

**Experiment Number:** 60311 - 05  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/F344/N Tac

**P11: STATISTICAL ANALYSIS OF SURVIVAL DATA**  
Cobalt  
**CAS Number:** 7440-48-4

**Date Report Requested:** 01/18/2012  
**Time Report Requested:** 14:48:12  
**First Dose M/F:** 05/08/06 / 05/08/06  
**Lab:** BNW

F2\_RD

**NTP Study 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:** 2.6.0.0\_007  
**PWG Approval Date:** NONE

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**MALE RATS**

FIRST TERMINAL SACRIFICE AT 729 DAYS  
INDIVIDUAL SURVIVAL TIMES (DAYS)

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**DOSE = Control**

TOTAL 50	UNCENSORED DEATHS 33					CENSORED DEATHS 0					TERMINAL 17				
UNCENSORED DEATH DAYS															
376	383	441	514	519	542	562	583	598	611	613	616	626	663		
663	668	670	675	676	678	682	682	683	688	688	691	696	697		
702	705	719	724	727											
CENSORED DEATH DAYS															
None															

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**DOSE = 1.25 mg/m3**

TOTAL 50	UNCENSORED DEATHS 30					CENSORED DEATHS 0					TERMINAL 20				
UNCENSORED DEATH DAYS															
413	439	540	562	577	580	583	593	596	603	610	618	624	634		
641	663	663	667	667	674	675	675	683	684	684	699	705	708		
715	719														
CENSORED DEATH DAYS															
None															

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**DOSE = 2.5 mg/m3**

TOTAL 50	UNCENSORED DEATHS 33					CENSORED DEATHS 1					TERMINAL 16				
UNCENSORED DEATH DAYS															
472	535	582	583	598	609	611	618	618	625	628	646	652	652		
654	654	667	678	680	683	688	688	689	698	703	704	705	705		
716	716	719	721	725											
CENSORED DEATH DAYS															
548															

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INDIVIDUAL SURVIVAL TIMES (DAYS)

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**DOSE = 5.0 mg/m3**

TOTAL 50	UNCENSORED DEATHS 34						CENSORED DEATHS 0				TERMINAL 16		
UNCENSORED DEATH DAYS													
470	478	491	516	552	561	572	572	590	611	618	619	628	646
646	652	660	660	679	688	689	689	691	691	696	698	702	702
713	715	717	717	722	723								
CENSORED DEATH DAYS													
None													

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**MALE RATS**

FIRST TERMINAL SACRIFICE AT 729 DAYS

KAPLAN-MEIER SURVIVAL PROBABILITY ESTIMATES (%)										
DOSE	TIME (DAYS)									
	90	180	270	365	425	485	545	605	665	729(A)
Control	100.0	100.0	100.0	100.0	96.0	94.0	88.0	82.0	70.0	34.0
1.25 mg/m3	100.0	100.0	100.0	100.0	98.0	96.0	94.0	80.0	66.0	40.0
2.5 mg/m3	100.0	100.0	100.0	100.0	100.0	98.0	96.0	89.9	67.4	32.7
5.0 mg/m3	100.0	100.0	100.0	100.0	100.0	96.0	92.0	82.0	64.0	32.0

(A) FIRST TERMINAL SACRIFICE  
 (B) THE FIRST ENTRY IS THE TREND TEST (TARONE, 1975) RESULT. SUBSEQUENT ENTRIES ARE THE RESULTS OF PAIRWISE TESTS (COX, 1972). NEGATIVE TRENDS ARE INDICATED BY "N".  
 (C) MEAN OF ALL UNCENSORED DEATHS PRIOR TO TERMINAL SACRIFICE  
 (D) MEAN OF ALL DEATHS (UNCENSORED, CENSORED, TERMINAL SACRIFICE)

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**MALE RATS**

FIRST TERMINAL SACRIFICE AT 729 DAYS

<b>SURVIVAL SUMMARY STATISTICS</b>				
<b>DOSE</b>	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
<b>SURVIVAL AT END OF STUDY</b> (KAPLAN-MEIER)	34.0%	40.0%	32.7%	32.0%
<b>SIGNIFICANCE (B)</b> (LIFE TABLE)	P=0.808	P=0.796N	P=0.988N	P=1.000
<b>MEAN DAY OF NATURAL DEATHS (C)</b> (STANDARD ERROR)	629.1 (16.3)	629.8 (13.5)	655.2 (10.1)	640.4 (12.9)
<b>MEAN LIFE SPAN (D)</b> (STANDARD ERROR)	663.1 (12.6)	669.5 (10.6)	676.7 (8.7)	668.8 (10.5)

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**FEMALE RATS**  
FIRST TERMINAL SACRIFICE AT 730 DAYS

KAPLAN-MEIER SURVIVAL PROBABILITY ESTIMATES (%)										
DOSE	TIME (DAYS)									
	90	180	270	365	425	485	545	605	665	730(A)
Control	100.0	100.0	98.0	96.0	96.0	96.0	92.0	90.0	82.0	70.0
1.25 mg/m3	100.0	100.0	100.0	100.0	98.0	98.0	96.0	86.0	72.0	52.0
2.5 mg/m3	100.0	98.0	98.0	96.0	96.0	96.0	92.0	78.0	64.0	48.0
5.0 mg/m3	100.0	100.0	100.0	100.0	100.0	94.0	88.0	78.0	68.0	50.0

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**FEMALE RATS**

FIRST TERMINAL SACRIFICE AT 730 DAYS

SURVIVAL SUMMARY STATISTICS				
DOSE	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
<b>SURVIVAL AT END OF STUDY</b> (KAPLAN-MEIER)	70.0%	52.0%	48.0%	50.0%
<b>SIGNIFICANCE (B)</b> (LIFE TABLE)	P=0.135	P=0.112	P=0.038	P=0.060
<b>MEAN DAY OF NATURAL DEATHS (C)</b> (STANDARD ERROR)	590.5 (37.1)	635.4 (14.0)	600.9 (25.5)	614.4 (16.8)
<b>MEAN LIFE SPAN (D)</b> (STANDARD ERROR)	688.1 (14.2)	684.6 (9.5)	662.9 (16.0)	672.2 (11.7)

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

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