

TDMS No. 60311 - 06

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS

Cobalt

CAS Number: 7440-48-4

Date Report Requested: 09/08/2011

Time Report Requested: 08:22:42

First Dose M/F: 05/15/06 / 05/15/06

Lab: BNW

F1_M3

C Number: C60311
Lock Date: 12/03/2008
Cage Range: ALL
Date Range: ALL
Reasons For Removal: ALL
Removal Date Range: ALL
Treatment Groups: Include ALL
Study Gender: Both
TDMSE Version: 2.4.2.1_003
PWG Approval Date: NONE

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HISTORICAL CONTROL STUDIES

From May 2011 report

SAME ROUTE

20011-06 -- 1-Bromopropane (INHALATION AIR)

99017-06 -- Diethylamine (INHALATION AIR)

93025-06 -- Tetralin (INHALATION AIR)

ALL ROUTES

99024-08 -- Androstenedione (GAVAGE METHYLCELLULOSE)

99037-06 -- alpha/beta Thujone mixture (GAVAGE METHYLCELLULOSE)

99028-06 -- bis(2-Chloroethoxy)methane (SKIN ETHANOL)

20011-06 -- 1-Bromopropane (INHALATION AIR)

99027-04 -- Chromium picolinate monohydrate (ORAL FEED)

05174-06 -- Cresols (ORAL FEED)

97003-08 -- 1,2-Dibromo-2,4-dicyanobutane (SKIN ETHANOL)

99017-06 -- Diethylamine (INHALATION AIR)

99031-04 -- Ginkgo biloba extract (GAVAGE CORN OIL)

20005-06 -- Ginseng (GAVAGE WATER)

99007-06 -- Goldenseal root powder (ORAL FEED)

88105-04 -- Isoeugenol (GAVAGE CORN OIL)

20007-06 -- Kava kava extract (GAVAGE CORN OIL)

95003-06 -- Methyl trans-styryl ketone (SKIN ETHANOL)

20008-04 -- Milk thistle extract (ORAL FEED)

99023-04 -- beta-Myrcene (GAVAGE CORN OIL)

20107-04 -- N,N-Dimethyl-p-toluidine (GAVAGE CORN OIL)

20009-04 -- beta-Picoline (ORAL WATER)

99020-06 -- Pulegone (GAVAGE CORN OIL)

99032-04 -- Pyrogallol (SKIN ETHANOL)

20114-06 -- Sodium dichromate dihydrate (VI) (ORAL WATER)

88148-07 -- 3,3',4,4'-Tetrachloroazobenzene (GAVAGE CORN OIL)

93025-06 -- Tetralin (INHALATION AIR)

88133-08 -- Trimethylolpropane triacrylate (SKIN ACETONE)

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**FOR ALL DOSES THE TUMOR RATES IN THE FOLLOWING TISSUES/ORGANS ARE BASED ON NUMBER OF TISSUES EXAMINED.
IN OTHER TISSUES/ORGANS RATES ARE BASED ON THE NUMBER OF ANIMALS NECROPSIED.**

Adrenal Cortex
Bone Marrow
Islets, Pancreatic
Liver
Lung
Ovary
Pituitary Gland
Spleen

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SUMMARY OF STATISTICALLY SIGNIFICANT ($P \leq .05$) RESULTS IN THE ANALYSIS OF COBALT

MALE MICE

Organ

Islets, Pancreatic
Liver

Lung

All Organs

Morphology

Carcinoma or Adenoma
Hemangiosarcoma
Hepatocellular Adenoma
Hepatocellular Carcinoma
Hepatocellular Carcinoma or Hepatoblastoma
Hepatocellular Carcinoma or Hepatocellular Adenoma
Hepatocellular Carcinoma, Hepatocellular Adenoma, or Hepatoblastoma
Alveolar/Bronchiolar Adenoma
Alveolar/Bronchiolar Carcinoma
Alveolar/Bronchiolar Carcinoma or Alveolar/Bronchiolar Adenoma
Benign Tumors
Malignant Tumors
Malignant and Benign Tumors

FEMALE MICE

Organ

Liver

Lung

Pituitary Gland: Pars Distalis or Unspecified Site
All Organs

Morphology

Hepatocellular Adenoma
Hepatocellular Carcinoma
Hepatocellular Carcinoma or Hepatoblastoma
Hepatocellular Carcinoma or Hepatocellular Adenoma
Hepatocellular Carcinoma, Hepatocellular Adenoma, or Hepatoblastoma
Alveolar/Bronchiolar Adenoma
Alveolar/Bronchiolar Carcinoma
Alveolar/Bronchiolar Carcinoma or Alveolar/Bronchiolar Adenoma
Adenoma
Malignant Lymphoma: Histiocytic, Lymphocytic, Mixed, NOS, or Undifferentiated Cell Type
Benign Tumors
Malignant Tumors
Malignant and Benign Tumors

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN MICE(B6C3F1)
TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Adrenal Cortex				
Adenoma				
TUMOR RATES				
OVERALL (a)	1/50 (2%)	4/49 (8%)	1/50 (2%)	1/50 (2%)
POLY-3 RATE (b)	1/47.49	4/44.07	1/41.48	1/40.58
POLY-3 PERCENT (g)	2.1%	9.1%	2.4%	2.5%
TERMINAL (d)	1/39 (3%)	3/31 (10%)	1/29 (3%)	1/25 (4%)
FIRST INCIDENCE	729 (T)	715	729 (T)	729 (T)
HC TUMORS SAME ROUTE	12/148 (8%)			
HC TUMORS ALL ROUTES	74/1145 (7%)			
STATISTICAL TESTS				
POLY 3	P=0.444N	P=0.157	P=0.730	P=0.724
POLY 1.5	P=0.414N	P=0.164	P=0.741	P=0.739
POLY 6	P=0.482N	P=0.147	P=0.717	P=0.705
COCH-ARM / FISHERS	P=0.370N	P=0.175	P=0.753N	P=0.753N
MAX-ISO-POLY-3	P=0.406N	P=0.077	P=0.463	P=0.458
HISTCONT SAME RTE	(h)	(h)	(h)	(h)
HISTCONT ALL RTES	P=1.000	P=0.439	P=1.000	P=1.000
CURR VS HC SAME RTE	P=0.115			
CURR VS HC ALL RTES	P=0.168			

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN MICE(B6C3F1)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Adrenal Cortex Carcinoma				
TUMOR RATES				
OVERALL (a)	0/50 (0%)	0/49 (0%)	0/50 (0%)	0/50 (0%)
POLY-3 RATE (b)	0/47.49	0/44.01	0/41.48	0/40.58
POLY-3 PERCENT (g)	0%	0%	0%	0%
TERMINAL (d)	0/39 (0%)	0/31 (0%)	0/29 (0%)	0/25 (0%)
FIRST INCIDENCE	---	---	---	---
HC TUMORS SAME ROUTE	0/148 (0%)			
HC TUMORS ALL ROUTES	0/1145 (0%)			
STATISTICAL TESTS				
POLY 3	(n)	(n)	(n)	(n)
POLY 1.5	(n)	(n)	(n)	(n)
POLY 6	(n)	(n)	(n)	(n)
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)
HISTCONT SAME RTE	(n)	(n)	(n)	(n)
HISTCONT ALL RTES	(n)	(n)	(n)	(n)
CURR VS HC SAME RTE	(n)			
CURR VS HC ALL RTES	(n)			

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STATISTICAL ANALYSIS OF PRIMARY TUMORS IN MICE(B6C3F1)
TERMINAL SACRIFICE AT 105 WEEKS

DOSE	Males			
	control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Bone Marrow				
Hemangiosarcoma				
TUMOR RATES				
OVERALL (a)	1/50 (2%)	1/49 (2%)	2/50 (4%)	0/49 (0%)
POLY-3 RATE (b)	1/47.49	1/44.01	2/41.77	0/39.67
POLY-3 PERCENT (g)	2.1%	2.3%	4.8%	0%
TERMINAL (d)	1/39 (3%)	1/31 (3%)	1/29 (3%)	0/25 (0%)
FIRST INCIDENCE	729 (T)	729 (T)	652	---
HC TUMORS SAME ROUTE	2/148 (1%)			
HC TUMORS ALL ROUTES	11/1146 (1%)			
STATISTICAL TESTS				
POLY 3	P=0.426N	P=0.743	P=0.455	P=0.536N
POLY 1.5	P=0.404N	P=0.749	P=0.471	P=0.523N
POLY 6	P=0.452N	P=0.736	P=0.440	P=0.551N
COCH-ARM / FISHERS	P=0.370N	P=0.747	P=0.500	P=0.505N
MAX-ISO-POLY-3	P=0.318N	P=0.478	P=0.257	P=0.201N
HISTCONT SAME RTE	P=0.612	P=1.000	P=0.261	P=1.000
HISTCONT ALL RTES	P=0.436	P=0.497	P=0.041*	P=1.000
CURR VS HC SAME RTE	P=0.866			
CURR VS HC ALL RTES	P=0.508			

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TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Harderian Gland Adenoma				
TUMOR RATES	#	#	#	#
OVERALL (a)	6/50 (12%)	3/50 (6%)	4/50 (8%)	4/50 (8%)
POLY-3 RATE (b)	6/47.78	3/44.26	4/41.57	4/41.21
POLY-3 PERCENT (g)	12.6%	6.8%	9.6%	9.7%
TERMINAL (d)	5/39 (13%)	3/31 (10%)	3/29 (10%)	2/25 (8%)
FIRST INCIDENCE	651	729 (T)	706	635
HC TUMORS SAME ROUTE	13/150 (9%)			
HC TUMORS ALL ROUTES	149/1150 (13%)			
STATISTICAL TESTS				
POLY 3	P=0.454N	P=0.281N	P=0.460N	P=0.465N
POLY 1.5	P=0.427N	P=0.265N	P=0.426N	P=0.428N
POLY 6	P=0.488N	P=0.304N	P=0.495N	P=0.511N
COCH-ARM / FISHERS	P=0.382N	P=0.243N	P=0.370N	P=0.370N
MAX-ISO-POLY-3	P=0.452N	P=0.186N	P=0.341N	P=0.346N
HISTCONT SAME RTE	(h)	(h)	(h)	(h)
HISTCONT ALL RTES	(h)	(h)	(h)	(h)
CURR VS HC SAME RTE	P=0.628			
CURR VS HC ALL RTES	P=0.707			

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**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN MICE(B6C3F1)
TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Harderian Gland Carcinoma				
TUMOR RATES	#	#	#	#
OVERALL (a)	2/50 (4%)	1/50 (2%)	0/50 (0%)	0/50 (0%)
POLY-3 RATE (b)	2/47.80	1/44.26	0/41.48	0/40.58
POLY-3 PERCENT (g)	4.2%	2.3%	0%	0%
TERMINAL (d)	1/39 (3%)	1/31 (3%)	0/29 (0%)	0/25 (0%)
FIRST INCIDENCE	646	729 (T)	---	---
HC TUMORS SAME ROUTE	10/150 (7%)			
HC TUMORS ALL ROUTES	37/1150 (3%)			
STATISTICAL TESTS				
POLY 3	P=0.108N	P=0.527N	P=0.270N	P=0.276N
POLY 1.5	P=0.105N	P=0.515N	P=0.258N	P=0.260N
POLY 6	P=0.112N	P=0.542N	P=0.284N	P=0.296N
COCH-ARM / FISHERS	P=0.101N	P=0.500N	P=0.247N	P=0.247N
MAX-ISO-POLY-3	P=0.128N	P=0.310N	P=0.107N	P=0.112N
HISTCONT SAME RTE	(h)	(h)	(h)	(h)
HISTCONT ALL RTES	(h)	(h)	(h)	(h)
CURR VS HC SAME RTE	P=0.352			
CURR VS HC ALL RTES	P=0.837			

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**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN MICE(B6C3F1)
TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Harderian Gland Carcinoma or Adenoma				
TUMOR RATES	#	#	#	#
OVERALL (a)	8/50 (16%)	4/50 (8%)	4/50 (8%)	4/50 (8%)
POLY-3 RATE (b)	8/48.09	4/44.26	4/41.57	4/41.21
POLY-3 PERCENT (g)	16.6%	9%	9.6%	9.7%
TERMINAL (d)	6/39 (15%)	4/31 (13%)	3/29 (10%)	2/25 (8%)
FIRST INCIDENCE	646	729 (T)	706	635
HC TUMORS SAME ROUTE	23/150 (15%)			
HC TUMORS ALL ROUTES	184/1150 (16%)			
STATISTICAL TESTS				
POLY 3	P=0.224N	P=0.220N	P=0.255N	P=0.260N
POLY 1.5	P=0.202N	P=0.201N	P=0.225N	P=0.226N
POLY 6	P=0.254N	P=0.246N	P=0.291N	P=0.306N
COCH-ARM / FISHERS	P=0.169N	P=0.178N	P=0.178N	P=0.178N
MAX-ISO-POLY-3	P=0.257N	P=0.148N	P=0.183N	P=0.188N
HISTCONT SAME RTE	(h)	(h)	(h)	(h)
HISTCONT ALL RTES	(h)	(h)	(h)	(h)
CURR VS HC SAME RTE	P=0.898			
CURR VS HC ALL RTES	P=0.832			

