7	0 0 5 2 8	0 0 5 2 9	0 0 5 3 0	0 0 5 3 1	0 0 5 3 2	0 0 5 3 3	0 0 5 3 4	0 0 5 3 5	0 0 5 3 6	0 0 5 3 7	0 0 5 3 8	0 0 5 3 9	0 0 5 4 0	0 0 5 4 1	0 0 5 4 2	0 0 5 4 3	0 0 5 4 4	0 0 5 4 5	0 0 5 4 6	0 0 5 4 7	0 0 5 4 8	0 0 5 4 9
Centrilobular, Hypertrophy																					3	1 3.0		
Mesentery																						21		
Fibrosis																						1 2.0		
Inflammation, Suppurative																						1 3.0		
Inflammation, Chronic Active																						1 2.0		
Necrosis																						1 2.0		
Arteriole, Inflammation, Chronic Active																						1 3.0		
Fat, Cyst																					1	1 1.0		
Fat, Necrosis																					1	7 1.6		
Pancreas																						50		
Acinus, Atrophy																						1 2.0		
Acinus, Hypertrophy																						1 1.0		
Salivary Glands																						50		
Stomach, Forestomach																						50		
Hyperplasia, Squamous																						2 2.5		
Ulcer																					2	1 2.0		
Arteriole, Inflammation, Chronic Active																						1 1.0		
Stomach, Glandular																						50		
Fibrosis																						1 1.0		
Arteriole, Inflammation, Chronic Active																						1 3.0		
Glands, Mineralization																					1	2 1.0		
Tooth																						2		
Dysplasia																						2 2.0		

* .. Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade

+ .. Tissue examined microscopically

X .. Lesion present

I .. Insufficient tissue

M .. Missing tissue

A .. Autolysis precludes evaluation

BLANK .. Not examined microscopically

1-4 .. Lesion qualified as:

1) Minimal 3) Moderate

2) Mild 4) Marked

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

P09: NON-NEOPLASTIC LESIONS 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 30 mg/m3	DAY ON TEST																				* TOTALS					
	0733	0733	0681	0771	0771	0771	0666	0666	0777	0777	0777	0777	0777	0777	0777	0777	0777	0777	0777	0577		0777	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	
Necrosis																									1 3.0	
Lymph Node, Mandibular Necrosis	+	+	+	+	+	+	+	+	+	M	+	+	+	M	M	+	+	+	+	+	+	M	M	+	43 1 2.0	
Lymph Node, Mediastinal	+	M	+	+	+	+	+	+	+	+	+	M	+	+	M	+	+	M	M	+	+	+	+	M	40	
Lymph Node, Mesenteric Angiectasis	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49	
Ectasia																									2 3.0	
Hyperplasia, Lymphoid																									2 2.0	
Spleen	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
Hematopoietic Cell Proliferation																									3 2.0	
Hyperplasia, Lymphoid																									1 2.0	
Lymphoid Follicle, Hyperplasia																									1 3.0	
Thymus	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	45	
Angiectasis																									1 4.0	
INTEGUMENTARY SYSTEM																										
Mammary Gland	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
Skin	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
Inflammation, Chronic Active																									1 2.0	
Ulcer																									1 3.0	
Subcutaneous Tissue, Fibrosis																									1 1.0	
MUSCULOSKELETAL SYSTEM																										

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

1-4 .. Lesion qualified as:
 1) Minimal 3) Moderate
 2) Mild 4) Marked

Experiment Number: 20515 - 04

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P09: NON-NEOPLASTIC LESIONS 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 30 mg/m3	DAY ON TEST																								* TOTALS		
	0733	0733	0681	0733	0733	0733	0733	0667	0667	0733	0733	0733	0733	0733	0733	0733	0733	0733	0733	0733	0577	0733	0733	0733			
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			
Olfactory Epithelium, Accumulation, Hyaline Droplet	3	3	2	3	2	2	3	3	3	3	2	3	3	2	3	3	2	3	3	2	3	3	3	2	50	2.6	
Olfactory Epithelium, Metaplasia, Respiratory			2	3	2					1		2	2	1											12	1.6	
Respiratory Epithelium, Accumulation, Hyaline Droplet	3	3	2	3	2	2	3	3	3	3	2	3	3	2	3	3	2	3	3	2	1	3	3	2	50	2.6	
Respiratory Epithelium, Hyperplasia	1	2		2	2	2	2		2	2		2	2		2	2	1	1	1	1	1	2	1	2	39	1.6	
Trachea	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50		
SPECIAL SENSES SYSTEM																											
Eye	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
Atrophy										4																2	4.0
Lens, Degeneration																					1					2	1.0
Harderian Gland	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
Atrophy																										1	2.0
Hyperplasia								3	3				1									3				6	2.2
Inflammation, Suppurative																										1	1.0
Inflammation, Chronic Active																										1	1.0
URINARY SYSTEM																											
Kidney	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
Infarct													2													4	2.0
Metaplasia, Osseous													2													2	1.5
Nephropathy	1	1	1	1	1	1	3	2	2	2	1	1	1	2	1	3	2	1		2	1	2	1	1	1	49	1.6
Ureter																										1	
Urinary Bladder	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	

