

Experiment Number: 60311 - 04
Test Type: 90-DAY
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: MICE/B6C3F1

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL
Cobalt
CAS Number: 7440-48-4

Date Report Requested: 08/16/2012
Time Report Requested: 09:00:49
First Dose M/F: 03/07/05 / 03/07/05
Lab: BNW

F2_M3

NTP Study Number: C60311
Lock Date: 11/29/2005
Cage Range: ALL
Date Range: ALL
Reasons For Removal: ALL
Removal Date Range: ALL
Treatment Groups: Include ALL
Study Gender: Both
TDMSE Version: 2.6.0.0_007
PWG Approval Date: NONE

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 First Dose M/F: 03/07/05 / 03/07/05
 Lab: BNW

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

ALIMENTARY SYSTEM

Esophagus	+	+	+	+	+	+	+	+	+	+		10
Gallbladder	M	+	+	+	+	+	+	+	+	+		9
Intestine Large, Cecum	+	+	+	+	+	+	+	+	+	+		10
Intestine Large, Colon	+	+	+	+	+	+	+	+	+	+		10
Intestine Large, Rectum	+	+	+	+	+	+	+	+	+	+		10
Intestine Small, Duodenum	+	+	+	+	+	+	+	+	+	+		10
Intestine Small, Ileum	+	+	+	+	+	+	+	+	+	+		10
Intestine Small, Jejunum	+	+	+	+	+	+	+	+	+	+		10
Liver	+	+	+	+	+	+	+	+	+	+		10
Pancreas	+	+	+	+	+	+	+	+	+	+		10
Salivary Glands	+	+	+	+	+	+	+	+	+	+		10
Stomach, Forestomach	+	+	+	+	+	+	+	+	+	+		10
Stomach, Glandular	+	+	+	+	+	+	+	+	+	+		10

CARDIOVASCULAR SYSTEM

Heart	+	+	+	+	+	+	+	+	+	+		10
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* .. 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
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 BLANK .. Not examined microscopically

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

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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	
control		9	9	9	9	9	9	9	9	9	
		5	5	5	5	5	5	5	5	5	
	ANIMAL ID	0	0	0	0	0	0	0	0	0	
		0	0	0	0	0	0	0	0	0	
		0	0	0	0	0	0	0	0	0	
		0	0	0	0	0	0	0	0	1	
		1	2	3	4	5	6	7	8	9	0
* TOTALS											

ENDOCRINE SYSTEM

Adrenal Cortex	+	+	+	+	+	+	+	+	+	+	10
Adrenal Medulla	+	+	+	+	+	+	+	+	+	+	10
Islets, Pancreatic	+	+	+	+	+	+	+	+	+	+	10
Parathyroid Gland	M	M	+	+	+	M	M	+	M	M	4
Pituitary Gland	+	+	+	+	+	+	+	+	+	+	10
Thyroid Gland	+	+	+	+	+	+	+	+	+	+	10

GENERAL BODY SYSTEM

NONE

GENITAL SYSTEM

Epididymis	+	+	+	+	+	+	+	+	+	+	10
Preputial Gland	+	+	+	+	+	+	+	+	+	+	10
Prostate	+	+	+	+	+	+	+	+	+	+	10
Seminal Vesicle	+	+	+	+	+	+	+	+	+	+	10
Testes	+	+	+	+	+	+	+	+	+	+	10
Germinal Epithelium, Degeneration					1					1	2 1.0

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 + .. Tissue examined microscopically
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Lab: BNW

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

HEMATOPOIETIC SYSTEM

Bone Marrow	+	+	+	+	+	+	+	+	+	10
Lymph Node, Bronchial	+	M	M	M	M	+	+	+	M	5
Lymph Node, Mandibular	M	M	M	+	+	M	M	M	+	4
Lymph Node, Mediastinal	+	M	M	M	M	M	M	M	M	1
Lymph Node, Mesenteric Lymphocyte, Necrosis	+	+	+	+	+	+	+	+	+	10 1 2.0
Spleen	+	+	+	+	+	+	+	+	+	10
Thymus	+	+	+	+	+	+	+	+	+	10

INTEGUMENTARY SYSTEM

Mammary Gland	M	M	M	M	M	M	M	M	M	0
Skin	+	+	+	+	+	+	+	+	+	10

MUSCULOSKELETAL SYSTEM

Bone	+	+	+	+	+	+	+	+	+	10
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NERVOUS SYSTEM

Brain	+	+	+	+	+	+	+	+	+	10
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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	
		9	9	9	9	9	9	9	9	9	
		5	5	5	5	5	5	5	5	5	
		5	5	5	5	5	5	5	5	5	
0.625 mg/m3	ANIMAL ID	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	
		0	0	0	0	0	0	0	0	0	1
		1	2	3	4	5	6	7	8	9	0
										* TOTALS	

ALIMENTARY SYSTEM

NONE

CARDIOVASCULAR SYSTEM

NONE

ENDOCRINE SYSTEM

NONE

GENERAL BODY SYSTEM

NONE

GENITAL SYSTEM

Epididymis	+	+	+	+	+	+	+	+	+	+
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10

Testes	+	+	+	+	+	+	+	+	+	+
--------	---	---	---	---	---	---	---	---	---	---

10

HEMATOPOIETIC SYSTEM

NONE

INTEGUMENTARY SYSTEM

NONE

MUSCULOSKELETAL SYSTEM

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Lab: BNW

B6C3F1 MICE MALE 0.625 mg/m3	DAY ON TEST	0	0	0	0	0	0	0	0	0	
		0	0	0	0	0	0	0	0	0	
		9	9	9	9	9	9	9	9	9	
		5	5	5	5	5	5	5	5	5	
	ANIMAL ID	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	
		0	0	0	0	0	0	0	0	1	
		1	2	3	4	5	6	7	8	9	
											* TOTALS

