Test Type: 39-WEEK

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: RATS/HSD

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Abrasive blasting agents (specular hematite)

CAS Number: HEMATITESPEC

F1_Rev.1_16 Wk. SSAC

NTP Study Number: C20536

Lock Date: 07/19/2010

Cage Range: ALL

Date Range: ALL

Reasons For Removal: 25017 SSAC

Removal Date Range: 13-Nov-2009 - 13-Nov-2009

Treatment Groups: Include ALL

Study Gender: Male

TDMSE Version: 2.6.0.0_007

PWG Approval Date: 02/08/2012

Date Report Requested: 09/13/2012 Time Report Requested: 10:26:12 First Dose M/F: 07/27/09 / NA

Lab: BNW

Test Type: 39-WEEK

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: RATS/HSD

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Abrasive blasting agents (specular hematite)

CAS Number: HEMATITESPEC

Date Report Requested: 09/13/2012 Time Report Requested: 10:26:12 First Dose M/F: 07/27/09 / NA

Lab: BNW

ALIMENTARY SYSTEM

NONE

CARDIOVASCULAR SYSTEM

NONE

ENDOCRINE SYSTEM

NONE

GENERAL BODY SYSTEM

NONE

GENITAL SYSTEM

NONE

HEMATOPOIETIC SYSTEM

 Lymph Node, Bronchial
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Pigmentation, Hemosiderin 2 2

INTEGUMENTARY SYSTEM

NONE

1-4 .. Lesion qualified as:

1) Minimal 3) Moderate

^{* ..} 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

Test Type: 39-WEEK

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: RATS/HSD

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Abrasive blasting agents (specular hematite)

CAS Number: HEMATITESPEC

Date Report Requested: 09/13/2012 Time Report Requested: 10:26:12 First Dose M/F: 07/27/09 / NA

Lab: BNW

DAY ON TEST HARLAN SPRAGUE DAWLEY RATS MALE	0 1 1 0								
Control ANIMAL ID	0 0 0 1 3	0 0 0 1 8	0 0 0 1 9	0 0 0 2 1	0 0 0 2 4	0 0 0 3 3	0 0 0 3 5	0 0 0 5 2	* TOTALS

MUSCULOSKELETAL SYSTEM

NONE

NERVOUS SYSTEM

NONE

RESPIRATORY SYSTEM

Larynx	+	+	+	+	+	+	+	+	8	
Lung Infiltration Cellular, Histiocyte Inflammation, Chronic Active	+	+	+	+	+	+ 1 1	+ 1	+	8	2 1.0 1 1.0
Nose	+	+	+	+	+	+	+	+	8	
Olfactory Epithelium, Accumulation, Hyaline Droplet	1	2		1	1	1	1	1		7 1.1
Respiratory Epithelium, Accumulation, Hyaline Droplet		1								1 1.0
Trachea	+	+	+	+	+	ı	+	+	7	

SPECIAL SENSES SYSTEM

NONE

URINARY SYSTEM

NONE

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

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

^{+ ..} Tissue examined microscopically

Test Type: 39-WEEK

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: RATS/HSD

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Abrasive blasting agents (specular hematite)

CAS Number: HEMATITESPEC

Date Report Requested: 09/13/2012 Time Report Requested: 10:26:12 First Dose M/F: 07/27/09 / NA

Lab: BNW

I .. Insufficient tissue

M .. Missing tissue

A .. Autolysis precludes evaluation

BLANK .. Not examined microscopically

1) Minimal 3) Moderate

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

^{+ ..} Tissue examined microscopically

X .. Lesion present

Test Type: 39-WEEK

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: RATS/HSD

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Abrasive blasting agents (specular hematite)

CAS Number: HEMATITESPEC

Date Report Requested: 09/13/2012 Time Report Requested: 10:26:12 First Dose M/F: 07/27/09 / NA

Lab: BNW

DAY ON TEST HARLAN SPRAGUE DAWLEY RATS MALE
15 mg/m3 ANIMAL ID

ALIMENTARY SYSTEM

NONE

CARDIOVASCULAR SYSTEM

NONE

ENDOCRINE SYSTEM

NONE

GENERAL BODY SYSTEM

NONE

GENITAL SYSTEM

NONE

HEMATOPOIETIC SYSTEM

Lymph Node		+							1	
Renal, Hemorrhage		1								1 1.0
Lymph Node, Bronchial	+	+	M	+	+	+	+	+	7	
Foreign Body	X	Χ		Χ	Χ	Χ	Χ	Χ		7
Hyperplasia								2		1 2.0
Infiltration Cellular, Histiocyte				2	2					2 2.0
Pigmentation, Hemosiderin				2						1 2.0