* .. Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade

+ .. Tissue examined microscopically

X .. Lesion present

I .. Insufficient tissue

M .. Missing tissue

A .. Autolysis precludes evaluation

BLANK .. Not examined microscopically

1-4 .. Lesion qualified as:

1) Minimal 3) Moderate

2) Mild 4) Marked

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

P09: NON-NEOPLASTIC LESIONS 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	0733	0733	0733	0593	0733	0743	0253	0564	0654	0573	0773	0773	0773	0773	0773	0673	0773	0773	0573	0773	0753	0773	0573	females (cont...)
	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	

ALIMENTARY SYSTEM

Esophagus	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Gallbladder	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	M	+	M	
Intestine Large, Cecum	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Intestine Large, Colon	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Intestine Large, Rectum Inflammation, Chronic Active	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Intestine Small, Duodenum	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Intestine Small, Ileum	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Intestine Small, Jejunum	+	+	+	+	+	A	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Liver	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Amyloid Deposition																								
Angiectasis																								
Basophilic Focus																								
Cyst																								
Eosinophilic Focus		X																						
Fatty Change							3																	
Infiltration Cellular, Lymphocyte																								
Necrosis							3						2											
Tension Lipidosis		X											X									2		
Mesentery		+	+			+	+	M			+											+		+

* .. Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue
 M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically
 1-4 .. Lesion qualified as:
 1) Minimal 3) Moderate
 2) Mild 4) Marked

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

P09: NON-NEOPLASTIC LESIONS 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 100 mg/m3	DAY ON TEST																								* TOTALS
	0732	0733	0732	0731	0736	0736	0736	0737	0737	0737	0737	0737	0737	0737	0737	0737	0737	0736	0737	0737	0736	0737	0737	0736	
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
Fat, Necrosis																		2	2	1	2				
Vein, Inflammation, Chronic Active		3																							
Pancreas	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
Inflammation, Chronic Active																						3			1 3.0
Lipomatosis																									1 1.0
Acinus, Atrophy																						3	2		2 2.5
Acinus, Hyperplasia																									1 2.0
Acinus, Hypertrophy										1															1 1.0
Salivary Glands	M	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49
Stomach, Forestomach	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
Hyperplasia, Squamous					4																				2 3.5
Inflammation, Chronic Active						2																			1 2.0
Ulcer																									1 1.0
Stomach, Glandular	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
Ulcer					1																				1 1.0
Glands, Mineralization																									1 1.0
Tooth																									4
Dysplasia																									2 3.0
Inflammation, Chronic Active													2												2 2.0

CARDIOVASCULAR SYSTEM

Blood Vessel	+	+	M	I		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	44
Aorta, Embolus Bacterial																									1 3.0
Aorta, Inflammation, Suppurative																									1 3.0

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

1-4 .. Lesion qualified as:
 1) Minimal 3) Moderate
 2) Mild 4) Marked

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

P09: NON-NEOPLASTIC LESIONS 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 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		0733	0739	0733	0732	0732	0738	0733	0731
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	
Heart	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
Cardiomyopathy																												5	2.0
Congestion																												1	2.0
Necrosis																												1	3.0
ENDOCRINE SYSTEM																													
Adrenal Cortex	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
Atrophy							2																					1	2.0
Hyperplasia												1		1									1					6	1.2
Vacuolization Cytoplasmic																	4											2	4.0
Adrenal Medulla	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
Hyperplasia			4																									4	1.8
Islets, Pancreatic	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49	
Parathyroid Gland	M	+	+	M	+	+	+	+	M	M	M	M	M	M	+	+	M	+	M	M	M	+	+	M	M		25		
Pituitary Gland	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
Angiectasis											3																	4	3.0
Pars Distalis, Cyst																												1	2.0
Pars Distalis, Hyperplasia	2			1							3	2		1		2				1		1	3	3			24	2.3	
Pars Intermedia, Pars Nervosa, Cyst				2																								1	2.0
Thyroid Gland	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
Inflammation, Chronic Active							2																		1			2	1.5
Follicular Cell, Hyperplasia											2													2				3	2.3

GENERAL BODY SYSTEM

* .. Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue
 M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically
 1-4 .. Lesion qualified as:
 1) Minimal 3) Moderate
 2) Mild 4) Marked