NONE

NERVOUS SYSTEM

NONE

RESPIRATORY SYSTEM

Larynx	+	+	+	+	+	+	+	+	+	+	10		
Metaplasia, Squamous	2	2	2	1	2	2	2	2	2	1		10	1.8
Lung	+	+	+	+	+	+	+	+	+	+	10		
Hemorrhage									1			1	1.0
Alveolus, Infiltration Cellular, Histiocyte	1	1	1	1	1	1	1	1	1	1		10	1.0
Bronchiole, Epithelium, Vacuolization Cytoplasmic	1	1	1	1	1	1	1	1	1	1		10	1.0
Nose	+	+	+	+	+	+	+	+	+	+	10		
Olfactory Epithelium, Degeneration		1					1					2	1.0

SPECIAL SENSES SYSTEM

NONE

URINARY SYSTEM

NONE

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

ALIMENTARY SYSTEM

NONE

CARDIOVASCULAR SYSTEM

NONE

ENDOCRINE SYSTEM

NONE

GENERAL BODY SYSTEM

NONE

GENITAL SYSTEM

Epididymis	+	+	+	+	+	+	+	+	+	+	10
Testes	+	+	+	+	+	+	+	+	+	+	10

HEMATOPOIETIC SYSTEM

NONE

INTEGUMENTARY SYSTEM

NONE

MUSCULOSKELETAL SYSTEM

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

NONE

NERVOUS SYSTEM

NONE

RESPIRATORY SYSTEM

Larynx	+	+	+	+	+	+	+	+	+	+	10
Metaplasia, Squamous	2	1	2	2	2	2	2	2	2	1	10 1.8
Lung	+	+	+	+	+	+	+	+	+	+	10
Alveolus, Infiltration Cellular, Histiocyte	1	1	1	1	1	1	1	1	1	1	10 1.0
Bronchiole, Epithelium, Vacuolization Cytoplasmic	1	1	1	1	1	1	1	1	1	1	10 1.0
Nose	+	+	+	+	+	+	+	+	+	+	10
Olfactory Epithelium, Degeneration	1	1	1	1	1	1	1	1	1	1	10 1.0
Olfactory Epithelium, Hyperplasia		1									1 1.0
Respiratory Epithelium, Degeneration	1	1				1	1		1	1	6 1.0
Respiratory Epithelium, Metaplasia, Squamous		1							1		2 1.0

SPECIAL SENSES SYSTEM

NONE

URINARY SYSTEM

NONE

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

ALIMENTARY SYSTEM

NONE

CARDIOVASCULAR SYSTEM

NONE

ENDOCRINE SYSTEM

NONE

GENERAL BODY SYSTEM

NONE

GENITAL SYSTEM

Epididymis	+	+	+	+	+	M	+	+	+	+	9
Testes	+	+	+	+	+	+	+	+	+	+	10

HEMATOPOIETIC SYSTEM

NONE

INTEGUMENTARY SYSTEM

NONE

MUSCULOSKELETAL SYSTEM

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

NONE

NERVOUS SYSTEM

NONE

RESPIRATORY SYSTEM

Larynx	+	+	+	+	+	+	+	+	+	+	10
Metaplasia, Squamous	2	2	2	2	2	1	2	2	2	2	10 1.9
Lung	+	+	+	+	+	+	+	+	+	+	10
Hemorrhage	1										1 1.0
Alveolus, Infiltration Cellular, Histiocyte	1	1	1	1	1	1	1	1	1	1	10 1.0
Bronchiole, Epithelium, Hyperplasia	1	1	1	1	1	1	1	1	1	1	10 1.0
Bronchiole, Epithelium, Vacuolization Cytoplasmic	1	2	2	1	1	2	1	2	2	1	10 1.5
Nose	+	+	+	+	+	+	+	+	+	+	10
Olfactory Epithelium, Degeneration	1	1	1	1	1	1	1	1	1	1	10 1.0
Olfactory Epithelium, Hyperplasia	1			1		1			1	1	5 1.0
Respiratory Epithelium, Degeneration	1	1	1		1	1	1	1	1	1	9 1.0
Respiratory Epithelium, Metaplasia, Squamous	1	1						1	1	1	5 1.0

SPECIAL SENSES SYSTEM

NONE

URINARY SYSTEM

NONE

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

ALIMENTARY SYSTEM

NONE

CARDIOVASCULAR SYSTEM

NONE

ENDOCRINE SYSTEM

NONE

GENERAL BODY SYSTEM

NONE

GENITAL SYSTEM

Epididymis	+	+	+	+	+	+	+	+	+	+	10
Testes	+	+	+	+	+	+	+	+	+	+	10
Germinal Epithelium, Degeneration										1	1 1.0

HEMATOPOIETIC SYSTEM

NONE

INTEGUMENTARY SYSTEM

NONE

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+ .. Tissue examined microscopically 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	
		9	9	9	9	9	9	9	9	9	
		5	5	5	5	5	5	5	5	5	
		5	5	5	5	5	5	5	5	5	
5 mg/m3	ANIMAL ID	0	0	0	0	0	0	0	0	0	
		0	0	0	0	0	0	0	0	0	
		8	8	8	8	8	8	8	8	8	
		0	0	0	0	0	0	0	0	0	1
		1	2	3	4	5	6	7	8	9	0
* TOTALS											