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TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Intestine Small: Site Unspecified Adenoma				
TUMOR RATES	#	#	#	#
OVERALL (a)	2/50 (4%)	0/50 (0%)	0/50 (0%)	0/50 (0%)
POLY-3 RATE (b)	2/47.49	0/44.26	0/41.48	0/40.58
POLY-3 PERCENT (g)	4.2%	0%	0%	0%
TERMINAL (d)	2/39 (5%)	0/31 (0%)	0/29 (0%)	0/25 (0%)
FIRST INCIDENCE	729 (T)	---	---	---
HC TUMORS SAME ROUTE	0/150 (0%)			
HC TUMORS ALL ROUTES	5/1150 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.109N	P=0.253N	P=0.269N	P=0.274N
POLY 1.5	P=0.111N	P=0.247N	P=0.257N	P=0.259N
POLY 6	P=0.107N	P=0.262N	P=0.281N	P=0.293N
COCH-ARM / FISHERS	P=0.115N	P=0.247N	P=0.247N	P=0.247N
MAX-ISO-POLY-3	P=0.065N	P=0.091N	P=0.105N	P=0.111N
HISTCONT SAME RTE	(h)	(h)	(h)	(h)
HISTCONT ALL RTES	(h)	(h)	(h)	(h)
CURR VS HC SAME RTE	P=0.018*			
CURR VS HC ALL RTES	P<0.001**			

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TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Intestine Small: Site Unspecified Carcinoma or Adenoma				
TUMOR RATES	#	#	#	#
OVERALL (a)	2/50 (4%)	0/50 (0%)	0/50 (0%)	0/50 (0%)
POLY-3 RATE (b)	2/47.49	0/44.26	0/41.48	0/40.58
POLY-3 PERCENT (g)	4.2%	0%	0%	0%
TERMINAL (d)	2/39 (5%)	0/31 (0%)	0/29 (0%)	0/25 (0%)
FIRST INCIDENCE	729 (T)	---	---	---
HC TUMORS SAME ROUTE	6/150 (4%)			
HC TUMORS ALL ROUTES	28/1150 (2%)			
STATISTICAL TESTS				
POLY 3	P=0.109N	P=0.253N	P=0.269N	P=0.274N
POLY 1.5	P=0.111N	P=0.247N	P=0.257N	P=0.259N
POLY 6	P=0.107N	P=0.262N	P=0.281N	P=0.293N
COCH-ARM / FISHERS	P=0.115N	P=0.247N	P=0.247N	P=0.247N
MAX-ISO-POLY-3	P=0.065N	P=0.091N	P=0.105N	P=0.111N
HISTCONT SAME RTE	(h)	(h)	(h)	(h)
HISTCONT ALL RTES	(h)	(h)	(h)	(h)
CURR VS HC SAME RTE	P=0.918			
CURR VS HC ALL RTES	P=0.544			

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TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Islets, Pancreatic Carcinoma				
TUMOR RATES				
OVERALL (a)	0/49 (0%)	2/47 (4%)	0/50 (0%)	0/50 (0%)
POLY-3 RATE (b)	0/46.78	2/42.99	0/41.48	0/40.58
POLY-3 PERCENT (g)	0%	4.7%	0%	0%
TERMINAL (d)	0/39 (0%)	0/31 (0%)	0/29 (0%)	0/25 (0%)
FIRST INCIDENCE	---	589	---	---
HC TUMORS SAME ROUTE	0/147 (0%)			
HC TUMORS ALL ROUTES	5/1143 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.442N	P=0.219	(e)	(e)
POLY 1.5	P=0.423N	P=0.223	(e)	(e)
POLY 6	P=0.465N	P=0.213	(e)	(e)
COCH-ARM / FISHERS	P=0.398N	P=0.237	(e)	(e)
MAX-ISO-POLY-3	P=0.294N	P=0.073	(e)	(e)
HISTCONT SAME RTE	P=0.422	P=0.075	(e)	(e)
HISTCONT ALL RTES	P=0.413	P=0.002**	(e)	(e)
CURR VS HC SAME RTE	P=1.000			
CURR VS HC ALL RTES	P=0.448			

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TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Islets, Pancreatic Carcinoma or Adenoma				
TUMOR RATES				
OVERALL (a)	0/49 (0%)	3/47 (6%)	0/50 (0%)	0/50 (0%)
POLY-3 RATE (b)	0/46.78	3/43.03	0/41.48	0/40.58
POLY-3 PERCENT (g)	0%	7%	0%	0%
TERMINAL (d)	0/39 (0%)	0/31 (0%)	0/29 (0%)	0/25 (0%)
FIRST INCIDENCE	---	589	---	---
HC TUMORS SAME ROUTE	4/147 (3%)			
HC TUMORS ALL ROUTES	26/1143 (2%)			
STATISTICAL TESTS				
POLY 3	P=0.357N	P=0.104	(e)	(e)
POLY 1.5	P=0.333N	P=0.107	(e)	(e)
POLY 6	P=0.387N	P=0.100	(e)	(e)
COCH-ARM / FISHERS	P=0.304N	P=0.113	(e)	(e)
MAX-ISO-POLY-3	P=0.211N	P=0.036*	(e)	(e)
HISTCONT SAME RTE	P=1.000	P=0.194	(e)	(e)
HISTCONT ALL RTES	P=1.000	P=0.055	(e)	(e)
CURR VS HC SAME RTE	P=0.203			
CURR VS HC ALL RTES	P=0.189			

TDMS No. 60311 - 06

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Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS

Cobalt

CAS Number: 7440-48-4

Date Report Requested: 09/08/2011

Time Report Requested: 08:22:42

First Dose M/F: 05/15/06 / 05/15/06

Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN MICE(B6C3F1)
TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Liver				
Hemangiosarcoma				
TUMOR RATES				
OVERALL (a)	4/50 (8%)	2/50 (4%)	3/50 (6%)	0/50 (0%)
POLY-3 RATE (b)	4/47.76	2/44.67	3/42.52	0/40.58
POLY-3 PERCENT (g)	8.4%	4.5%	7.1%	0%
TERMINAL (d)	2/39 (5%)	1/31 (3%)	0/29 (0%)	0/25 (0%)
FIRST INCIDENCE	682	611	597	---
HC TUMORS SAME ROUTE	4/149 (3%)			
HC TUMORS ALL ROUTES	57/1149 (5%)			
STATISTICAL TESTS				
POLY 3	P=0.083N	P=0.369N	P=0.563N	P=0.084N
POLY 1.5	P=0.073N	P=0.355N	P=0.541N	P=0.074N
POLY 6	P=0.096N	P=0.386N	P=0.583N	P=0.099N
COCH-ARM / FISHERS	P=0.060N	P=0.339N	P=0.500N	P=0.059N
MAX-ISO-POLY-3	P=0.078N	P=0.233N	P=0.411N	P=0.039N*
HISTCONT SAME RTE	P=0.631	P=1.000	P=0.134	P=1.000
HISTCONT ALL RTES	P=1.000	P=1.000	P=0.472	P=1.000
CURR VS HC SAME RTE	P=0.079			
CURR VS HC ALL RTES	P=0.414			

TDMS No. 60311 - 06

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Species/Strain: MICE/B6C3F1

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS

Cobalt

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First Dose M/F: 05/15/06 / 05/15/06

Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN MICE(B6C3F1)
TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Liver				
Hepatoblastoma				
TUMOR RATES				
OVERALL (a)	2/50 (4%)	2/50 (4%)	0/50 (0%)	0/50 (0%)
POLY-3 RATE (b)	2/47.49	2/44.26	0/41.48	0/40.58
POLY-3 PERCENT (g)	4.2%	4.5%	0%	0%
TERMINAL (d)	2/39 (5%)	2/31 (7%)	0/29 (0%)	0/25 (0%)
FIRST INCIDENCE	729 (T)	729 (T)	---	---
HC TUMORS SAME ROUTE	2/149 (1%)			
HC TUMORS ALL ROUTES	61/1149 (5%)			
STATISTICAL TESTS				
POLY 3	P=0.100N	P=0.668	P=0.269N	P=0.274N
POLY 1.5	P=0.094N	P=0.679	P=0.257N	P=0.259N
POLY 6	P=0.108N	P=0.654	P=0.281N	P=0.293N
COCH-ARM / FISHERS	P=0.086N	P=0.691N	P=0.247N	P=0.247N
MAX-ISO-POLY-3	P=0.159N	P=0.471	P=0.105N	P=0.111N
HISTCONT SAME RTE	P=0.761	P=0.199	P=1.000	P=1.000
HISTCONT ALL RTES	(h)	(h)	(h)	(h)
CURR VS HC SAME RTE	P=0.252			
CURR VS HC ALL RTES	P=0.624			

TDMS No. 60311 - 06

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS

Cobalt

CAS Number: 7440-48-4

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Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN MICE(B6C3F1)
TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Liver				
Hepatocellular Adenoma				
TUMOR RATES				
OVERALL (a)	28/50 (56%)	25/50 (50%)	21/50 (42%)	12/50 (24%)
POLY-3 RATE (b)	28/48.69	25/44.61	21/44.93	12/41.26
POLY-3 PERCENT (g)	57.5%	56%	46.7%	29.1%
TERMINAL (d)	22/39 (56%)	20/31 (65%)	14/29 (48%)	8/25 (32%)
FIRST INCIDENCE	646	684	361	635
HC TUMORS SAME ROUTE	91/149 (61%)			
HC TUMORS ALL ROUTES	658/1149 (57%)			
STATISTICAL TESTS				
POLY 3	P=0.002N**	P=0.527N	P=0.199N	P=0.005N**
POLY 1.5	P<0.001N**	P=0.444N	P=0.164N	P=0.002N**
POLY 6	P=0.005N**	P=0.530	P=0.245N	P=0.012N*
COCH-ARM / FISHERS	P<0.001N**	P=0.344N	P=0.115N	P<0.001N**
MAX-ISO-POLY-3	P=0.003N**	P=0.443N	P=0.155N	P=0.004N**
HISTCONT SAME RTE	(h)	(h)	(h)	(h)
HISTCONT ALL RTES	(h)	(h)	(h)	(h)
CURR VS HC SAME RTE	P=0.313			
CURR VS HC ALL RTES	P=0.532			

TDMS No. 60311 - 06

Test Type: CHRONIC

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Species/Strain: MICE/B6C3F1

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS

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First Dose M/F: 05/15/06 / 05/15/06

Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN MICE(B6C3F1)
TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Liver				
Hepatocellular Carcinoma				
TUMOR RATES				
OVERALL (a)	25/50 (50%)	21/50 (42%)	14/50 (28%)	9/50 (18%)
POLY-3 RATE (b)	25/50.00	21/48.15	14/44.44	9/41.09
POLY-3 PERCENT (g)	50%	43.6%	31.5%	21.9%
TERMINAL (d)	14/39 (36%)	9/31 (29%)	5/29 (17%)	6/25 (24%)
FIRST INCIDENCE	561	457	394	649
HC TUMORS SAME ROUTE	46/149 (31%)			
HC TUMORS ALL ROUTES	399/1149 (35%)			
STATISTICAL TESTS				
POLY 3	P=0.002N**	P=0.334N	P=0.052N	P=0.004N**
POLY 1.5	P<0.001N**	P=0.307N	P=0.036N*	P=0.002N**
POLY 6	P=0.006N**	P=0.372N	P=0.074N	P=0.013N*
COCH-ARM / FISHERS	P<0.001N**	P=0.274N	P=0.020N*	P<0.001N**
MAX-ISO-POLY-3	P=0.003N**	P=0.268N	P=0.040N*	P=0.004N**
HISTCONT SAME RTE	P=1.000	P=0.148	P=1.000	P=1.000
HISTCONT ALL RTES	P=1.000	P=0.248	P=1.000	P=1.000
CURR VS HC SAME RTE	P=0.060			
CURR VS HC ALL RTES	P=0.057			

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN MICE(B6C3F1)
TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Liver				
Hepatocellular Carcinoma or Hepatoblastoma				
TUMOR RATES				
OVERALL (a)	27/50 (54%)	22/50 (44%)	14/50 (28%)	9/50 (18%)
POLY-3 RATE (b)	27/50.00	22/48.15	14/44.44	9/41.09
POLY-3 PERCENT (g)	54%	45.7%	31.5%	21.9%
TERMINAL (d)	16/39 (41%)	10/31 (32%)	5/29 (17%)	6/25 (24%)
FIRST INCIDENCE	561	457	394	649
HC TUMORS SAME ROUTE	47/149 (32%)			
HC TUMORS ALL ROUTES	433/1149 (38%)			
STATISTICAL TESTS				
POLY 3	P<0.001N**	P=0.268N	P=0.021N*	P<0.001N**
POLY 1.5	P<0.001N**	P=0.243N	P=0.013N*	P<0.001N**
POLY 6	P=0.002N**	P=0.304N	P=0.033N*	P=0.004N**
COCH-ARM / FISHERS	P<0.001N**	P=0.212N	P=0.007N**	P<0.001N**
MAX-ISO-POLY-3	P<0.001N**	P=0.210N	P=0.017N*	P<0.001N**
HISTCONT SAME RTE	P=1.000	P=0.124	P=1.000	P=1.000
HISTCONT ALL RTES	P=1.000	P=0.292	P=1.000	P=1.000
CURR VS HC SAME RTE	P=0.025*			
CURR VS HC ALL RTES	P=0.045*			

TDMS No. 60311 - 06

Test Type: CHRONIC

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Species/Strain: MICE/B6C3F1

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS

Cobalt

CAS Number: 7440-48-4

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First Dose M/F: 05/15/06 / 05/15/06

Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN MICE(B6C3F1)
TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Liver				
Hepatocellular Carcinoma or Hepatocellular Adenoma				
TUMOR RATES				
OVERALL (a)	38/50 (76%)	38/50 (76%)	32/50 (64%)	18/50 (36%)
POLY-3 RATE (b)	38/50.00	38/48.29	32/46.80	18/41.77
POLY-3 PERCENT (g)	76%	78.7%	68.4%	43.1%
TERMINAL (d)	27/39 (69%)	23/31 (74%)	19/29 (66%)	11/25 (44%)
FIRST INCIDENCE	561	457	361	635
HC TUMORS SAME ROUTE	115/149 (77%)			
HC TUMORS ALL ROUTES	844/1149 (74%)			
STATISTICAL TESTS				
POLY 3	P<0.001N**	P=0.469	P=0.269N	P<0.001N**
POLY 1.5	P<0.001N**	P=0.523	P=0.211N	P<0.001N**
POLY 6	P<0.001N**	P=0.397	P=0.343N	P=0.004N**
COCH-ARM / FISHERS	P<0.001N**	P=0.592N	P=0.138N	P<0.001N**
MAX-ISO-POLY-3	P<0.001N**	P=0.375	P=0.207N	P<0.001N**
HISTCONT SAME RTE	(h)	(h)	(h)	(h)
HISTCONT ALL RTES	P=1.000	P=0.444	P=1.000	P=1.000
CURR VS HC SAME RTE	P=0.521			
CURR VS HC ALL RTES	P=0.938			

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN MICE(B6C3F1)
TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Liver				
Hepatocellular Carcinoma, Hepatocellular Adenoma, or Hepatoblastoma				
TUMOR RATES				
OVERALL (a)	39/50 (78%)	39/50 (78%)	32/50 (64%)	18/50 (36%)
POLY-3 RATE (b)	39/50.00	39/48.29	32/46.80	18/41.77
POLY-3 PERCENT (g)	78%	80.8%	68.4%	43.1%
TERMINAL (d)	28/39 (72%)	24/31 (77%)	19/29 (66%)	11/25 (44%)
FIRST INCIDENCE	561	457	361	635
HC TUMORS SAME ROUTE	115/149 (77%)			
HC TUMORS ALL ROUTES	852/1149 (74%)			
STATISTICAL TESTS				
POLY 3	P<0.001N**	P=0.464	P=0.197N	P<0.001N**
POLY 1.5	P<0.001N**	P=0.522	P=0.150N	P<0.001N**
POLY 6	P<0.001N**	P=0.388	P=0.262N	P=0.002N**
COCH-ARM / FISHERS	P<0.001N**	P=0.595N	P=0.093N	P<0.001N**
MAX-ISO-POLY-3	P<0.001N**	P=0.367	P=0.146N	P<0.001N**
HISTCONT SAME RTE	P=1.000	P=1.000	P=1.000	P=1.000
HISTCONT ALL RTES	P=1.000	P=0.374	P=1.000	P=1.000
CURR VS HC SAME RTE	P=0.755			
CURR VS HC ALL RTES	P=0.876			

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN MICE(B6C3F1)
TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Lung				
Alveolar/Bronchiolar Adenoma				
TUMOR RATES				
OVERALL (a)	7/50 (14%)	11/49 (22%)	15/50 (30%)	3/50 (6%)
POLY-3 RATE (b)	7/47.75	11/44.99	15/41.74	3/41.10
POLY-3 PERCENT (g)	14.7%	24.5%	35.9%	7.3%
TERMINAL (d)	5/39 (13%)	7/31 (23%)	14/29 (48%)	2/25 (8%)
FIRST INCIDENCE	684	571	660	571
HC TUMORS SAME ROUTE	20/150 (13%)			
HC TUMORS ALL ROUTES	172/1150 (15%)			
STATISTICAL TESTS				
POLY 3	P=0.254N	P=0.176	P=0.016*	P=0.226N
POLY 1.5	P=0.196N	P=0.188	P=0.024*	P=0.198N
POLY 6	P=0.340N	P=0.160	P=0.011*	P=0.264N
COCH-ARM / FISHERS	P=0.128N	P=0.204	P=0.045*	P=0.159N
MAX-ISO-POLY-3	P=0.042N*	P=0.122	P=0.012*	P=0.155N
HISTCONT SAME RTE	P=0.465	P=0.110	P=0.039*	P=1.000
HISTCONT ALL RTES	P=0.454	P=0.114	P=0.003**	P=1.000
CURR VS HC SAME RTE	P=0.967			
CURR VS HC ALL RTES	P=0.698			

TDMS No. 60311 - 06

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Species/Strain: MICE/B6C3F1

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS

Cobalt

CAS Number: 7440-48-4

Date Report Requested: 09/08/2011

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First Dose M/F: 05/15/06 / 05/15/06

Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN MICE(B6C3F1)
TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Lung				
Alveolar/Bronchiolar Carcinoma				
TUMOR RATES				
OVERALL (a)	11/50 (22%)	38/49 (78%)	42/50 (84%)	46/50 (92%)
POLY-3 RATE (b)	11/48.27	38/47.88	42/47.96	46/49.03
POLY-3 PERCENT (g)	22.8%	79.4%	87.6%	93.8%
TERMINAL (d)	8/39 (21%)	24/31 (77%)	25/29 (86%)	22/25 (88%)
FIRST INCIDENCE	561	551	382	425
HC TUMORS SAME ROUTE	31/150 (21%)			
HC TUMORS ALL ROUTES	144/1150 (13%)			
STATISTICAL TESTS				
POLY 3	P<0.001**	P<0.001**	P<0.001**	P<0.001**
POLY 1.5	P<0.001**	P<0.001**	P<0.001**	P<0.001**
POLY 6	P<0.001**	P<0.001**	P<0.001**	P<0.001**
COCH-ARM / FISHERS	P<0.001**	P<0.001**	P<0.001**	P<0.001**
MAX-ISO-POLY-3	P<0.001**	P<0.001**	P<0.001**	P<0.001**
HISTCONT SAME RTE	P=0.003**	P=0.007**	P=0.005**	P=0.003**
HISTCONT ALL RTES	P<0.001**	P<0.001**	P<0.001**	P<0.001**
CURR VS HC SAME RTE	P=0.989			
CURR VS HC ALL RTES	P=0.078			

TDMS No. 60311 - 06

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**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN MICE(B6C3F1)
TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Lung				
Alveolar/Bronchiolar Carcinoma or Alveolar/Bronchiolar Adenoma				
TUMOR RATES				
OVERALL (a)	16/50 (32%)	41/49 (84%)	43/50 (86%)	47/50 (94%)
POLY-3 RATE (b)	16/48.53	41/48.23	43/47.96	47/49.03
POLY-3 PERCENT (g)	33%	85%	89.7%	95.9%
TERMINAL (d)	11/39 (28%)	26/31 (84%)	26/29 (90%)	23/25 (92%)
FIRST INCIDENCE	561	551	382	425
HC TUMORS SAME ROUTE	48/150 (32%)			
HC TUMORS ALL ROUTES	301/1150 (26%)			
STATISTICAL TESTS				
POLY 3	P<0.001**	P<0.001**	P<0.001**	P<0.001**
POLY 1.5	P<0.001**	P<0.001**	P<0.001**	P<0.001**
POLY 6	P<0.001**	P<0.001**	P<0.001**	P<0.001**
COCH-ARM / FISHERS	P<0.001**	P<0.001**	P<0.001**	P<0.001**
MAX-ISO-POLY-3	P<0.001**	P<0.001**	P<0.001**	P<0.001**
HISTCONT SAME RTE	P=0.005**	P=0.011*	P=0.009**	P=0.006**
HISTCONT ALL RTES	P<0.001**	P<0.001**	P<0.001**	P<0.001**
CURR VS HC SAME RTE	P=0.823			
CURR VS HC ALL RTES	P=0.529			

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STATISTICAL ANALYSIS OF PRIMARY TUMORS IN MICE(B6C3F1)
TERMINAL SACRIFICE AT 105 WEEKS

DOSE	Males			
	control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Pituitary Gland: Pars Distalis or Unspecified Site Adenoma				
TUMOR RATES				
OVERALL (a)	0/47 (0%)	0/49 (0%)	0/48 (0%)	0/48 (0%)
POLY-3 RATE (b)	0/45.09	0/44.01	0/40.34	0/39.09
POLY-3 PERCENT (g)	0%	0%	0%	0%
TERMINAL (d)	0/38 (0%)	0/31 (0%)	0/28 (0%)	0/24 (0%)
FIRST INCIDENCE	---	---	---	---
HC TUMORS SAME ROUTE	1/146 (1%)			
HC TUMORS ALL ROUTES	3/1131 (0%)			
STATISTICAL TESTS				
POLY 3	(n)	(n)	(n)	(n)
POLY 1.5	(n)	(n)	(n)	(n)
POLY 6	(n)	(n)	(n)	(n)
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)
HISTCONT SAME RTE	(n)	(n)	(n)	(n)
HISTCONT ALL RTES	(n)	(n)	(n)	(n)
CURR VS HC SAME RTE	(n)			
CURR VS HC ALL RTES	(n)			

TDMS No. 60311 - 06

Test Type: CHRONIC

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Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN MICE(B6C3F1)
TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Skin				
Fibroma, Fibrosarcoma, Sarcoma, Myxoma, Myxosarcoma, or Fibrous Histiocytoma				
TUMOR RATES	#	#	#	#
OVERALL (a)	0/50 (0%)	1/50 (2%)	0/50 (0%)	0/50 (0%)
POLY-3 RATE (b)	0/47.49	1/44.26	0/41.48	0/40.58
POLY-3 PERCENT (g)	0%	2.3%	0%	0%
TERMINAL (d)	0/39 (0%)	1/31 (3%)	0/29 (0%)	0/25 (0%)
FIRST INCIDENCE	---	729 (T)	---	---
HC TUMORS SAME ROUTE	3/150 (2%)			
HC TUMORS ALL ROUTES	14/1150 (1%)			
STATISTICAL TESTS				
POLY 3	(n)	(n)	(n)	(n)
POLY 1.5	(n)	(n)	(n)	(n)
POLY 6	(n)	(n)	(n)	(n)
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)
HISTCONT SAME RTE	(n)	(n)	(n)	(n)
HISTCONT ALL RTES	(n)	(n)	(n)	(n)
CURR VS HC SAME RTE	(n)			
CURR VS HC ALL RTES	(n)			

TDMS No. 60311 - 06

Test Type: CHRONIC

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Species/Strain: MICE/B6C3F1

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS

Cobalt

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Lab: BNW

STATISTICAL ANALYSIS OF PRIMARY TUMORS IN MICE(B6C3F1)
TERMINAL SACRIFICE AT 105 WEEKS

DOSE	Males			
	control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Skin				
Fibrosarcoma, Sarcoma, Myxosarcoma, or Fibrous Histiocytoma				
TUMOR RATES	#	#	#	#
OVERALL (a)	0/50 (0%)	1/50 (2%)	0/50 (0%)	0/50 (0%)
POLY-3 RATE (b)	0/47.49	1/44.26	0/41.48	0/40.58
POLY-3 PERCENT (g)	0%	2.3%	0%	0%
TERMINAL (d)	0/39 (0%)	1/31 (3%)	0/29 (0%)	0/25 (0%)
FIRST INCIDENCE	---	729 (T)	---	---
HC TUMORS SAME ROUTE	3/150 (2%)			
HC TUMORS ALL ROUTES	13/1150 (1%)			
STATISTICAL TESTS				
POLY 3	(n)	(n)	(n)	(n)
POLY 1.5	(n)	(n)	(n)	(n)
POLY 6	(n)	(n)	(n)	(n)
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)
HISTCONT SAME RTE	(n)	(n)	(n)	(n)
HISTCONT ALL RTES	(n)	(n)	(n)	(n)
CURR VS HC SAME RTE	(n)			
CURR VS HC ALL RTES	(n)			

TDMS No. 60311 - 06

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS

Cobalt

CAS Number: 7440-48-4

Date Report Requested: 09/08/2011

Time Report Requested: 08:22:42

First Dose M/F: 05/15/06 / 05/15/06

Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN MICE(B6C3F1)
TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Skin				
Hemangiosarcoma				
TUMOR RATES	#	#	#	#
OVERALL (a)	0/50 (0%)	0/50 (0%)	1/50 (2%)	0/50 (0%)
POLY-3 RATE (b)	0/47.49	0/44.26	1/41.48	0/40.58
POLY-3 PERCENT (g)	0%	0%	2.4%	0%
TERMINAL (d)	0/39 (0%)	0/31 (0%)	1/29 (3%)	0/25 (0%)
FIRST INCIDENCE	---	---	729 (T)	---
HC TUMORS SAME ROUTE	3/150 (2%)			
HC TUMORS ALL ROUTES	19/1150 (2%)			
STATISTICAL TESTS				
POLY 3	(n)	(n)	(n)	(n)
POLY 1.5	(n)	(n)	(n)	(n)
POLY 6	(n)	(n)	(n)	(n)
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)
HISTCONT SAME RTE	(n)	(n)	(n)	(n)
HISTCONT ALL RTES	(n)	(n)	(n)	(n)
CURR VS HC SAME RTE	(n)			
CURR VS HC ALL RTES	(n)			