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

P09: NON-NEOPLASTIC LESIONS 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 100 mg/m3	DAY ON TEST																								* TOTALS	
	0732	0733	0732	0731	0738	0736	0736	0737	0737	0737	0737	0737	0737	0737	0737	0737	0737	0737	0737	0737	0737	0737	0737	0737		
ANIMAL ID	00726	00707	00700	00700	00707	00707	00707	00707	00707	00707	00707	00707	00707	00707	00707	00707	00707	00707	00707	00707	00707	00707	00707	00707		
Lymph Node, Bronchial Infiltration Cellular, Histiocyte	M	M	M	M	+	+	M	M	+	M	M	M	+	M	M	+	+	M	M	+	M	+	M	M	27	
																									1 2.0	
Lymph Node, Mandibular	M	+	+	M	+	+	+	M	+	+	+	+	M	+	+	M	+	M	M	+	+	M	M	+	M	35
Lymph Node, Mediastinal Hyperplasia, Lymphoid Infiltration Cellular, Mixed Cell	+	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	47	
																									2 2.0 1 3.0	
Lymph Node, Mesenteric Angiectasis	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49	
																									1 4.0	
Spleen Hematopoietic Cell Proliferation	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49	
Hyperplasia, Lymphoid																									2 2.5	
Infiltration Cellular, Mast Cell																									1 2.0 1 3.0	
Thymus Atrophy Necrosis	+	+	+	+	+	M	M	+	+	I	+	+	+	+	+	+	+	+	+	+	+	+	+	+	45	
																									1 3.0 1 3.0	
INTEGUMENTARY SYSTEM																										
Mammary Gland Hyperplasia	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
																									1 1.0	
Skin Infiltration Cellular, Mast Cell	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
Inflammation, Chronic Active																									1 1.0	
Ulcer																									2 2.5 3 3.3	

* .. Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade
 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue
 M .. Missing tissue
 A .. Autolysis precludes evaluation
 BLANK .. Not examined microscopically
 1-4 .. Lesion qualified as:
 1) Minimal 3) Moderate
 2) Mild 4) Marked

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

P09: NON-NEOPLASTIC LESIONS 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
	0732	0733	0732	0731	0736	0736	0736	0737	0737	0737	0737	0737	0737	0737	0737	0737	0737	0736	0737	0737	0736	0737	0737	0736	
100 mg/m3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ANIMAL ID	0726	0707	0700	0700	0700	0700	0707	0707	0707	0707	0707	0707	0707	0707	0707	0707	0707	0707	0707	0707	0707	0707	0707	0707	0707
	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

MUSCULOSKELETAL SYSTEM

Bone	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
Fibro-Osseous Lesion	2			1	1		2		2	1				2	1				1	1	2	2	2		23 1.5
Cranium, Inflammation, Chronic Active																									1 3.0
Femur, Tibia, Arthrosis													2												1 2.0
Pelvis, Degeneration																				2					1 2.0
Vertebra, Fracture																									1 4.0
Skeletal Muscle																									4
Degeneration																									1 2.0
Infiltration Cellular, Polymorphonuclear																									1 2.0

NERVOUS SYSTEM

Brain	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
Compression						3																			3 3.0
Meninges, Inflammation, Chronic Active																									1 1.0
Peripheral Nerve																									3
Degeneration																									1 2.0
Spinal Cord																									3

RESPIRATORY SYSTEM

Larynx	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
Inflammation, Chronic Active																									10 1.2
Metaplasia, Squamous	4	4	3	3	3	4	4	3	4	4	4	3	4	4	4	3	3	3	4	3	4	4	3	3	50 3.5
Necrosis															1										4 1.5

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

1-4 .. Lesion qualified as:
 1) Minimal 3) Moderate
 2) Mild 4) Marked

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

P09: NON-NEOPLASTIC LESIONS 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 100 mg/m3	DAY ON TEST		ANIMAL ID																				* TOTALS					
	0732	0733	0732	0731	0733	0738	0739	0733	0732	0732	0731	0732	0732	0733	0733	0733	0733	0733	0734	0731	0732	0739		0733	0732	0732	0738	0733
Harderian Gland	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
URINARY SYSTEM																												
Kidney	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
Infarct																											1	3.0
Inflammation, Suppurative																											1	2.0
Metaplasia, Osseous																											1	1.0
Nephropathy	4	1	1	1	2	3	2	1	2	1	1	1	2	2	1	1	1	1	1	1	1	1	2	1	2	1	47	1.4
Glomerulus, Amyloid Deposition																									2		1	2.0
Urinary Bladder	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50	

*** END OF REPORT ***

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

1-4 .. Lesion qualified as:
 1) Minimal 3) Moderate
 2) Mild 4) Marked