MUSCULOSKELETAL SYSTEM

NONE

NERVOUS SYSTEM

NONE

RESPIRATORY SYSTEM

Larynx	+	+	+	+	+	+	+	+	+	+	10
Metaplasia, Squamous	2	2	2	2	2	2	2	1	2	2	10 1.9
Lung	+	+	+	+	+	+	+	+	+	+	10
Hemorrhage	1	1	1	1			1		1	2	7 1.1
Alveolar/bronchiolar, Epithelium, Karyomegaly	1	1	1	1	1	1	1	1	1	1	10 1.0
Alveolus, Infiltration Cellular, Histiocyte	2	2	2	2	2	2	2	2	2	2	10 2.0
Alveolus, Proteinosis	1	1	1	1	1	1	1	1	1	1	10 1.0
Bronchiole, Epithelium, Hyperplasia	1	2	2	2	2	2	2	2	2	2	10 1.9
Bronchiole, Epithelium, Vacuolization Cytoplasmic	3	2	2	3	3	3	3	3	3	2	10 2.7
Nose	+	+	+	+	+	+	+	+	+	+	10
Inflammation, Chronic Active	2	1	1		2		1	1	2	1	8 1.4
Olfactory Epithelium, Degeneration	2	2	2	2	2	2	2	2	2	2	10 2.0
Olfactory Epithelium, Hyperplasia	1			1							2 1.0
Respiratory Epithelium, Degeneration	1	2	2	2	2	2	2	2	2	2	10 1.9
Respiratory Epithelium, Metaplasia, Squamous	1	1	1	1	1	1	1	2	2	2	10 1.3
Turbinate, Atrophy	2	2	2		2	2	3	2	2		8 2.1

* .. 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: 60311 - 04

Test Type: 90-DAY

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Cobalt

CAS Number: 7440-48-4

Date Report Requested: 08/16/2012

Time Report Requested: 09:00:49

First Dose M/F: 03/07/05 / 03/07/05

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

SPECIAL SENSES SYSTEM

NONE

URINARY SYSTEM

NONE

* .. 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: 60311 - 04
 Test Type: 90-DAY
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 08/16/2012
 Time Report Requested: 09:00:49
 First Dose M/F: 03/07/05 / 03/07/05
 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	
10 mg/m3		9	9	9	9	9	9	9	9	9	
		5	5	5	5	5	5	5	5	5	
	ANIMAL ID	0	0	0	0	0	0	0	0	0	
		1	1	1	1	1	1	1	1	1	
		0	0	0	0	0	0	0	0	0	
		0	0	0	0	0	0	0	0	1	
		1	2	3	4	5	6	7	8	9	0
* TOTALS											

ALIMENTARY SYSTEM

Esophagus	+	+	+	+	+	+	+	+	+	+	10
Gallbladder	+	+	+	+	M	+	+	+	+	+	9
Intestine Large, Cecum	+	+	+	+	+	+	+	+	+	+	10
Intestine Large, Colon	+	+	+	+	+	+	+	+	+	+	10
Intestine Large, Rectum	+	+	+	+	+	+	+	+	+	+	10
Intestine Small, Duodenum	+	+	+	+	+	+	+	+	+	+	10
Intestine Small, Ileum	+	+	+	+	+	+	+	+	+	+	10
Intestine Small, Jejunum	+	+	+	+	+	+	+	+	+	+	10
Liver	+	+	+	+	+	+	+	+	+	+	10
Pancreas	+	+	+	+	+	+	+	+	+	+	10
Salivary Glands	+	+	+	+	+	+	+	+	+	+	10
Stomach, Forestomach Hyperkeratosis	+	+	+	+	+	+	+	+	+	+	10
							2				1 2.0
Stomach, Glandular	+	+	+	+	+	+	+	+	+	+	10

CARDIOVASCULAR 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: 60311 - 04

Test Type: 90-DAY

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Cobalt

CAS Number: 7440-48-4

Date Report Requested: 08/16/2012

Time Report Requested: 09:00:49

First Dose M/F: 03/07/05 / 03/07/05

Lab: BNW

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

Blood Vessel + 1

Heart + + + + + + + + + + 10

ENDOCRINE SYSTEM

Adrenal Cortex + + + + + + + + + + 10

Adrenal Medulla + + I + + + + + + + 9

Islets, Pancreatic + + + + + + + + + + 10

Parathyroid Gland + M + M + + + M M + 6

Pituitary Gland I + + + + + + + + + 9

Thyroid Gland + + + + + + + + + + 10

GENERAL BODY SYSTEM

NONE

GENITAL SYSTEM

Coagulating Gland + 1

Epididymis + + + + + + + + + + 10

Atrophy 1 1 1 1 1 1 1 1 1 1 10 1.0

Exfoliated Germ Cell 3 3 3 3 3 2 3 2 2 3 10 2.7

Hypospermia 3 3 3 3 3 3 3 2 3 3 10 2.9

Vacuolization Cytoplasmic 1 1 1 1 1 1 1 1 1 1 9 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: 60311 - 04

Test Type: 90-DAY

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Cobalt

CAS Number: 7440-48-4

Date Report Requested: 08/16/2012

Time Report Requested: 09:00:49

First Dose M/F: 03/07/05 / 03/07/05

Lab: BNW

B6C3F1 MICE MALE 10 mg/m3	DAY ON TEST										ANIMAL ID	
	0095	0095	0095	0095	0095	0095	0095	0095	0095	0095		
	0	0	0	0	0	0	0	0	0	0	0	
	1	1	1	1	1	1	1	1	1	1	1	
	0	0	0	0	0	0	0	0	0	0	0	
	0	0	0	0	0	0	0	0	0	1	1	
	1	2	3	4	5	6	7	8	9	0		* TOTALS