TDMS No. 60311 - 06

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS

Cobalt

CAS Number: 7440-48-4

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Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN MICE(B6C3F1)
TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Skin				
Sarcoma				
TUMOR RATES	#	#	#	#
OVERALL (a)	0/50 (0%)	0/50 (0%)	0/50 (0%)	0/50 (0%)
POLY-3 RATE (b)	0/47.49	0/44.26	0/41.48	0/40.58
POLY-3 PERCENT (g)	0%	0%	0%	0%
TERMINAL (d)	0/39 (0%)	0/31 (0%)	0/29 (0%)	0/25 (0%)
FIRST INCIDENCE	---	---	---	---
HC TUMORS SAME ROUTE	2/150 (1%)			
HC TUMORS ALL ROUTES	3/1150 (0%)			
STATISTICAL TESTS				
POLY 3	(n)	(n)	(n)	(n)
POLY 1.5	(n)	(n)	(n)	(n)
POLY 6	(n)	(n)	(n)	(n)
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)
HISTCONT SAME RTE	(n)	(n)	(n)	(n)
HISTCONT ALL RTES	(n)	(n)	(n)	(n)
CURR VS HC SAME RTE	(n)			
CURR VS HC ALL RTES	(n)			

TDMS No. 60311 - 06

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS

Cobalt

CAS Number: 7440-48-4

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First Dose M/F: 05/15/06 / 05/15/06

Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN MICE(B6C3F1)
TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Spleen				
Hemangiosarcoma				
TUMOR RATES				
OVERALL (a)	3/50 (6%)	0/48 (0%)	4/49 (8%)	3/48 (6%)
POLY-3 RATE (b)	3/47.58	0/43.07	4/41.86	3/39.05
POLY-3 PERCENT (g)	6.3%	0%	9.6%	7.7%
TERMINAL (d)	2/39 (5%)	0/31 (0%)	1/29 (3%)	2/25 (8%)
FIRST INCIDENCE	708	---	652	649
HC TUMORS SAME ROUTE	6/147 (4%)			
HC TUMORS ALL ROUTES	37/1136 (3%)			
STATISTICAL TESTS				
POLY 3	P=0.292	P=0.137N	P=0.431	P=0.568
POLY 1.5	P=0.316	P=0.132N	P=0.452	P=0.598
POLY 6	P=0.265	P=0.145N	P=0.410	P=0.532
COCH-ARM / FISHERS	P=0.357	P=0.129N	P=0.489	P=0.641
MAX-ISO-POLY-3	P=0.267	P=0.052N	P=0.297	P=0.408
HISTCONT SAME RTE	P=0.220	P=1.000	P=0.131	P=0.281
HISTCONT ALL RTES	P=0.048*	P=1.000	P=0.014*	P=0.102
CURR VS HC SAME RTE	P=0.637			
CURR VS HC ALL RTES	P=0.338			

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN MICE(B6C3F1)
TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
All Organs				
Hemangiosarcoma				
TUMOR RATES	#	#	#	#
OVERALL (a)	7/50 (14%)	3/50 (6%)	7/50 (14%)	3/50 (6%)
POLY-3 RATE (b)	7/47.76	3/44.67	7/42.76	3/40.87
POLY-3 PERCENT (g)	14.7%	6.7%	16.4%	7.3%
TERMINAL (d)	5/39 (13%)	2/31 (7%)	2/29 (7%)	2/25 (8%)
FIRST INCIDENCE	682	611	597	649
HC TUMORS SAME ROUTE	13/150 (9%)			
HC TUMORS ALL ROUTES	110/1150 (10%)			
STATISTICAL TESTS				
POLY 3	P=0.291N	P=0.186N	P=0.526	P=0.228N
POLY 1.5	P=0.259N	P=0.174N	P=0.556	P=0.199N
POLY 6	P=0.332N	P=0.203N	P=0.501	P=0.268N
COCH-ARM / FISHERS	P=0.213N	P=0.159N	P=0.613N	P=0.159N
MAX-ISO-POLY-3	P=0.253N	P=0.117N	P=0.414	P=0.158N
HISTCONT SAME RTE	P=0.531	P=1.000	P=0.181	P=1.000
HISTCONT ALL RTES	P=0.653	P=1.000	P=0.106	P=1.000
CURR VS HC SAME RTE	P=0.398			
CURR VS HC ALL RTES	P=0.380			

TDMS No. 60311 - 06

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS

Cobalt

CAS Number: 7440-48-4

Date Report Requested: 09/08/2011

Time Report Requested: 08:22:42

First Dose M/F: 05/15/06 / 05/15/06

Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN MICE(B6C3F1)
TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
All Organs				
Hemangiosarcoma or Hemangioma				
TUMOR RATES	#	#	#	#
OVERALL (a)	7/50 (14%)	3/50 (6%)	7/50 (14%)	4/50 (8%)
POLY-3 RATE (b)	7/47.76	3/44.67	7/42.76	4/40.87
POLY-3 PERCENT (g)	14.7%	6.7%	16.4%	9.8%
TERMINAL (d)	5/39 (13%)	2/31 (7%)	2/29 (7%)	3/25 (12%)
FIRST INCIDENCE	682	611	597	649
HC TUMORS SAME ROUTE	14/150 (9%)			
HC TUMORS ALL ROUTES	120/1150 (10%)			
STATISTICAL TESTS				
POLY 3	P=0.428N	P=0.186N	P=0.526	P=0.357N
POLY 1.5	P=0.391N	P=0.174N	P=0.556	P=0.318N
POLY 6	P=0.474N	P=0.203N	P=0.501	P=0.408N
COCH-ARM / FISHERS	P=0.334N	P=0.159N	P=0.613N	P=0.262N
MAX-ISO-POLY-3	P=0.413N	P=0.117N	P=0.414	P=0.261N
HISTCONT SAME RTE	P=0.466	P=1.000	P=0.209	P=1.000
HISTCONT ALL RTES	P=0.636	P=1.000	P=0.182	P=1.000
CURR VS HC SAME RTE	P=0.479			
CURR VS HC ALL RTES	P=0.524			

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN MICE(B6C3F1)
TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
All Organs				
Malignant Lymphoma: Histiocytic, Lymphocytic, Mixed, NOS, or Undifferentiated Cell Type				
TUMOR RATES	#	#	#	#
OVERALL (a)	4/50 (8%)	1/50 (2%)	1/50 (2%)	3/50 (6%)
POLY-3 RATE (b)	4/48.28	1/44.26	1/41.85	3/41.81
POLY-3 PERCENT (g)	8.3%	2.3%	2.4%	7.2%
TERMINAL (d)	1/39 (3%)	1/31 (3%)	0/29 (0%)	1/25 (4%)
FIRST INCIDENCE	646	729 (T)	627	227
HC TUMORS SAME ROUTE	6/150 (4%)			
HC TUMORS ALL ROUTES	48/1150 (4%)			
STATISTICAL TESTS				
POLY 3	P=0.551N	P=0.207N	P=0.226N	P=0.578N
POLY 1.5	P=0.539N	P=0.194N	P=0.208N	P=0.545N
POLY 6	P=0.566N	P=0.224N	P=0.246N	P=0.620N
COCH-ARM / FISHERS	P=0.523N	P=0.181N	P=0.181N	P=0.500N
MAX-ISO-POLY-3	P=0.304N	P=0.110N	P=0.129N	P=0.426N
HISTCONT SAME RTE	P=0.095	P=1.000	P=1.000	P=0.200
HISTCONT ALL RTES	P=0.411	P=1.000	P=1.000	P=0.320
CURR VS HC SAME RTE	P=0.253			
CURR VS HC ALL RTES	P=0.243			

TDMS No. 60311 - 06

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS

Cobalt

CAS Number: 7440-48-4

Date Report Requested: 09/08/2011

Time Report Requested: 08:22:42

First Dose M/F: 05/15/06 / 05/15/06

Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN MICE(B6C3F1)
TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
All Organs				
Benign Tumors				
TUMOR RATES	#	#	#	#
OVERALL (a)	35/50 (70%)	32/50 (64%)	34/50 (68%)	19/50 (38%)
POLY-3 RATE (b)	35/48.77	32/45.53	34/45.27	19/42.07
POLY-3 PERCENT (g)	71.8%	70.3%	75.1%	45.2%
TERMINAL (d)	28/39 (72%)	24/31 (77%)	25/29 (86%)	13/25 (52%)
FIRST INCIDENCE	646	571	361	571
HC TUMORS SAME ROUTE	111/150 (74%)			
HC TUMORS ALL ROUTES	805/1150 (70%)			
STATISTICAL TESTS				
POLY 3	P=0.004N**	P=0.528N	P=0.446	P=0.006N**
POLY 1.5	P=0.002N**	P=0.440N	P=0.532	P=0.003N**
POLY 6	P=0.012N*	P=0.539	P=0.353	P=0.017N*
COCH-ARM / FISHERS	P<0.001N**	P=0.335N	P=0.500N	P<0.001N**
MAX-ISO-POLY-3	P=0.005N**	P=0.435N	P=0.357	P=0.005N**
HISTCONT SAME RTE	(h)	(h)	(h)	(h)
HISTCONT ALL RTES	P=1.000	P=1.000	P=1.000	P=1.000
CURR VS HC SAME RTE	P=0.512			
CURR VS HC ALL RTES	P=0.703			

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN MICE(B6C3F1)
TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
All Organs				
Malignant Tumors				
TUMOR RATES	#	#	#	#
OVERALL (a)	36/50 (72%)	46/50 (92%)	46/50 (92%)	48/50 (96%)
POLY-3 RATE (b)	36/50.00	46/50.00	46/49.12	48/50.00
POLY-3 PERCENT (g)	72%	92%	93.7%	96%
TERMINAL (d)	25/39 (64%)	27/31 (87%)	26/29 (90%)	23/25 (92%)
FIRST INCIDENCE	561	457	382	227
HC TUMORS SAME ROUTE	92/150 (61%)			
HC TUMORS ALL ROUTES	679/1150 (59%)			
STATISTICAL TESTS				
POLY 3	P<0.001**	P=0.008**	P=0.004**	P<0.001**
POLY 1.5	P<0.001**	P=0.008**	P=0.004**	P<0.001**
POLY 6	P<0.001**	P=0.008**	P=0.003**	P<0.001**
COCH-ARM / FISHERS	P<0.001**	P=0.009**	P=0.009**	P<0.001**
MAX-ISO-POLY-3	P<0.001**	P=0.004**	P=0.002**	P<0.001**
HISTCONT SAME RTE	P=0.022*	P=0.030*	P=0.028*	P=0.024*
HISTCONT ALL RTES	P<0.001**	P<0.001**	P<0.001**	P<0.001**
CURR VS HC SAME RTE	P=0.324			
CURR VS HC ALL RTES	P=0.114			

TDMS No. 60311 - 06

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS

Cobalt

CAS Number: 7440-48-4

Date Report Requested: 09/08/2011

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First Dose M/F: 05/15/06 / 05/15/06

Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN MICE(B6C3F1)
TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
All Organs				
Malignant and Benign Tumors				
TUMOR RATES	#	#	#	#
OVERALL (a)	45/50 (90%)	49/50 (98%)	50/50 (100%)	49/50 (98%)
POLY-3 RATE (b)	45/50.00	49/50.00	50/50.00	49/50.00
POLY-3 PERCENT (g)	90%	98%	100%	98%
TERMINAL (d)	34/39 (87%)	30/31 (97%)	29/29 (100%)	24/25 (96%)
FIRST INCIDENCE	561	457	361	227
HC TUMORS SAME ROUTE	142/150 (95%)			
HC TUMORS ALL ROUTES	1030/1150 (90%)			
STATISTICAL TESTS				
POLY 3	P=0.050*	P=0.102	P=0.031*	P=0.102
POLY 1.5	P=0.050*	P=0.102	P=0.031*	P=0.102
POLY 6	P=0.050*	P=0.102	P=0.031*	P=0.102
COCH-ARM / FISHERS	P=0.052	P=0.102	P=0.028*	P=0.102
MAX-ISO-POLY-3	P=0.010**	P=0.045*	P=0.010**	P=0.045*
HISTCONT SAME RTE	P=0.112	P=0.172	P=0.072	P=0.172
HISTCONT ALL RTES	P=0.039*	P=0.105	P=0.051	P=0.105
CURR VS HC SAME RTE	P=0.138			
CURR VS HC ALL RTES	P=0.849			

TDMS No. 60311 - 06

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS

Cobalt

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Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN MICE(B6C3F1)
TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Adrenal Cortex				
Adenoma				
TUMOR RATES				
OVERALL (a)	0/50 (0%)	0/50 (0%)	0/50 (0%)	0/48 (0%)
POLY-3 RATE (b)	0/43.79	0/44.40	0/41.56	0/38.93
POLY-3 PERCENT (g)	0%	0%	0%	0%
TERMINAL (d)	0/36 (0%)	0/35 (0%)	0/27 (0%)	0/26 (0%)
FIRST INCIDENCE	---	---	---	---
HC TUMORS SAME ROUTE	1/150 (1%)			
HC TUMORS ALL ROUTES	5/1193 (0%)			
STATISTICAL TESTS				
POLY 3	(n)	(n)	(n)	(n)
POLY 1.5	(n)	(n)	(n)	(n)
POLY 6	(n)	(n)	(n)	(n)
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)
HISTCONT SAME RTE	(n)	(n)	(n)	(n)
HISTCONT ALL RTES	(n)	(n)	(n)	(n)
CURR VS HC SAME RTE	(n)			
CURR VS HC ALL RTES	(n)			

