

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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 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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 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient 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	
control	ANIMAL ID	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	
		0	0	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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		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	
										0	* 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	M	1
Lymph Node, Mesenteric Lymphocyte, Necrosis	+	+	+	+	+	+	+	+	+	+	10
									2		1 2.0
Spleen	+	+	+	+	+	+	+	+	+	+	10
Thymus	+	+	+	+	+	+	+	+	+	+	10

INTEGUMENTARY SYSTEM

Mammary Gland	M	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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	9	9	9	9	9	9	9	9	9	9	9														
	5	5	5	5	5	5	5	5	5	5	5														
	1	2	3	4	5	6	7	8	9	0															

RESPIRATORY SYSTEM

Larynx	+	+	+	+	+	+	+	+	+	+															10	
Lung	+	+	+	+	+	+	+	+	+	+																10
Nose	+	+	+	+	+	+	+	+	+	+																10
Trachea	+	+	+	+	+	+	+	+	+	+																10

SPECIAL SENSES SYSTEM

Eye	+	+	+	+	+	+	+	+	+	+															10	
Hemorrhage, Acute																										1 3.0
Harderian Gland	+	+	+	+	+	+	+	+	+	+																10

URINARY SYSTEM

Kidney	+	+	+	+	+	+	+	+	+	+																10
Nephropathy																										1 1.0
Urinary Bladder	+	+	+	+	+	+	+	+	+	+																10

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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	
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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		0	0	0	0	0	0	0	0	0	
0.625 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	
		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	0
* 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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		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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		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

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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 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											

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

* .. Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade
+ .. Tissue examined microscopically M .. Missing tissue
X .. Lesion present A .. Autolysis precludes evaluation
I .. Insufficient tissue 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	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 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

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
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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

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+ .. Tissue examined microscopically

X .. Lesion present

I .. Insufficient tissue

M .. Missing tissue

A .. Autolysis precludes evaluation

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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	ANIMAL ID	0	0	0	0	0	0	0	0	0
		9	9	9	9	9	9	9	9	9		1	1	1	1	1	1	1	1	1
		5	5	5	5	5	5	5	5	5		0	0	0	0	0	0	0	0	0
		1	2	3	4	5	6	7	8	9		0	1	0	0	0	0	0	1	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
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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 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		6 1.0
Metaplasia, Osseous	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 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
Turbinates, 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 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
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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	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	1	0				
	1	2	3	4	5	6	7	8	9	0					
															* TOTALS
Larynx	+	+	+	+	+	+	+	+	+	+					10
Lung	+	+	+	+	+	+	+	+	+	+					10
Nose	+	+	+	+	+	+	+	+	+	+					10
Pleura											+				1
Infiltration Cellular, Mixed Cell, Focal											1				1 1.0
Trachea	+	+	+	+	+	+	+	+	+	+					10
SPECIAL SENSES SYSTEM															
Eye	+	+	+	+	+	+	+	+	+	+					10
Harderian Gland	+	+	+	+	+	+	+	+	+	+					10
URINARY SYSTEM															
Kidney	+	+	+	+	+	+	+	+	+	+					10
Nephropathy											1				1 1.0
Urinary Bladder	+	+	+	+	+	+	+	+	+	+					10

* .. 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
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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

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											

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
 + .. 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	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

* .. 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	DAY ON TEST	0	0	0	0	0	0	0	0	0	
		9	9	9	9	9	9	9	0	9	9
2.5 mg/m3	ANIMAL ID	6	6	6	6	6	6	4	6	6	
		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	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
-------	---	---

* .. 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 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	0	0			
	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

* .. 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	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

* .. 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	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	0	0	0	0	0	0	0	0	
	ANIMAL ID	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									

NERVOUS SYSTEM

NONE

RESPIRATORY SYSTEM

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

SPECIAL SENSES SYSTEM

NONE

URINARY 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	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

* .. 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	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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* .. 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 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	0	0	0	0	0	0	0	0	0	0 1 1 0 1			
	1	1	1	1	1	1	1	1	1	1	1 1 0 1			
	2	3	4	5	6	7	8	9	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														

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

* .. 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	DAY ON TEST	0	0	0	0	0	0	0	0	0	
		0	0	0	0	0	0	0	0	0	0
10 mg/m3	ANIMAL ID	9	9	9	9	9	9	9	9	9	
		6	6	6	6	6	6	6	6	6	6
		0	0	0	0	0	0	0	0	0	
		1	1	1	1	1	1	1	1	1	
		1	1	1	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 ***

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

+ .. Tissue examined microscopically

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