Preputial Gland	+	+	+	+	+	+	+	+	+	+		10
Prostate	+	+	+	+	+	+	+	+	+	+		10
Seminal Vesicle	+	+	+	+	+	+	+	+	+	+		10
Testes	+	+	+	+	+	+	+	+	+	+		10
Germinal Epithelium, Degeneration	4	4	4	4	4	4	4	4	4	4		10 4.0

HEMATOPOIETIC SYSTEM

Bone Marrow	+	+	+	+	+	+	+	+	+	+		10
Lymph Node, Bronchial Erythrophagocytosis	M	+	+	+	M	+	M	+	+	M		6
					1		1					2 1.0
Lymph Node, Mandibular	+	+	+	+	+	+	M	M	+			8
Lymph Node, Mediastinal	+	M	M	M	+	+	M	+	M	+		5
Lymph Node, Mesenteric	+	+	+	+	+	+	+	+	+	+		10
Spleen	+	+	+	+	+	+	+	+	+	+		10
Thymus	+	+	+	+	+	+	+	+	+	+		10

INTEGUMENTARY SYSTEM

Mammary Gland	M	M	M	M	M	M	M	M	M	M		0
Skin	+	+	+	+	+	+	+	+	+	+		10

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+ .. 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: 60311 - 04
 Test Type: 90-DAY
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 08/16/2012
 Time Report Requested: 09:00:49
 First Dose M/F: 03/07/05 / 03/07/05
 Lab: BNW

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

MUSCULOSKELETAL SYSTEM

Bone + + + + + + + + + + **10**

NERVOUS SYSTEM

Brain + + + + + + + + + + **10**

RESPIRATORY SYSTEM

Larynx + + + + + + + + + + **10**
 Metaplasia, Squamous 2 2 2 2 2 2 2 2 3 2 **10 2.1**

Lung + + + + + + + + + + **10**
 Hemorrhage 1 1 1 1 1 1 1 1 1 1 **6 1.0**
 Metaplasia, Osseous 1 1 1 **1 1.0**
 Alveolar/bronchiolar, Epithelium, Karyomegaly 3 3 3 3 3 3 3 3 3 3 **10 3.0**
 Alveolus, Infiltration Cellular, Histiocyte 3 3 3 3 3 3 3 3 3 3 **10 3.0**
 Alveolus, Proteinosis 2 2 2 2 2 2 2 2 2 2 **10 2.0**
 Bronchiole, Epithelium, Hyperplasia 3 3 3 3 3 3 3 3 3 3 **10 3.0**
 Bronchiole, Epithelium, Vacuolization Cytoplasmic 4 3 4 4 4 4 4 4 4 4 **10 3.9**

Nose + + + + + + + + + + **10**
 Inflammation, Chronic Active 2 2 2 3 2 3 3 2 3 3 **10 2.5**
 Olfactory Epithelium, Degeneration 3 3 3 3 3 3 3 3 3 3 **10 3.0**
 Olfactory Epithelium, Hyperplasia 2 2 1 1 **3 1.3**
 Respiratory Epithelium, Degeneration 2 2 2 2 2 2 2 2 2 2 **10 2.0**
 Respiratory Epithelium, Metaplasia, Squamous 2 2 2 2 2 1 2 2 2 2 **10 1.9**
 Turbinate, Atrophy 3 3 3 3 3 3 3 3 3 3 **10 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: 60311 - 04
 Test Type: 90-DAY
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 08/16/2012
 Time Report Requested: 09:00:49
 First Dose M/F: 03/07/05 / 03/07/05
 Lab: BNW

B6C3F1 MICE MALE 10 mg/m3	DAY ON TEST										ANIMAL ID				
	0095	0095	0095	0095	0095	0095	0095	0095	0095	0095					
	0	0	0	0	0	0	0	0	0	0	0				
	1	1	1	1	1	1	1	1	1	1	0				
	0	0	0	0	0	0	0	0	0	0	0				
	0	0	0	0	0	0	0	0	0	1	0				
	1	2	3	4	5	6	7	8	9	0					
															* TOTALS
Trachea Erosion	+	+	+	+	+	+	+	+	+	+	1				10 1 1.0
SPECIAL SENSES SYSTEM															
Eye	+	+	+	+	+	+	+	+	+	+					10
Harderian Gland	+	+	+	+	+	+	+	+	+	+					10
URINARY SYSTEM															
Kidney	+	+	+	+	+	+	+	+	+	+					10
Nephropathy			1												1 1.0
Renal Tubule, Cyst							X								1
Renal Tubule, Cyst, Multiple				X											1
Urinary Bladder	+	+	+	+	+	+	+	+	+	+					10

*** END OF MALE DATA ***

* .. 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: 60311 - 04

Test Type: 90-DAY

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Cobalt

CAS Number: 7440-48-4

Date Report Requested: 08/16/2012

Time Report Requested: 09:00:49

First Dose M/F: 03/07/05 / 03/07/05

Lab: BNW

B6C3F1 MICE FEMALE control	DAY ON TEST										ANIMAL ID		
	0 9 6	0 9 6	0 9 6	0 9 6	0 9 6	0 9 6	0 9 6	0 9 6	0 9 6	0 9 6			
	0	0	0	0	0	0	0	0	0	0	0 0 1 0 1		
	2	3	4	5	6	7	8	9	0				
	* TOTALS												
Blood Vessel	+											1	
Heart	+	+	+	+	+	+	+	+	+	+		10	
ENDOCRINE SYSTEM													
Adrenal Cortex	+	+	+	+	+	+	+	+	+	+		10	
Adrenal Medulla	+	+	+	+	+	+	+	+	+	+		10	
Islets, Pancreatic	+	+	+	+	+	+	+	+	+	+		10	
Parathyroid Gland	+	+	+	+	+	M	+	+	M	+		8	
Pituitary Gland	+	+	+	+	+	+	+	+	+	+		10	
Thyroid Gland	+	+	+	+	+	+	+	+	+	+		10	
GENERAL BODY SYSTEM													
NONE													
GENITAL SYSTEM													
Clitoral Gland	M	M	+	+	+	M	+	+	+	+		7	
Ovary	+	+	+	+	+	+	+	+	+	+		10	
Uterus	+	+	+	+	+	+	+	+	+	+		10	
Endometrium, Inflammation	1											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