TDMS No. 60311 - 06

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS

Cobalt

CAS Number: 7440-48-4

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**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN MICE(B6C3F1)
TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Adrenal Cortex Carcinoma				
TUMOR RATES				
OVERALL (a)	0/50 (0%)	0/50 (0%)	2/50 (4%)	0/48 (0%)
POLY-3 RATE (b)	0/43.79	0/44.40	2/41.56	0/38.93
POLY-3 PERCENT (g)	0%	0%	4.8%	0%
TERMINAL (d)	0/36 (0%)	0/35 (0%)	2/27 (7%)	0/26 (0%)
FIRST INCIDENCE	---	---	731 (T)	---
HC TUMORS SAME ROUTE	0/150 (0%)			
HC TUMORS ALL ROUTES	0/1193 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.545	(e)	P=0.225	(e)
POLY 1.5	P=0.566	(e)	P=0.233	(e)
POLY 6	P=0.515	(e)	P=0.212	(e)
COCH-ARM / FISHERS	P=0.587	(e)	P=0.247	(e)
MAX-ISO-POLY-3	P=0.258	(e)	P=0.076	(e)
HISTCONT SAME RTE	P=0.268	(e)	P=0.078	(e)
HISTCONT ALL RTES	P=0.022*	(e)	P<0.001**	(e)
CURR VS HC SAME RTE	P=1.000			
CURR VS HC ALL RTES	P=1.000			

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN MICE(B6C3F1)
TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Bone Marrow				
Hemangiosarcoma				
TUMOR RATES				
OVERALL (a)	0/50 (0%)	0/50 (0%)	0/50 (0%)	0/50 (0%)
POLY-3 RATE (b)	0/43.79	0/44.40	0/41.56	0/39.95
POLY-3 PERCENT (g)	0%	0%	0%	0%
TERMINAL (d)	0/36 (0%)	0/35 (0%)	0/27 (0%)	0/26 (0%)
FIRST INCIDENCE	---	---	---	---
HC TUMORS SAME ROUTE	2/150 (1%)			
HC TUMORS ALL ROUTES	10/1195 (1%)			
STATISTICAL TESTS				
POLY 3	(n)	(n)	(n)	(n)
POLY 1.5	(n)	(n)	(n)	(n)
POLY 6	(n)	(n)	(n)	(n)
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)
HISTCONT SAME RTE	(n)	(n)	(n)	(n)
HISTCONT ALL RTES	(n)	(n)	(n)	(n)
CURR VS HC SAME RTE	(n)			
CURR VS HC ALL RTES	(n)			

TDMS No. 60311 - 06

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS

Cobalt

CAS Number: 7440-48-4

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First Dose M/F: 05/15/06 / 05/15/06

Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN MICE(B6C3F1)
TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Harderian Gland Adenoma				
TUMOR RATES	#	#	#	#
OVERALL (a)	3/50 (6%)	5/50 (10%)	4/50 (8%)	3/50 (6%)
POLY-3 RATE (b)	3/43.93	5/44.48	4/42.88	3/40.61
POLY-3 PERCENT (g)	6.8%	11.2%	9.3%	7.4%
TERMINAL (d)	2/36 (6%)	4/35 (11%)	1/27 (4%)	1/26 (4%)
FIRST INCIDENCE	697	712	562	618
HC TUMORS SAME ROUTE	7/150 (5%)			
HC TUMORS ALL ROUTES	116/1198 (10%)			
STATISTICAL TESTS				
POLY 3	P=0.535N	P=0.363	P=0.487	P=0.626
POLY 1.5	P=0.507N	P=0.365	P=0.498	P=0.646
POLY 6	P=0.557	P=0.357	P=0.464	P=0.595
COCH-ARM / FISHERS	P=0.482N	P=0.357	P=0.500	P=0.661N
MAX-ISO-POLY-3	P=0.548	P=0.238	P=0.337	P=0.461
HISTCONT SAME RTE	P=0.244	P=0.097	P=0.190	P=0.436
HISTCONT ALL RTES	P=1.000	P=1.000	P=1.000	P=1.000
CURR VS HC SAME RTE	P=0.723			
CURR VS HC ALL RTES	P=0.424			

TDMS No. 60311 - 06

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS

Cobalt

CAS Number: 7440-48-4

Date Report Requested: 09/08/2011

Time Report Requested: 08:22:42

First Dose M/F: 05/15/06 / 05/15/06

Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN MICE(B6C3F1)
TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Harderian Gland Carcinoma				
TUMOR RATES	#	#	#	#
OVERALL (a)	0/50 (0%)	2/50 (4%)	0/50 (0%)	0/50 (0%)
POLY-3 RATE (b)	0/43.79	2/44.63	0/41.56	0/39.95
POLY-3 PERCENT (g)	0%	4.5%	0%	0%
TERMINAL (d)	0/36 (0%)	1/35 (3%)	0/27 (0%)	0/26 (0%)
FIRST INCIDENCE	---	671	---	---
HC TUMORS SAME ROUTE	5/150 (3%)			
HC TUMORS ALL ROUTES	26/1198 (2%)			
STATISTICAL TESTS				
POLY 3	P=0.421N	P=0.241	(e)	(e)
POLY 1.5	P=0.410N	P=0.241	(e)	(e)
POLY 6	P=0.441N	P=0.240	(e)	(e)
COCH-ARM / FISHERS	P=0.405N	P=0.247	(e)	(e)
MAX-ISO-POLY-3	P=0.291N	P=0.080	(e)	(e)
HISTCONT SAME RTE	P=1.000	P=1.000	(e)	(e)
HISTCONT ALL RTES	P=1.000	P=0.255	(e)	(e)
CURR VS HC SAME RTE	P=0.128			
CURR VS HC ALL RTES	P=0.322			

TDMS No. 60311 - 06

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS

Cobalt

CAS Number: 7440-48-4

Date Report Requested: 09/08/2011

Time Report Requested: 08:22:42

First Dose M/F: 05/15/06 / 05/15/06

Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN MICE(B6C3F1)
TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Harderian Gland Carcinoma or Adenoma				
TUMOR RATES	#	#	#	#
OVERALL (a)	3/50 (6%)	7/50 (14%)	4/50 (8%)	3/50 (6%)
POLY-3 RATE (b)	3/43.93	7/44.70	4/42.88	3/40.61
POLY-3 PERCENT (g)	6.8%	15.7%	9.3%	7.4%
TERMINAL (d)	2/36 (6%)	5/35 (14%)	1/27 (4%)	1/26 (4%)
FIRST INCIDENCE	697	671	562	618
HC TUMORS SAME ROUTE	12/150 (8%)			
HC TUMORS ALL ROUTES	142/1198 (12%)			
STATISTICAL TESTS				
POLY 3	P=0.438N	P=0.164	P=0.487	P=0.626
POLY 1.5	P=0.408N	P=0.164	P=0.498	P=0.646
POLY 6	P=0.486N	P=0.160	P=0.464	P=0.595
COCH-ARM / FISHERS	P=0.382N	P=0.159	P=0.500	P=0.661N
MAX-ISO-POLY-3	P=0.441	P=0.096	P=0.337	P=0.461
HISTCONT SAME RTE	P=0.593	P=0.116	P=1.000	P=1.000
HISTCONT ALL RTES	P=1.000	P=0.379	P=1.000	P=1.000
CURR VS HC SAME RTE	P=0.608			
CURR VS HC ALL RTES	P=0.233			

TDMS No. 60311 - 06

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS

Cobalt

CAS Number: 7440-48-4

Date Report Requested: 09/08/2011

Time Report Requested: 08:22:42

First Dose M/F: 05/15/06 / 05/15/06

Lab: BNW

STATISTICAL ANALYSIS OF PRIMARY TUMORS IN MICE(B6C3F1)
TERMINAL SACRIFICE AT 105 WEEKS

DOSE	Females			
	control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Intestine Small: Site Unspecified Adenoma				
TUMOR RATES	#	#	#	#
OVERALL (a)	0/50 (0%)	0/50 (0%)	0/50 (0%)	0/50 (0%)
POLY-3 RATE (b)	0/43.79	0/44.40	0/41.56	0/39.95
POLY-3 PERCENT (g)	0%	0%	0%	0%
TERMINAL (d)	0/36 (0%)	0/35 (0%)	0/27 (0%)	0/26 (0%)
FIRST INCIDENCE	---	---	---	---
HC TUMORS SAME ROUTE	0/150 (0%)			
HC TUMORS ALL ROUTES	2/1198 (0%)			
STATISTICAL TESTS				
POLY 3	(n)	(n)	(n)	(n)
POLY 1.5	(n)	(n)	(n)	(n)
POLY 6	(n)	(n)	(n)	(n)
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)
HISTCONT SAME RTE	(n)	(n)	(n)	(n)
HISTCONT ALL RTES	(n)	(n)	(n)	(n)
CURR VS HC SAME RTE	(n)			
CURR VS HC ALL RTES	(n)			

TDMS No. 60311 - 06

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS

Cobalt

CAS Number: 7440-48-4

Date Report Requested: 09/08/2011

Time Report Requested: 08:22:42

First Dose M/F: 05/15/06 / 05/15/06

Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN MICE(B6C3F1)
TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Intestine Small: Site Unspecified Carcinoma or Adenoma				
TUMOR RATES	#	#	#	#
OVERALL (a)	1/50 (2%)	1/50 (2%)	0/50 (0%)	0/50 (0%)
POLY-3 RATE (b)	1/43.79	1/44.40	0/41.56	0/39.95
POLY-3 PERCENT (g)	2.3%	2.3%	0%	0%
TERMINAL (d)	1/36 (3%)	1/35 (3%)	0/27 (0%)	0/26 (0%)
FIRST INCIDENCE	731 (T)	731 (T)	---	---
HC TUMORS SAME ROUTE	0/150 (0%)			
HC TUMORS ALL ROUTES	8/1198 (1%)			
STATISTICAL TESTS				
POLY 3	(n)	(n)	(n)	(n)
POLY 1.5	(n)	(n)	(n)	(n)
POLY 6	(n)	(n)	(n)	(n)
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)
HISTCONT SAME RTE	(n)	(n)	(n)	(n)
HISTCONT ALL RTES	(n)	(n)	(n)	(n)
CURR VS HC SAME RTE	(n)			
CURR VS HC ALL RTES	(n)			

TDMS No. 60311 - 06

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS

Cobalt

CAS Number: 7440-48-4

Date Report Requested: 09/08/2011

Time Report Requested: 08:22:42

First Dose M/F: 05/15/06 / 05/15/06

Lab: BNW

STATISTICAL ANALYSIS OF PRIMARY TUMORS IN MICE(B6C3F1)
TERMINAL SACRIFICE AT 105 WEEKS

DOSE	Females			
	control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Islets, Pancreatic Carcinoma				
TUMOR RATES				
OVERALL (a)	0/50 (0%)	0/50 (0%)	0/50 (0%)	0/49 (0%)
POLY-3 RATE (b)	0/43.79	0/44.40	0/41.56	0/39.36
POLY-3 PERCENT (g)	0%	0%	0%	0%
TERMINAL (d)	0/36 (0%)	0/35 (0%)	0/27 (0%)	0/26 (0%)
FIRST INCIDENCE	---	---	---	---
HC TUMORS SAME ROUTE	0/150 (0%)			
HC TUMORS ALL ROUTES	3/1185 (0%)			
STATISTICAL TESTS				
POLY 3	(n)	(n)	(n)	(n)
POLY 1.5	(n)	(n)	(n)	(n)
POLY 6	(n)	(n)	(n)	(n)
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)
HISTCONT SAME RTE	(n)	(n)	(n)	(n)
HISTCONT ALL RTES	(n)	(n)	(n)	(n)
CURR VS HC SAME RTE	(n)			
CURR VS HC ALL RTES	(n)			

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN MICE(B6C3F1)
TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Islets, Pancreatic Carcinoma or Adenoma				
TUMOR RATES				
OVERALL (a)	0/50 (0%)	0/50 (0%)	0/50 (0%)	0/49 (0%)
POLY-3 RATE (b)	0/43.79	0/44.40	0/41.56	0/39.36
POLY-3 PERCENT (g)	0%	0%	0%	0%
TERMINAL (d)	0/36 (0%)	0/35 (0%)	0/27 (0%)	0/26 (0%)
FIRST INCIDENCE	---	---	---	---
HC TUMORS SAME ROUTE	0/150 (0%)			
HC TUMORS ALL ROUTES	14/1185 (1%)			
STATISTICAL TESTS				
POLY 3	(n)	(n)	(n)	(n)
POLY 1.5	(n)	(n)	(n)	(n)
POLY 6	(n)	(n)	(n)	(n)
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)
HISTCONT SAME RTE	(n)	(n)	(n)	(n)
HISTCONT ALL RTES	(n)	(n)	(n)	(n)
CURR VS HC SAME RTE	(n)			
CURR VS HC ALL RTES	(n)			