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BLANK .. Not examined microscopically

1-4 .. Lesion qualified as:

1) Minimal 3) Moderate

2) Mild 4) Marked

Experiment Number: 60311 - 04

Test Type: 90-DAY

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Cobalt

CAS Number: 7440-48-4

Date Report Requested: 08/16/2012

Time Report Requested: 09:00:49

First Dose M/F: 03/07/05 / 03/07/05

Lab: BNW

B6C3F1 MICE FEMALE control	DAY ON TEST	0	0	0	0	0	0	0	0	0	
		0	0	0	0	0	0	0	0	0	
		9	9	9	9	9	9	9	9	9	
		6	6	6	6	6	6	6	6	6	
	ANIMAL ID	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	
		0	0	0	0	0	0	0	0	1	
		1	2	3	4	5	6	7	8	9	
											* TOTALS

HEMATOPOIETIC SYSTEM

Bone Marrow	+	+	+	+	+	+	+	+	+	10
Lymph Node, Bronchial	+	M	M	+	+	+	M	+	M	6
Lymph Node, Mandibular	+	+	+	+	M	M	+	+	+	8
Lymph Node, Mediastinal	M	M	M	M	M	M	M	M	+	1
Lymph Node, Mesenteric	+	+	+	+	+	+	+	+	+	10
Spleen	+	+	+	+	+	+	+	+	+	10
Thymus	+	+	+	+	+	+	+	+	+	10

INTEGUMENTARY SYSTEM

Mammary Gland	+	+	+	+	+	+	+	+	+	10
Skin	+	+	+	+	+	+	+	+	+	10

MUSCULOSKELETAL SYSTEM

Bone	+	+	+	+	+	+	+	+	+	10
------	---	---	---	---	---	---	---	---	---	-----------

NERVOUS SYSTEM

Brain	+	+	+	+	+	+	+	+	+	10
-------	---	---	---	---	---	---	---	---	---	-----------

RESPIRATORY 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: 60311 - 04

Test Type: 90-DAY

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Cobalt

CAS Number: 7440-48-4

Date Report Requested: 08/16/2012

Time Report Requested: 09:00:49

First Dose M/F: 03/07/05 / 03/07/05

Lab: BNW

B6C3F1 MICE FEMALE control	DAY ON TEST										ANIMAL ID			
	0 9 6	0 9 6	0 9 6	0 9 6	0 9 6	0 9 6	0 9 6	0 9 6	0 9 6	0 9 6				
	0	0	0	0	0	0	0	0	0	0	0 0 1 0 1			
	1	1	1	1	1	1	1	1	1	1	0 0 1 0 1			
	2	3	4	5	6	7	8	9	0					
													* TOTALS	
Larynx	+	+	+	+	+	+	+	+	+	+				10
Lung	+	+	+	+	+	+	+	+	+	+				10
Nose	+	+	+	+	+	+	+	+	+	+				10
Pleura Infiltration Cellular, Mixed Cell, Focal										+				1
										1				1 1.0
Trachea	+	+	+	+	+	+	+	+	+	+				10
SPECIAL SENSES SYSTEM														
Eye	+	+	+	+	+	+	+	+	+	+				10
Harderian Gland	+	+	+	+	+	+	+	+	+	+				10
URINARY SYSTEM														
Kidney Nephropathy	+	+	+	+	+	+	+	+	+	+				10
			1											1 1.0
Urinary Bladder	+	+	+	+	+	+	+	+	+	+				10

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+ .. Tissue examined microscopically
X .. Lesion present
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BLANK .. Not examined microscopically

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

Experiment Number: 60311 - 04
 Test Type: 90-DAY
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 08/16/2012
 Time Report Requested: 09:00:49
 First Dose M/F: 03/07/05 / 03/07/05
 Lab: BNW

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

ALIMENTARY SYSTEM

NONE

CARDIOVASCULAR SYSTEM

NONE

ENDOCRINE SYSTEM

NONE

GENERAL BODY SYSTEM

NONE

GENITAL SYSTEM

NONE

HEMATOPOIETIC SYSTEM

NONE

INTEGUMENTARY SYSTEM

NONE

MUSCULOSKELETAL SYSTEM

NONE

* .. 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

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 2) Mild 4) Marked

Experiment Number: 60311 - 04
 Test Type: 90-DAY
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 08/16/2012
 Time Report Requested: 09:00:49
 First Dose M/F: 03/07/05 / 03/07/05
 Lab: BNW

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

NERVOUS SYSTEM

NONE

RESPIRATORY SYSTEM

Larynx	+	+	+	+	+	+	+	+	+	+	10
Metaplasia, Squamous	2	1	2	1	1	1	1	1	2	1	10 1.3
Lung	+	+	+	+	+	+	+	+	+	+	10
Alveolus, Infiltration Cellular, Histiocyte	1	1	1	1	1	1	1	1	1	1	10 1.0
Bronchiole, Epithelium, Vacuolization Cytoplasmic	1	1	1	1	1	1	1	1	1	1	10 1.0
Nose	+	+	+	+	+	+	+	+	+	+	10
Olfactory Epithelium, Degeneration	1										1 1.0