TDMS No. 60311 - 06

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS

Cobalt

CAS Number: 7440-48-4

Date Report Requested: 09/08/2011

Time Report Requested: 08:22:42

First Dose M/F: 05/15/06 / 05/15/06

Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN MICE(B6C3F1)
TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Liver				
Hemangiosarcoma				
TUMOR RATES				
OVERALL (a)	2/50 (4%)	1/50 (2%)	0/50 (0%)	0/50 (0%)
POLY-3 RATE (b)	2/43.82	1/44.40	0/41.56	0/39.95
POLY-3 PERCENT (g)	4.6%	2.3%	0%	0%
TERMINAL (d)	1/36 (3%)	1/35 (3%)	0/27 (0%)	0/26 (0%)
FIRST INCIDENCE	725	731 (T)	---	---
HC TUMORS SAME ROUTE	3/150 (2%)			
HC TUMORS ALL ROUTES	13/1195 (1%)			
STATISTICAL TESTS				
POLY 3	P=0.105N	P=0.495N	P=0.249N	P=0.258N
POLY 1.5	P=0.103N	P=0.495N	P=0.241N	P=0.247N
POLY 6	P=0.110N	P=0.499N	P=0.263N	P=0.277N
COCH-ARM / FISHERS	P=0.101N	P=0.500N	P=0.247N	P=0.247N
MAX-ISO-POLY-3	P=0.104N	P=0.278N	P=0.087N	P=0.096N
HISTCONT SAME RTE	(h)	(h)	(h)	(h)
HISTCONT ALL RTEs	P=1.000	P=1.000	P=1.000	P=1.000
CURR VS HC SAME RTE	P=0.515			
CURR VS HC ALL RTEs	P=0.058			

TDMS No. 60311 - 06

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS

Cobalt

CAS Number: 7440-48-4

Date Report Requested: 09/08/2011

Time Report Requested: 08:22:42

First Dose M/F: 05/15/06 / 05/15/06

Lab: BNW

STATISTICAL ANALYSIS OF PRIMARY TUMORS IN MICE(B6C3F1)
TERMINAL SACRIFICE AT 105 WEEKS

DOSE	Females			
	control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Liver				
Hepatoblastoma				
TUMOR RATES				
OVERALL (a)	0/50 (0%)	0/50 (0%)	0/50 (0%)	0/50 (0%)
POLY-3 RATE (b)	0/43.79	0/44.40	0/41.56	0/39.95
POLY-3 PERCENT (g)	0%	0%	0%	0%
TERMINAL (d)	0/36 (0%)	0/35 (0%)	0/27 (0%)	0/26 (0%)
FIRST INCIDENCE	---	---	---	---
HC TUMORS SAME ROUTE	0/150 (0%)			
HC TUMORS ALL ROUTES	4/1195 (0%)			
STATISTICAL TESTS				
POLY 3	(n)	(n)	(n)	(n)
POLY 1.5	(n)	(n)	(n)	(n)
POLY 6	(n)	(n)	(n)	(n)
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)
HISTCONT SAME RTE	(n)	(n)	(n)	(n)
HISTCONT ALL RTES	(n)	(n)	(n)	(n)
CURR VS HC SAME RTE	(n)			
CURR VS HC ALL RTES	(n)			

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN MICE(B6C3F1)
TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Liver				
Hepatocellular Adenoma				
TUMOR RATES				
OVERALL (a)	19/50 (38%)	18/50 (36%)	10/50 (20%)	2/50 (4%)
POLY-3 RATE (b)	19/44.62	18/44.48	10/42.27	2/39.95
POLY-3 PERCENT (g)	42.6%	40.5%	23.7%	5%
TERMINAL (d)	16/36 (44%)	17/35 (49%)	7/27 (26%)	2/26 (8%)
FIRST INCIDENCE	499	712	646	731 (T)
HC TUMORS SAME ROUTE	47/150 (31%)			
HC TUMORS ALL ROUTES	380/1195 (32%)			
STATISTICAL TESTS				
POLY 3	P<0.001N**	P=0.505N	P=0.046N*	P<0.001N**
POLY 1.5	P<0.001N**	P=0.492N	P=0.039N*	P<0.001N**
POLY 6	P<0.001N**	P=0.532N	P=0.064N	P<0.001N**
COCH-ARM / FISHERS	P<0.001N**	P=0.500N	P=0.038N*	P<0.001N**
MAX-ISO-POLY-3	P<0.001N**	P=0.417N	P=0.031N*	P<0.001N**
HISTCONT SAME RTE	P=1.000	P=0.213	P=1.000	P=1.000
HISTCONT ALL RTES	P=1.000	P=0.383	P=1.000	P=1.000
CURR VS HC SAME RTE	P=0.369			
CURR VS HC ALL RTES	P=0.319			

TDMS No. 60311 - 06

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS

Cobalt

CAS Number: 7440-48-4

Date Report Requested: 09/08/2011

Time Report Requested: 08:22:42

First Dose M/F: 05/15/06 / 05/15/06

Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN MICE(B6C3F1)
TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Liver				
Hepatocellular Carcinoma				
TUMOR RATES				
OVERALL (a)	10/50 (20%)	7/50 (14%)	5/50 (10%)	2/50 (4%)
POLY-3 RATE (b)	10/45.05	7/44.66	5/41.94	2/40.94
POLY-3 PERCENT (g)	22.2%	15.7%	11.9%	4.9%
TERMINAL (d)	7/36 (19%)	6/35 (17%)	3/27 (11%)	0/26 (0%)
FIRST INCIDENCE	499	661	646	506
HC TUMORS SAME ROUTE	16/150 (11%)			
HC TUMORS ALL ROUTES	144/1195 (12%)			
STATISTICAL TESTS				
POLY 3	P=0.013N*	P=0.302N	P=0.162N	P=0.020N*
POLY 1.5	P=0.011N*	P=0.295N	P=0.142N	P=0.016N*
POLY 6	P=0.019N*	P=0.318N	P=0.199N	P=0.029N*
COCH-ARM / FISHERS	P=0.009N**	P=0.298N	P=0.131N	P=0.014N*
MAX-ISO-POLY-3	P=0.019N*	P=0.217N	P=0.109N	P=0.012N*
HISTCONT SAME RTE	P=1.000	P=0.302	P=1.000	P=1.000
HISTCONT ALL RTES	P=1.000	P=0.440	P=1.000	P=1.000
CURR VS HC SAME RTE	P=0.099			
CURR VS HC ALL RTES	P=0.098			

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN MICE(B6C3F1)
TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Liver				
Hepatocellular Carcinoma or Hepatoblastoma				
TUMOR RATES				
OVERALL (a)	10/50 (20%)	7/50 (14%)	5/50 (10%)	2/50 (4%)
POLY-3 RATE (b)	10/45.05	7/44.66	5/41.94	2/40.94
POLY-3 PERCENT (g)	22.2%	15.7%	11.9%	4.9%
TERMINAL (d)	7/36 (19%)	6/35 (17%)	3/27 (11%)	0/26 (0%)
FIRST INCIDENCE	499	661	646	506
HC TUMORS SAME ROUTE	16/150 (11%)			
HC TUMORS ALL ROUTES	148/1195 (12%)			
STATISTICAL TESTS				
POLY 3	P=0.013N*	P=0.302N	P=0.162N	P=0.020N*
POLY 1.5	P=0.011N*	P=0.295N	P=0.142N	P=0.016N*
POLY 6	P=0.019N*	P=0.318N	P=0.199N	P=0.029N*
COCH-ARM / FISHERS	P=0.009N**	P=0.298N	P=0.131N	P=0.014N*
MAX-ISO-POLY-3	P=0.019N*	P=0.217N	P=0.109N	P=0.012N*
HISTCONT SAME RTE	P=1.000	P=0.302	P=1.000	P=1.000
HISTCONT ALL RTES	P=1.000	P=0.458	P=1.000	P=1.000
CURR VS HC SAME RTE	P=0.099			
CURR VS HC ALL RTES	P=0.117			

TDMS No. 60311 - 06

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS

Cobalt

CAS Number: 7440-48-4

Date Report Requested: 09/08/2011

Time Report Requested: 08:22:42

First Dose M/F: 05/15/06 / 05/15/06

Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN MICE(B6C3F1)
TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Liver				
Hepatocellular Carcinoma or Hepatocellular Adenoma				
TUMOR RATES				
OVERALL (a)	25/50 (50%)	21/50 (42%)	13/50 (26%)	4/50 (8%)
POLY-3 RATE (b)	25/45.20	21/44.74	13/42.34	4/40.94
POLY-3 PERCENT (g)	55.3%	46.9%	30.7%	9.8%
TERMINAL (d)	20/36 (56%)	19/35 (54%)	9/27 (33%)	2/26 (8%)
FIRST INCIDENCE	499	661	646	506
HC TUMORS SAME ROUTE	60/150 (40%)			
HC TUMORS ALL ROUTES	444/1195 (37%)			
STATISTICAL TESTS				
POLY 3	P<0.001N**	P=0.277N	P=0.014N*	P<0.001N**
POLY 1.5	P<0.001N**	P=0.263N	P=0.010N**	P<0.001N**
POLY 6	P<0.001N**	P=0.310N	P=0.025N*	P<0.001N**
COCH-ARM / FISHERS	P<0.001N**	P=0.274N	P=0.011N*	P<0.001N**
MAX-ISO-POLY-3	P<0.001N**	P=0.211N	P=0.010N**	P<0.001N**
HISTCONT SAME RTE	P=1.000	P=0.474	P=1.000	P=1.000
HISTCONT ALL RTES	P=1.000	P=0.369	P=1.000	P=1.000
CURR VS HC SAME RTE	P=0.241			
CURR VS HC ALL RTES	P=0.056			

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN MICE(B6C3F1)
TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Liver				
Hepatocellular Carcinoma, Hepatocellular Adenoma, or Hepatoblastoma				
TUMOR RATES				
OVERALL (a)	25/50 (50%)	21/50 (42%)	13/50 (26%)	4/50 (8%)
POLY-3 RATE (b)	25/45.20	21/44.74	13/42.34	4/40.94
POLY-3 PERCENT (g)	55.3%	46.9%	30.7%	9.8%
TERMINAL (d)	20/36 (56%)	19/35 (54%)	9/27 (33%)	2/26 (8%)
FIRST INCIDENCE	499	661	646	506
HC TUMORS SAME ROUTE	60/150 (40%)			
HC TUMORS ALL ROUTES	444/1195 (37%)			
STATISTICAL TESTS				
POLY 3	P<0.001N**	P=0.277N	P=0.014N*	P<0.001N**
POLY 1.5	P<0.001N**	P=0.263N	P=0.010N**	P<0.001N**
POLY 6	P<0.001N**	P=0.310N	P=0.025N*	P<0.001N**
COCH-ARM / FISHERS	P<0.001N**	P=0.274N	P=0.011N*	P<0.001N**
MAX-ISO-POLY-3	P<0.001N**	P=0.211N	P=0.010N**	P<0.001N**
HISTCONT SAME RTE	P=1.000	P=0.474	P=1.000	P=1.000
HISTCONT ALL RTES	P=1.000	P=0.369	P=1.000	P=1.000
CURR VS HC SAME RTE	P=0.241			
CURR VS HC ALL RTES	P=0.056			

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN MICE(B6C3F1)
TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Lung				
Alveolar/Bronchiolar Adenoma				
TUMOR RATES				
OVERALL (a)	3/49 (6%)	9/50 (18%)	8/50 (16%)	10/50 (20%)
POLY-3 RATE (b)	3/43.65	9/45.26	8/42.24	10/40.88
POLY-3 PERCENT (g)	6.9%	19.9%	18.9%	24.5%
TERMINAL (d)	3/36 (8%)	7/35 (20%)	6/27 (22%)	6/26 (23%)
FIRST INCIDENCE	731 (T)	505	626	593
HC TUMORS SAME ROUTE	9/150 (6%)			
HC TUMORS ALL ROUTES	60/1196 (5%)			
STATISTICAL TESTS				
POLY 3	P=0.037*	P=0.067	P=0.087	P=0.024*
POLY 1.5	P=0.049*	P=0.067	P=0.097	P=0.030*
POLY 6	P=0.024*	P=0.065	P=0.072	P=0.017*
COCH-ARM / FISHERS	P=0.066	P=0.065	P=0.106	P=0.039*
MAX-ISO-POLY-3	P=0.030*	P=0.037*	P=0.049*	P=0.014*
HISTCONT SAME RTE	P=0.035*	P=0.066	P=0.082	P=0.048*
HISTCONT ALL RTES	P<0.001**	P<0.001**	P<0.001**	P<0.001**
CURR VS HC SAME RTE	P=0.984			
CURR VS HC ALL RTES	P=0.721			

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN MICE(B6C3F1)
TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Lung				
Alveolar/Bronchiolar Carcinoma				
TUMOR RATES				
OVERALL (a)	5/49 (10%)	25/50 (50%)	38/50 (76%)	43/50 (86%)
POLY-3 RATE (b)	5/44.44	25/46.46	38/48.14	43/49.03
POLY-3 PERCENT (g)	11.3%	53.8%	78.9%	87.7%
TERMINAL (d)	3/36 (8%)	18/35 (51%)	19/27 (70%)	21/26 (81%)
FIRST INCIDENCE	583	537	457	478
HC TUMORS SAME ROUTE	3/150 (2%)			
HC TUMORS ALL ROUTES	44/1196 (4%)			
STATISTICAL TESTS				
POLY 3	P<0.001**	P<0.001**	P<0.001**	P<0.001**
POLY 1.5	P<0.001**	P<0.001**	P<0.001**	P<0.001**
POLY 6	P<0.001**	P<0.001**	P<0.001**	P<0.001**
COCH-ARM / FISHERS	P<0.001**	P<0.001**	P<0.001**	P<0.001**
MAX-ISO-POLY-3	P<0.001**	P<0.001**	P<0.001**	P<0.001**
HISTCONT SAME RTE	P<0.001**	P=0.005**	P<0.001**	P<0.001**
HISTCONT ALL RTES	P<0.001**	P<0.001**	P<0.001**	P<0.001**
CURR VS HC SAME RTE	P=0.037*			
CURR VS HC ALL RTES	P=0.022*			