SPECIAL SENSES SYSTEM

NONE

URINARY SYSTEM

NONE

* .. 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: 60311 - 04
 Test Type: 90-DAY
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 08/16/2012
 Time Report Requested: 09:00:49
 First Dose M/F: 03/07/05 / 03/07/05
 Lab: BNW

B6C3F1 MICE FEMALE 1.25 mg/m3	DAY ON TEST	0	0	0	0	0	0	0	0	0	
		0	0	0	0	0	0	0	0	0	
		9	9	9	9	9	9	9	9	9	
		6	6	6	6	6	6	6	6	6	
	ANIMAL ID	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	
		0	0	0	0	0	0	0	0	1	
		1	2	3	4	5	6	7	8	9	
											* TOTALS

ALIMENTARY SYSTEM

NONE

CARDIOVASCULAR SYSTEM

NONE

ENDOCRINE SYSTEM

NONE

GENERAL BODY SYSTEM

NONE

GENITAL SYSTEM

NONE

HEMATOPOIETIC SYSTEM

NONE

INTEGUMENTARY SYSTEM

NONE

MUSCULOSKELETAL SYSTEM

NONE

* .. Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade
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Experiment Number: 60311 - 04

Test Type: 90-DAY

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Cobalt

CAS Number: 7440-48-4

Date Report Requested: 08/16/2012

Time Report Requested: 09:00:49

First Dose M/F: 03/07/05 / 03/07/05

Lab: BNW

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

NERVOUS SYSTEM

NONE

RESPIRATORY SYSTEM

Larynx	+	+	+	+	+	+	+	+	+	+	10
Metaplasia, Squamous	2	1	2	1	1	1	2	1	1	2	10 1.4
Lung	+	+	+	+	+	+	+	+	+	+	10
Alveolus, Infiltration Cellular, Histiocyte	1	1	1	1	1	1	1	1	1	1	10 1.0
Bronchiole, Epithelium, Vacuolization Cytoplasmic	1	1	1	1	1	1	1	1	1	1	10 1.0
Nose	+	+	+	+	+	+	+	+	+	+	10
Olfactory Epithelium, Degeneration		1	1	1	1			1	1	1	7 1.0
Respiratory Epithelium, Degeneration				1							1 1.0

SPECIAL SENSES SYSTEM

NONE

URINARY SYSTEM

NONE

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 Species/Strain: MICE/B6C3F1

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 First Dose M/F: 03/07/05 / 03/07/05
 Lab: BNW

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

ALIMENTARY SYSTEM

Esophagus	+	1
Gallbladder	+	1
Intestine Large, Cecum	+	1
Intestine Large, Colon	+	1
Intestine Large, Rectum	+	1
Intestine Small, Duodenum	+	1
Intestine Small, Ileum	+	1
Intestine Small, Jejunum	+	1
Liver	+	1
Pancreas	+	1
Salivary Glands	+	1
Stomach, Forestomach	+	1
Stomach, Glandular	+	1

CARDIOVASCULAR SYSTEM

Heart	+	1
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 Species/Strain: MICE/B6C3F1

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 Cobalt
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 First Dose M/F: 03/07/05 / 03/07/05
 Lab: BNW

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

ENDOCRINE SYSTEM

Adrenal Cortex	+	1
Adrenal Medulla	+	1
Islets, Pancreatic	+	1
Parathyroid Gland	+	1
Pituitary Gland	+	1
Thyroid Gland	+	1

GENERAL BODY SYSTEM

NONE

GENITAL SYSTEM

Clitoral Gland	+	1
Ovary	+	1
Uterus	+	1

HEMATOPOIETIC SYSTEM

Bone Marrow	+	1
Lymph Node, Bronchial	+	1

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 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

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 First Dose M/F: 03/07/05 / 03/07/05
 Lab: BNW

B6C3F1 MICE FEMALE 2.5 mg/m3	DAY ON TEST										ANIMAL ID			
	0 9 6	0 9 6	0 9 6	0 9 6	0 9 6	0 9 6	0 9 6	0 9 6	0 9 6	0 9 6				
	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			
	0	0	0	0	0	0	0	0	0	1	1			
	1	2	3	4	5	6	7	8	9	0				* TOTALS
Arteriole, Thrombosis											1			1 1.0
Bronchiole, Epithelium, Hyperplasia	1	1	1	1	1	1	1	1	1	1				10 1.0
Bronchiole, Epithelium, Vacuolization Cytoplasmic	1	1	1	1	2	1	1	1	1	1				10 1.1
Nose	+	+	+	+	+	+	+	+	+	+				10
Inflammation, Chronic Active					1						1			1 1.0
Olfactory Epithelium, Degeneration	1	1	1	1	1	1	1		1	1				9 1.0
Olfactory Epithelium, Hyperplasia	1		1	1										3 1.0
Respiratory Epithelium, Degeneration	1	1	1		1	1	1		1	1				8 1.0
Respiratory Epithelium, Metaplasia, Squamous	1	1	1	1	1	1	1	1	1					9 1.0
Trachea											+			1
SPECIAL SENSES SYSTEM														
Eye											+			1
Harderian Gland											+			1
URINARY SYSTEM														
Kidney											+			1
Urinary Bladder											+			1

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 Test Type: 90-DAY
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

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 First Dose M/F: 03/07/05 / 03/07/05
 Lab: BNW

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

ALIMENTARY SYSTEM

NONE

CARDIOVASCULAR SYSTEM

NONE

ENDOCRINE SYSTEM

NONE

GENERAL BODY SYSTEM

NONE

GENITAL SYSTEM

NONE

HEMATOPOIETIC SYSTEM

NONE

INTEGUMENTARY SYSTEM

NONE

MUSCULOSKELETAL SYSTEM

NONE

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 + .. Tissue examined microscopically
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Experiment Number: 60311 - 04
 Test Type: 90-DAY
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: MICE/B6C3F1

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL
 Cobalt
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 First Dose M/F: 03/07/05 / 03/07/05
 Lab: BNW

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

NERVOUS SYSTEM

NONE

RESPIRATORY SYSTEM

Larynx	+	+	+	+	+	+	+	+	+		10
Metaplasia, Squamous	1	2	2	1	2	2	2	2	2	2	10 1.8
Lung	+	+	+	+	+	+	+	+	+		10
Hemorrhage	1	1	1	1	1	1	1	1	1	1	8 1.0
Alveolar/bronchiolar, Epithelium, Karyomegaly	3	1	3	1	1	1	2	1	2	2	10 1.7
Alveolus, Infiltration Cellular, Histiocyte	2	2	3	1	2	2	3	2	2	2	10 2.1
Alveolus, Proteinosis	1	1	1	1	1	1	1	1	1	1	10 1.0
Bronchiole, Epithelium, Hyperplasia	2	2	2	2	1	2	2	2	2	2	10 1.9
Bronchiole, Epithelium, Vacuolization Cytoplasmic	2	3	3	3	3	2	3	2	2	3	10 2.6
Nose	+	+	+	+	+	+	+	+	+		10
Inflammation, Chronic Active	3	2	2	3	2	3	2	2	3	3	10 2.5
Olfactory Epithelium, Degeneration	3	2	3	3	2	3	3	2	2	2	10 2.5
Respiratory Epithelium, Degeneration	2	2	1	2	2	2	2	2	2	2	10 1.9
Respiratory Epithelium, Metaplasia, Squamous	2	2	2	2	2	2	2	2	2	2	10 2.0
Turbinate, Atrophy	2	3	3	3	3	1	1	3	1	2	10 2.2

SPECIAL SENSES SYSTEM

NONE

URINARY SYSTEM

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 BLANK .. Not examined microscopically

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

Experiment Number: 60311 - 04

Test Type: 90-DAY

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Cobalt

CAS Number: 7440-48-4

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First Dose M/F: 03/07/05 / 03/07/05

Lab: BNW

B6C3F1 MICE FEMALE	DAY ON TEST	0	0	0	0	0	0	0	0	0	
		0	0	0	0	0	0	0	0	0	
		9	9	9	9	9	9	9	9	9	
	ANIMAL ID	6	6	6	6	6	6	6	6	6	
		0	0	0	0	0	0	0	0	0	
		0	0	0	0	0	0	0	0	0	
		9	9	9	9	9	9	9	9	9	
		0	0	0	0	0	0	0	0	0	1
		1	2	3	4	5	6	7	8	9	0
		* TOTALS									

NONE

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 Species/Strain: MICE/B6C3F1

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 First Dose M/F: 03/07/05 / 03/07/05
 Lab: BNW

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

ALIMENTARY SYSTEM

Esophagus	+	+	+	+	+	+	+	+	+	+	10
Gallbladder	+	+	+	+	+	+	+	+	+	+	10
Intestine Large, Cecum	+	+	+	+	+	+	+	+	+	+	10
Intestine Large, Colon	+	+	+	+	+	+	+	+	+	+	10
Intestine Large, Rectum	+	+	+	+	+	+	+	+	+	+	10
Intestine Small, Duodenum	+	+	+	+	+	+	+	+	+	+	10
Intestine Small, Ileum	+	+	+	+	+	+	+	+	+	+	10
Intestine Small, Jejunum	+	+	+	+	+	+	+	+	+	+	10
Liver	+	+	+	+	+	+	+	+	+	+	10
Pancreas	+	+	+	+	+	+	+	+	+	+	10
Salivary Glands	+	+	+	+	+	+	+	+	+	+	10
Stomach, Forestomach	+	+	+	+	+	+	+	+	+	+	10
Stomach, Glandular	+	+	+	+	+	+	+	+	+	+	10

CARDIOVASCULAR SYSTEM

Blood Vessel	+	1
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Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

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First Dose M/F: 03/07/05 / 03/07/05

Lab: BNW

B6C3F1 MICE FEMALE 10 mg/m3	DAY ON TEST										ANIMAL ID			
	0	0	0	0	0	0	0	0	0	0				
	0	0	0	0	0	0	0	0	0	0	0			
	9	9	9	9	9	9	9	9	9	9	9			
	6	6	6	6	6	6	6	6	6	6	6			
	0	0	0	0	0	0	0	0	0	0	0			
	1	1	1	1	1	1	1	1	1	1	1			
	1	1	1	1	1	1	1	1	1	1	1			
	0	0	0	0	0	0	0	0	0	0	0			
	1	2	3	4	5	6	7	8	9	0	0			
												* TOTALS		
Heart	+	+	+	+	+	+	+	+	+	+	+		10	
ENDOCRINE SYSTEM														
Adrenal Cortex	+	+	+	+	+	+	+	+	+	+	+		10	
Adrenal Medulla	+	+	+	+	+	+	+	+	+	+	+		10	
Islets, Pancreatic	+	+	+	+	+	+	+	+	+	+	+		10	
Parathyroid Gland	M	+	M	+	M	+	+	M	+	+	+		6	
Pituitary Gland	+	+	+	+	+	+	+	+	+	+	+		10	
Thyroid Gland	+	+	M	+	+	+	+	+	+	+	+		9	
GENERAL BODY SYSTEM														
NONE														
GENITAL SYSTEM														
Clitoral Gland	+	+	M	+	+	M	+	M	+	+	+		7	
Ovary	+	+	+	+	+	+	+	+	+	+	+		10	
Uterus	+	+	+	+	+	+	+	+	+	+	+		10	
Endometrium, Inflammation			1											1 1.0
HEMATOPOIETIC SYSTEM														