TDMS No. 60311 - 06

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS

Cobalt

CAS Number: 7440-48-4

Date Report Requested: 09/08/2011

Time Report Requested: 08:22:42

First Dose M/F: 05/15/06 / 05/15/06

Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN MICE(B6C3F1)
TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Lung				
Alveolar/Bronchiolar Carcinoma or Alveolar/Bronchiolar Adenoma				
TUMOR RATES				
OVERALL (a)	8/49 (16%)	30/50 (60%)	41/50 (82%)	45/50 (90%)
POLY-3 RATE (b)	8/44.44	30/47.13	41/48.45	45/49.11
POLY-3 PERCENT (g)	18%	63.7%	84.6%	91.6%
TERMINAL (d)	6/36 (17%)	22/35 (63%)	21/27 (78%)	22/26 (85%)
FIRST INCIDENCE	583	505	457	478
HC TUMORS SAME ROUTE	12/150 (8%)			
HC TUMORS ALL ROUTES	100/1196 (8%)			
STATISTICAL TESTS				
POLY 3	P<0.001**	P<0.001**	P<0.001**	P<0.001**
POLY 1.5	P<0.001**	P<0.001**	P<0.001**	P<0.001**
POLY 6	P<0.001**	P<0.001**	P<0.001**	P<0.001**
COCH-ARM / FISHERS	P<0.001**	P<0.001**	P<0.001**	P<0.001**
MAX-ISO-POLY-3	P<0.001**	P<0.001**	P<0.001**	P<0.001**
HISTCONT SAME RTE	P<0.001**	P=0.006**	P<0.001**	P<0.001**
HISTCONT ALL RTES	P<0.001**	P<0.001**	P<0.001**	P<0.001**
CURR VS HC SAME RTE	P=0.172			
CURR VS HC ALL RTES	P=0.050*			

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN MICE(B6C3F1)
TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Ovary				
Cystadenoma				
TUMOR RATES				
OVERALL (a)	1/48 (2%)	4/50 (8%)	0/50 (0%)	3/50 (6%)
POLY-3 RATE (b)	1/42.65	4/44.81	0/41.56	3/40.34
POLY-3 PERCENT (g)	2.3%	8.9%	0%	7.4%
TERMINAL (d)	1/35 (3%)	3/35 (9%)	0/27 (0%)	2/26 (8%)
FIRST INCIDENCE	731 (T)	614	---	618
HC TUMORS SAME ROUTE	8/149 (5%)			
HC TUMORS ALL ROUTES	55/1179 (5%)			
STATISTICAL TESTS				
POLY 3	P=0.374	P=0.194	P=0.505N	P=0.285
POLY 1.5	P=0.396	P=0.194	P=0.498N	P=0.302
POLY 6	P=0.342	P=0.192	P=0.518N	P=0.261
COCH-ARM / FISHERS	P=0.417	P=0.194	P=0.490N	P=0.324
MAX-ISO-POLY-3	P=0.236	P=0.096	P=0.168N	P=0.148
HISTCONT SAME RTE	P=0.530	P=0.222	P=1.000	P=1.000
HISTCONT ALL RTES	P=0.485	P=0.150	P=1.000	P=0.362
CURR VS HC SAME RTE	P=0.268			
CURR VS HC ALL RTES	P=0.417			

TDMS No. 60311 - 06

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS

Cobalt

CAS Number: 7440-48-4

Date Report Requested: 09/08/2011

Time Report Requested: 08:22:42

First Dose M/F: 05/15/06 / 05/15/06

Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN MICE(B6C3F1)
TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Pituitary Gland: Pars Distalis or Unspecified Site Adenoma				
TUMOR RATES				
OVERALL (a)	3/47 (6%)	4/50 (8%)	1/48 (2%)	0/49 (0%)
POLY-3 RATE (b)	3/41.95	4/44.63	1/40.15	0/38.95
POLY-3 PERCENT (g)	7.2%	9%	2.5%	0%
TERMINAL (d)	2/34 (6%)	3/35 (9%)	0/27 (0%)	0/25 (0%)
FIRST INCIDENCE	649	671	646	---
HC TUMORS SAME ROUTE	21/145 (15%)			
HC TUMORS ALL ROUTES	76/1175 (7%)			
STATISTICAL TESTS				
POLY 3	P=0.052N	P=0.534	P=0.321N	P=0.132N
POLY 1.5	P=0.046N*	P=0.537	P=0.307N	P=0.121N
POLY 6	P=0.063N	P=0.528	P=0.342N	P=0.150N
COCH-ARM / FISHERS	P=0.041N*	P=0.535	P=0.301N	P=0.113N
MAX-ISO-POLY-3	P=0.081N	P=0.380	P=0.171N	P=0.051N
HISTCONT SAME RTE	(h)	(h)	(h)	(h)
HISTCONT ALL RTES	P=1.000	P=0.434	P=1.000	P=1.000
CURR VS HC SAME RTE	P=0.124			
CURR VS HC ALL RTES	P=1.000			

TDMS No. 60311 - 06

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS

Cobalt

CAS Number: 7440-48-4

Date Report Requested: 09/08/2011

Time Report Requested: 08:22:42

First Dose M/F: 05/15/06 / 05/15/06

Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN MICE(B6C3F1)
TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Skin				
Fibroma, Fibrosarcoma, Sarcoma, Myxoma, Myxosarcoma, or Fibrous Histiocytoma				
TUMOR RATES	#	#	#	#
OVERALL (a)	2/50 (4%)	3/50 (6%)	2/50 (4%)	0/50 (0%)
POLY-3 RATE (b)	2/44.09	3/45.75	2/42.06	0/39.95
POLY-3 PERCENT (g)	4.5%	6.6%	4.8%	0%
TERMINAL (d)	1/36 (3%)	0/35 (0%)	0/27 (0%)	0/26 (0%)
FIRST INCIDENCE	649	506	626	---
HC TUMORS SAME ROUTE	13/150 (9%)			
HC TUMORS ALL ROUTES	62/1198 (5%)			
STATISTICAL TESTS				
POLY 3	P=0.163N	P=0.517	P=0.677	P=0.260N
POLY 1.5	P=0.148N	P=0.513	P=0.688	P=0.248N
POLY 6	P=0.189N	P=0.518	P=0.657	P=0.279N
COCH-ARM / FISHERS	P=0.134N	P=0.500	P=0.691N	P=0.247N
MAX-ISO-POLY-3	P=0.180N	P=0.341	P=0.480	P=0.097N
HISTCONT SAME RTE	(h)	(h)	(h)	(h)
HISTCONT ALL RTES	P=1.000	P=1.000	P=1.000	P=1.000
CURR VS HC SAME RTE	P=0.367			
CURR VS HC ALL RTES	P=0.748			

TDMS No. 60311 - 06

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS

Cobalt

CAS Number: 7440-48-4

Date Report Requested: 09/08/2011

Time Report Requested: 08:22:42

First Dose M/F: 05/15/06 / 05/15/06

Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN MICE(B6C3F1)
TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Skin				
Fibrosarcoma, Sarcoma, Myxosarcoma, or Fibrous Histiocytoma				
TUMOR RATES	#	#	#	#
OVERALL (a)	2/50 (4%)	3/50 (6%)	2/50 (4%)	0/50 (0%)
POLY-3 RATE (b)	2/44.09	3/45.75	2/42.06	0/39.95
POLY-3 PERCENT (g)	4.5%	6.6%	4.8%	0%
TERMINAL (d)	1/36 (3%)	0/35 (0%)	0/27 (0%)	0/26 (0%)
FIRST INCIDENCE	649	506	626	---
HC TUMORS SAME ROUTE	13/150 (9%)			
HC TUMORS ALL ROUTES	62/1198 (5%)			
STATISTICAL TESTS				
POLY 3	P=0.163N	P=0.517	P=0.677	P=0.260N
POLY 1.5	P=0.148N	P=0.513	P=0.688	P=0.248N
POLY 6	P=0.189N	P=0.518	P=0.657	P=0.279N
COCH-ARM / FISHERS	P=0.134N	P=0.500	P=0.691N	P=0.247N
MAX-ISO-POLY-3	P=0.180N	P=0.341	P=0.480	P=0.097N
HISTCONT SAME RTE	(h)	(h)	(h)	(h)
HISTCONT ALL RTES	P=1.000	P=1.000	P=1.000	P=1.000
CURR VS HC SAME RTE	P=0.367			
CURR VS HC ALL RTES	P=0.748			

TDMS No. 60311 - 06

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS

Cobalt

CAS Number: 7440-48-4

Date Report Requested: 09/08/2011

Time Report Requested: 08:22:42

First Dose M/F: 05/15/06 / 05/15/06

Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN MICE(B6C3F1)
TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Skin				
Hemangiosarcoma				
TUMOR RATES	#	#	#	#
OVERALL (a)	0/50 (0%)	2/50 (4%)	0/50 (0%)	0/50 (0%)
POLY-3 RATE (b)	0/43.79	2/44.40	0/41.56	0/39.95
POLY-3 PERCENT (g)	0%	4.5%	0%	0%
TERMINAL (d)	0/36 (0%)	2/35 (6%)	0/27 (0%)	0/26 (0%)
FIRST INCIDENCE	---	731 (T)	---	---
HC TUMORS SAME ROUTE	1/150 (1%)			
HC TUMORS ALL ROUTES	13/1198 (1%)			
STATISTICAL TESTS				
POLY 3	P=0.422N	P=0.240	(e)	(e)
POLY 1.5	P=0.411N	P=0.241	(e)	(e)
POLY 6	P=0.442N	P=0.238	(e)	(e)
COCH-ARM / FISHERS	P=0.405N	P=0.247	(e)	(e)
MAX-ISO-POLY-3	P=0.290N	P=0.079	(e)	(e)
HISTCONT SAME RTE	P=0.600	P=0.135	(e)	(e)
HISTCONT ALL RTEs	P=0.691	P=0.045*	(e)	(e)
CURR VS HC SAME RTE	P=0.395			
CURR VS HC ALL RTEs	P=0.513			

TDMS No. 60311 - 06

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS

Cobalt

CAS Number: 7440-48-4

Date Report Requested: 09/08/2011

Time Report Requested: 08:22:42

First Dose M/F: 05/15/06 / 05/15/06

Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN MICE(B6C3F1)
TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Skin				
Sarcoma				
TUMOR RATES	#	#	#	#
OVERALL (a)	2/50 (4%)	3/50 (6%)	2/50 (4%)	0/50 (0%)
POLY-3 RATE (b)	2/44.09	3/45.75	2/42.06	0/39.95
POLY-3 PERCENT (g)	4.5%	6.6%	4.8%	0%
TERMINAL (d)	1/36 (3%)	0/35 (0%)	0/27 (0%)	0/26 (0%)
FIRST INCIDENCE	649	506	626	---
HC TUMORS SAME ROUTE	12/150 (8%)			
HC TUMORS ALL ROUTES	29/1198 (2%)			
STATISTICAL TESTS				
POLY 3	P=0.163N	P=0.517	P=0.677	P=0.260N
POLY 1.5	P=0.148N	P=0.513	P=0.688	P=0.248N
POLY 6	P=0.189N	P=0.518	P=0.657	P=0.279N
COCH-ARM / FISHERS	P=0.134N	P=0.500	P=0.691N	P=0.247N
MAX-ISO-POLY-3	P=0.180N	P=0.341	P=0.480	P=0.097N
HISTCONT SAME RTE	(h)	(h)	(h)	(h)
HISTCONT ALL RTES	P=0.639	P=0.151	P=0.382	P=1.000
CURR VS HC SAME RTE	P=0.401			
CURR VS HC ALL RTES	P=0.475			

TDMS No. 60311 - 06

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS

Cobalt

CAS Number: 7440-48-4

Date Report Requested: 09/08/2011

Time Report Requested: 08:22:42

First Dose M/F: 05/15/06 / 05/15/06

Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN MICE(B6C3F1)
TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Spleen				
Hemangiosarcoma				
TUMOR RATES				
OVERALL (a)	2/49 (4%)	0/49 (0%)	1/48 (2%)	0/49 (0%)
POLY-3 RATE (b)	2/43.67	0/43.66	1/40.44	0/39.36
POLY-3 PERCENT (g)	4.6%	0%	2.5%	0%
TERMINAL (d)	1/36 (3%)	0/35 (0%)	1/27 (4%)	0/26 (0%)
FIRST INCIDENCE	725	---	731 (T)	---
HC TUMORS SAME ROUTE	4/150 (3%)			
HC TUMORS ALL ROUTES	22/1181 (2%)			
STATISTICAL TESTS				
POLY 3	P=0.201N	P=0.237N	P=0.527N	P=0.261N
POLY 1.5	P=0.196N	P=0.236N	P=0.515N	P=0.249N
POLY 6	P=0.208N	P=0.239N	P=0.546N	P=0.279N
COCH-ARM / FISHERS	P=0.189N	P=0.247N	P=0.508N	P=0.247N
MAX-ISO-POLY-3	P=0.108N	P=0.076N	P=0.308N	P=0.098N
HISTCONT SAME RTE	(h)	(h)	(h)	(h)
HISTCONT ALL RTES	P=1.000	P=1.000	P=1.000	P=1.000
CURR VS HC SAME RTE	P=0.626			
CURR VS HC ALL RTES	P=0.270			