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 Species/Strain: MICE/B6C3F1

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 Lab: BNW

B6C3F1 MICE FEMALE 10 mg/m3	DAY ON TEST										ANIMAL ID			
	0 9 6	0 9 6	0 9 6	0 9 6	0 9 6	0 9 6	0 9 6	0 9 6	0 9 6	0 9 6				
	0 1 1 0 1	0 1 1 0 2	0 1 1 0 3	0 1 1 0 4	0 1 1 0 5	0 1 1 0 6	0 1 1 0 7	0 1 1 0 8	0 1 1 0 9	0 1 1 0 0				
	* TOTALS													
Bone Marrow	+ + + + + + + + + +												10	
Lymph Node, Bronchial	+ M + M + + + + + I												7	
Lymph Node, Mandibular	+ + M + + + M + M +												7	
Lymph Node, Mediastinal	+ M M M M M + M + +												4	
Lymph Node, Mesenteric	+ + + + + + + + + +												10	
Spleen	+ + + + + + + + + +												10	
Thymus	+ + + + + + + + + +												10	
INTEGUMENTARY SYSTEM														
Mammary Gland	+ + + + + + + + + +												10	
Skin	+ + + + + + + + + +												10	
MUSCULOSKELETAL SYSTEM														
Bone	+ + + + + + + + + +												10	
NERVOUS SYSTEM														
Brain	+ + + + + + + + + +												10	
RESPIRATORY SYSTEM														
Larynx	+ + + + + + + + + +												10	

* .. Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade
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 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: 60311 - 04

Test Type: 90-DAY

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Cobalt

CAS Number: 7440-48-4

Date Report Requested: 08/16/2012

Time Report Requested: 09:00:49

First Dose M/F: 03/07/05 / 03/07/05

Lab: BNW

B6C3F1 MICE FEMALE 10 mg/m3	DAY ON TEST										ANIMAL ID	
	0	0	0	0	0	0	0	0	0	0		
	0	0	0	0	0	0	0	0	0	0	0	
	9	9	9	9	9	9	9	9	9	9	9	
	6	6	6	6	6	6	6	6	6	6	6	
	0	0	0	0	0	0	0	0	0	0	0	
	1	1	1	1	1	1	1	1	1	1	1	
	1	1	1	1	1	1	1	1	1	1	1	
	0	0	0	0	0	0	0	0	0	0	1	
	1	2	3	4	5	6	7	8	9	0		* TOTALS
Metaplasia, Squamous	3	3	2	2	2	2	2	2	2	2		10 2.2
Lung	+	+	+	+	+	+	+	+	+	+		10
Emphysema	1							2		3		3 2.0
Hemorrhage			1						1			2 1.0
Alveolar/bronchiolar, Epithelium, Karyomegaly	3	3	3	3	3	3	3	3	3	3		10 3.0
Alveolus, Infiltration Cellular, Histiocyte	3	3	3	3	3	3	3	3	3	3		10 3.0
Alveolus, Proteinosis	1	2	2	2	1	2	2	2	2	2		10 1.8
Bronchiole, Epithelium, Hyperplasia	3	3	3	3	3	3	3	3	3	3		10 3.0
Bronchiole, Epithelium, Vacuolization Cytoplasmic	4	4	4	4	4	4	4	3	4	4		10 3.9
Nose	+	+	+	+	+	+	+	+	+	+		10
Inflammation, Chronic Active	2	3	2	3	3	2	2	3	2	2		10 2.4
Olfactory Epithelium, Degeneration	3	2	3	3	3	3	3	3	3	3		10 2.9
Respiratory Epithelium, Degeneration	2	1	2	2	2	2	2	2	2	2		10 1.9
Respiratory Epithelium, Metaplasia, Squamous	2	2	2	2	2	2	2	2	2	2		10 2.0
Turbinate, Atrophy	2	3	3	3	3	3	3	3	3	3		10 2.9
Trachea	+	+	I	+	+	+	+	+	+	+		9
SPECIAL SENSES SYSTEM												
Eye	+	+	+	+	+	+	+	+	+	+		10
Harderian Gland	+	+	+	+	+	+	+	+	+	+		10
Hemorrhage					1							1 1.0
URINARY SYSTEM												
Kidney	+	+	+	+	+	+	+	+	+	+		10

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Experiment Number: 60311 - 04

Test Type: 90-DAY

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

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Cobalt

CAS Number: 7440-48-4

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First Dose M/F: 03/07/05 / 03/07/05

Lab: BNW

B6C3F1 MICE FEMALE	DAY ON TEST	0	0	0	0	0	0	0	0	0	
		9	9	9	9	9	9	9	9	9	9
10 mg/m3	ANIMAL ID	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	1	1	1	1	1	1	
		0	0	0	0	0	0	0	0	1	
		1	2	3	4	5	6	7	8	9	0
		* TOTALS									
Nephropathy		1				1				2 1.0	
Urinary Bladder		+	+	+	+	+	+	+	+	+	10

*** END OF REPORT ***

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