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN MICE(B6C3F1)
TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Uterus				
Hemangiosarcoma				
TUMOR RATES	#	#	#	#
OVERALL (a)	0/50 (0%)	2/50 (4%)	0/50 (0%)	0/50 (0%)
POLY-3 RATE (b)	0/43.79	2/44.48	0/41.56	0/39.95
POLY-3 PERCENT (g)	0%	4.5%	0%	0%
TERMINAL (d)	0/36 (0%)	1/35 (3%)	0/27 (0%)	0/26 (0%)
FIRST INCIDENCE	---	712	---	---
HC TUMORS SAME ROUTE	1/150 (1%)			
HC TUMORS ALL ROUTES	2/1198 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.422N	P=0.241	(e)	(e)
POLY 1.5	P=0.411N	P=0.241	(e)	(e)
POLY 6	P=0.442N	P=0.239	(e)	(e)
COCH-ARM / FISHERS	P=0.405N	P=0.247	(e)	(e)
MAX-ISO-POLY-3	P=0.290N	P=0.079	(e)	(e)
HISTCONT SAME RTE	P=0.602	P=0.140	(e)	(e)
HISTCONT ALL RTES	P=0.222	P<0.001**	(e)	(e)
CURR VS HC SAME RTE	P=0.447			
CURR VS HC ALL RTES	P=0.537			

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN MICE(B6C3F1)
TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Uterus				
Polyp Stromal				
TUMOR RATES	#	#	#	#
OVERALL (a)	2/50 (4%)	1/50 (2%)	1/50 (2%)	1/50 (2%)
POLY-3 RATE (b)	2/44.76	1/45.00	1/41.56	1/39.95
POLY-3 PERCENT (g)	4.5%	2.2%	2.4%	2.5%
TERMINAL (d)	1/36 (3%)	0/35 (0%)	1/27 (4%)	1/26 (4%)
FIRST INCIDENCE	223	537	731 (T)	731 (T)
HC TUMORS SAME ROUTE	2/150 (1%)			
HC TUMORS ALL ROUTES	24/1198 (2%)			
STATISTICAL TESTS				
POLY 3	P=0.439N	P=0.498N	P=0.526N	P=0.540N
POLY 1.5	P=0.426N	P=0.498N	P=0.513N	P=0.521N
POLY 6	P=0.459N	P=0.500N	P=0.548N	P=0.566N
COCH-ARM / FISHERS	P=0.409N	P=0.500N	P=0.500N	P=0.500N
MAX-ISO-POLY-3	P=0.475N	P=0.279N	P=0.308N	P=0.323N
HISTCONT SAME RTE	P=0.383	P=1.000	P=1.000	P=1.000
HISTCONT ALL RTES	P=0.740	P=1.000	P=1.000	P=1.000
CURR VS HC SAME RTE	P=0.226			
CURR VS HC ALL RTES	P=0.337			

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN MICE(B6C3F1)
TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
All Organs				
Hemangiosarcoma				
TUMOR RATES	#	#	#	#
OVERALL (a)	3/50 (6%)	6/50 (12%)	3/50 (6%)	0/50 (0%)
POLY-3 RATE (b)	3/43.82	6/44.48	3/41.65	0/39.95
POLY-3 PERCENT (g)	6.9%	13.5%	7.2%	0%
TERMINAL (d)	2/36 (6%)	5/35 (14%)	2/27 (7%)	0/26 (0%)
FIRST INCIDENCE	725	712	709	---
HC TUMORS SAME ROUTE	11/150 (7%)			
HC TUMORS ALL ROUTES	54/1198 (5%)			
STATISTICAL TESTS				
POLY 3	P=0.070N	P=0.249	P=0.639	P=0.136N
POLY 1.5	P=0.060N	P=0.250	P=0.654	P=0.127N
POLY 6	P=0.090N	P=0.244	P=0.611	P=0.152N
COCH-ARM / FISHERS	P=0.054N	P=0.243	P=0.661N	P=0.121N
MAX-ISO-POLY-3	P=0.064N	P=0.153	P=0.474	P=0.052N
HISTCONT SAME RTE	P=1.000	P=0.153	P=1.000	P=1.000
HISTCONT ALL RTES	P=0.574	P=0.014*	P=0.387	P=1.000
CURR VS HC SAME RTE	P=0.715			
CURR VS HC ALL RTES	P=0.599			

TDMS No. 60311 - 06

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS

Cobalt

CAS Number: 7440-48-4

Date Report Requested: 09/08/2011

Time Report Requested: 08:22:42

First Dose M/F: 05/15/06 / 05/15/06

Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN MICE(B6C3F1)
TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
All Organs				
Hemangiosarcoma or Hemangioma				
TUMOR RATES	#	#	#	#
OVERALL (a)	3/50 (6%)	7/50 (14%)	3/50 (6%)	1/50 (2%)
POLY-3 RATE (b)	3/43.82	7/44.78	3/41.65	1/40.21
POLY-3 PERCENT (g)	6.9%	15.6%	7.2%	2.5%
TERMINAL (d)	2/36 (6%)	5/35 (14%)	2/27 (7%)	0/26 (0%)
FIRST INCIDENCE	725	649	709	660
HC TUMORS SAME ROUTE	11/150 (7%)			
HC TUMORS ALL ROUTES	65/1198 (5%)			
STATISTICAL TESTS				
POLY 3	P=0.140N	P=0.165	P=0.639	P=0.336N
POLY 1.5	P=0.123N	P=0.165	P=0.654	P=0.320N
POLY 6	P=0.171N	P=0.163	P=0.611	P=0.363N
COCH-ARM / FISHERS	P=0.112N	P=0.159	P=0.661N	P=0.309N
MAX-ISO-POLY-3	P=0.126N	P=0.098	P=0.474	P=0.186N
HISTCONT SAME RTE	P=0.758	P=0.086	P=1.000	P=1.000
HISTCONT ALL RTES	P=0.524	P=0.007**	P=1.000	P=1.000
CURR VS HC SAME RTE	P=0.715			
CURR VS HC ALL RTES	P=0.826			

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN MICE(B6C3F1)
TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
All Organs				
Malignant Lymphoma: Histiocytic, Lymphocytic, Mixed, NOS, or Undifferentiated Cell Type				
TUMOR RATES	#	#	#	#
OVERALL (a)	14/50 (28%)	14/50 (28%)	12/50 (24%)	4/50 (8%)
POLY-3 RATE (b)	14/44.17	14/46.96	12/42.82	4/40.17
POLY-3 PERCENT (g)	31.7%	29.8%	28%	10%
TERMINAL (d)	11/36 (31%)	8/35 (23%)	8/27 (30%)	3/26 (12%)
FIRST INCIDENCE	697	391	537	673
HC TUMORS SAME ROUTE	37/150 (25%)			
HC TUMORS ALL ROUTES	250/1198 (21%)			
STATISTICAL TESTS				
POLY 3	P=0.011N*	P=0.513N	P=0.444N	P=0.013N*
POLY 1.5	P=0.008N**	P=0.533N	P=0.416N	P=0.010N**
POLY 6	P=0.021N*	P=0.500N	P=0.502N	P=0.020N*
COCH-ARM / FISHERS	P=0.006N**	P=0.588N	P=0.410N	P=0.009N**
MAX-ISO-POLY-3	P=0.017N*	P=0.423N	P=0.355N	P=0.008N**
HISTCONT SAME RTE	P=1.000	P=0.469	P=1.000	P=1.000
HISTCONT ALL RTES	P=0.778	P=0.202	P=0.303	P=1.000
CURR VS HC SAME RTE	P=0.664			
CURR VS HC ALL RTES	P=0.184			

TDMS No. 60311 - 06

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS

Cobalt

CAS Number: 7440-48-4

Date Report Requested: 09/08/2011

Time Report Requested: 08:22:42

First Dose M/F: 05/15/06 / 05/15/06

Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN MICE(B6C3F1)
TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
All Organs				
Benign Tumors				
TUMOR RATES	#	#	#	#
OVERALL (a)	29/50 (58%)	31/50 (62%)	20/50 (40%)	17/50 (34%)
POLY-3 RATE (b)	29/46.02	31/46.88	20/43.65	17/41.94
POLY-3 PERCENT (g)	63%	66.1%	45.8%	40.5%
TERMINAL (d)	23/36 (64%)	24/35 (69%)	14/27 (52%)	10/26 (39%)
FIRST INCIDENCE	223	505	562	593
HC TUMORS SAME ROUTE	71/150 (47%)			
HC TUMORS ALL ROUTES	628/1198 (52%)			
STATISTICAL TESTS				
POLY 3	P=0.005N**	P=0.460	P=0.070N	P=0.024N*
POLY 1.5	P=0.003N**	P=0.446	P=0.058N	P=0.017N*
POLY 6	P=0.011N*	P=0.472	P=0.099N	P=0.040N*
COCH-ARM / FISHERS	P=0.002N**	P=0.419	P=0.055N	P=0.013N*
MAX-ISO-POLY-3	P=0.007N**	P=0.374	P=0.049N*	P=0.018N*
HISTCONT SAME RTE	P=1.000	P=0.046*	P=1.000	P=1.000
HISTCONT ALL RTES	P=1.000	P=0.203	P=1.000	P=1.000
CURR VS HC SAME RTE	P=0.190			
CURR VS HC ALL RTES	P=0.391			

TDMS No. 60311 - 06

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS

Cobalt

CAS Number: 7440-48-4

Date Report Requested: 09/08/2011

Time Report Requested: 08:22:42

First Dose M/F: 05/15/06 / 05/15/06

Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN MICE(B6C3F1)
TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
All Organs				
Malignant Tumors				
TUMOR RATES	#	#	#	#
OVERALL (a)	31/50 (62%)	41/50 (82%)	46/50 (92%)	44/50 (88%)
POLY-3 RATE (b)	31/46.89	41/50.00	46/50.00	44/49.03
POLY-3 PERCENT (g)	66.1%	82%	92%	89.8%
TERMINAL (d)	21/36 (58%)	26/35 (74%)	23/27 (85%)	22/26 (85%)
FIRST INCIDENCE	499	391	457	478
HC TUMORS SAME ROUTE	83/150 (55%)			
HC TUMORS ALL ROUTES	581/1198 (49%)			
STATISTICAL TESTS				
POLY 3	P=0.002**	P=0.057	P<0.001**	P=0.004**
POLY 1.5	P=0.002**	P=0.043*	P<0.001**	P=0.003**
POLY 6	P=0.003**	P=0.069	P=0.002**	P=0.004**
COCH-ARM / FISHERS	P<0.001**	P=0.022*	P<0.001**	P=0.002**
MAX-ISO-POLY-3	P<0.001**	P=0.039*	P<0.001**	P=0.002**
HISTCONT SAME RTE	P=0.023*	P=0.042*	P=0.023*	P=0.027*
HISTCONT ALL RTEs	P<0.001**	P=0.004**	P<0.001**	P<0.001**
CURR VS HC SAME RTE	P=0.469			
CURR VS HC ALL RTEs	P=0.047*			

TDMS No. 60311 - 06

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS

Cobalt

CAS Number: 7440-48-4

Date Report Requested: 09/08/2011

Time Report Requested: 08:22:42

First Dose M/F: 05/15/06 / 05/15/06

Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN MICE(B6C3F1)
TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
All Organs				
Malignant and Benign Tumors				
TUMOR RATES	#	#	#	#
OVERALL (a)	40/50 (80%)	47/50 (94%)	49/50 (98%)	47/50 (94%)
POLY-3 RATE (b)	40/47.86	47/50.00	49/50.00	47/49.11
POLY-3 PERCENT (g)	83.6%	94%	98%	95.7%
TERMINAL (d)	29/36 (81%)	32/35 (91%)	26/27 (96%)	24/26 (92%)
FIRST INCIDENCE	223	391	457	478
HC TUMORS SAME ROUTE	123/150 (82%)			
HC TUMORS ALL ROUTES	906/1198 (76%)			
STATISTICAL TESTS				
POLY 3	P=0.026*	P=0.088	P=0.012*	P=0.045*
POLY 1.5	P=0.021*	P=0.064	P=0.008**	P=0.037*
POLY 6	P=0.034*	P=0.113	P=0.018*	P=0.057
COCH-ARM / FISHERS	P=0.022*	P=0.036*	P=0.004**	P=0.036*
MAX-ISO-POLY-3	P=0.007**	P=0.050*	P=0.005**	P=0.022*
HISTCONT SAME RTE	P=0.039*	P=0.055	P=0.030*	P=0.041*
HISTCONT ALL RTES	P=0.008**	P=0.044*	P=0.016*	P=0.032*
CURR VS HC SAME RTE	P=0.600			
CURR VS HC ALL RTES	P=0.397			

LEGEND

- (a) Number of tumor-bearing animals/number of animals examined at site.
- (b) Number of tumor-bearing animals/Poly-3 number
- (d) Observed incidence at terminal kill.
- (e) Value of statistic cannot be computed.
- (f) Beneath the control incidence are the P-values associated with the trend test. Beneath the dosed group incidence are the P-values corresponding to pairwise comparisons between the controls and that dosed group.
- (g) Poly-3 adjusted lifetime tumor incidence.
- (h) Historical Controls statistic is not calculated when the HC Poly-3 rate is higher than the Poly-3 rates for all dose groups.
- (n) No statistics are calculated if all dose groups have fewer than two tumors.
- (I) Interim sacrifice
- (T) Terminal sacrifice
- # Tumor rates based on numbers of animals necropsied.
- * To the right of any statistical result, indicates significance at ($P \leq 0.05$).
- ** To the right of any statistical result, indicates significance at ($P \leq 0.01$).
- N Indicates a negative trend for all tests
The Cochran-Armitage and Fishers exact tests compare directly the overall incidence rates.

*** END OF REPORT ***