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

I .. Insufficient tissue

^{+ ..} Tissue examined microscopically

M .. Missing tissue

X .. Lesion present

A .. Autolysis precludes evaluation BLANK .. Not examined microscopically

^{1-4 ..} Lesion qualified as:1) Minimal 3) Moderate

²⁾ Mild

Test Type: 39-WEEK

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: RATS/HSD

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Abrasive blasting agents (specular hematite)

CAS Number: HEMATITESPEC

Date Report Requested: 09/13/2012 Time Report Requested: 10:26:12 First Dose M/F: 07/27/09 / NA

Lab: BNW

DAY OF THE PROPERTY OF THE PRO	ON TEST	0 1 1 0								
15 mg/m3	NIMAL ID	0 0 2 1 3	0 0 2 1 8	0 0 2 1 9	0 0 2 2 1	0 0 2 2 4	0 0 2 3 3	0 0 2 3 5	0 0 2 5 2	* TOTALS
Lymph Node, Mediastinal Foreign Body Hyperplasia Infiltration Cellular, Histiocyte Pigmentation, Hemosiderin		+	+	+ X 2 1	+	+	+ X 2 3	+ X 2 2	+ X	8 4 3 2.0 3 2.0 2 2.0
INTEGUMENTARY SYSTEM										
NONE										
MUSCULOSKELETAL SYSTE	M									
NONE										
NERVOUS SYSTEM				-					-	
NONE										

 $X \quad X \quad X$

1

Χ

Infiltration Cellular, Histiocyte

Alveolar Epithelium, Hyperplasia

RESPIRATORY SYSTEM

Epiglottis, Metaplasia, Squamous

Larynx

Lung

Foreign Body

Foreign Body

Glands, Concretion

M .. Missing tissue

X X

Χ

1

Χ

Χ

A .. Autolysis precludes evaluation

BLANK .. Not examined microscopically

ХХ

1-4 .. Lesion qualified as:

1) Minimal 3) Moderate

8

8

8

1

8

3 1.0

8 1.0

3 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

Test Type: 39-WEEK

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: RATS/HSD

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Abrasive blasting agents (specular hematite)

CAS Number: HEMATITESPEC

Date Report Requested: 09/13/2012 Time Report Requested: 10:26:12 First Dose M/F: 07/27/09 / NA

Lab: BNW

DAY ON TEST HARLAN SPRAGUE DAWLEY RATS MALE	0 1 1 0									
15 mg/m3 ANIMAL ID	0 0 2 1 3	0 0 2 1 8	0 0 2 1 9	0 0 2 2 1	0 0 2 2 4	0 0 2 3 3	0 0 2 3 5	0 0 2 5 2	* 7	TOTALS
Nose	+	+	+	+	+	+	+	+	8	
Olfactory Epithelium, Accumulation, Hyaline Droplet	1	1	2	1	1	1	1	1		8 1.1
Respiratory Epithelium, Accumulation, Hyaline Droplet	1		1		1		1			4 1.0
Trachea	+	+	+	+	+	+	+	+	8	

SPECIAL SENSES SYSTEM

NONE

URINARY SYSTEM

NONE

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

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

^{+ ..} Tissue examined microscopically

X .. Lesion present

Test Type: 39-WEEK

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: RATS/HSD

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Abrasive blasting agents (specular hematite)

CAS Number: HEMATITESPEC

Date Report Requested: 09/13/2012 Time Report Requested: 10:26:12 First Dose M/F: 07/27/09 / NA

Lab: BNW

ALIMENTARY SYSTEM

NONE

CARDIOVASCULAR SYSTEM

NONE

ENDOCRINE SYSTEM

NONE

GENERAL BODY SYSTEM

NONE

GENITAL SYSTEM

NONE

HEMATOPOIETIC SYSTEM

Lymph Node, Bronchial	+	+	+	+	+	+	+	+	8		
Foreign Body	X		Χ	Χ	Χ	Χ	Χ			6	
Hyperplasia	2				1					2	1.5
Infiltration Cellular, Histiocyte	3		2	2	3	2	2			6	2.3
Pigmentation, Hemosiderin			2							1	2.0
Lymph Node, Mediastinal	+	+	+	+	+	+	+	+	8		
Foreign Body		Χ	Χ	Χ	Χ	Χ	Χ			6	
Hyperplasia		2	2	2	3	3	3			6	2.5

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

^{+ ..} Tissue examined microscopically

X .. Lesion present

I .. Insufficient tissue

M .. Missing tissue

A .. Autolysis precludes evaluation

BLANK .. Not examined microscopically

^{1-4 ..} Lesion qualified as:

¹⁾ Minimal 3) Moderate

Test Type: 39-WEEK

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: RATS/HSD

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Abrasive blasting agents (specular hematite)

CAS Number: HEMATITESPEC

Date Report Requested: 09/13/2012 Time Report Requested: 10:26:12 First Dose M/F: 07/27/09 / NA

Lab: BNW

DAY ON TEST HARLAN SPRAGUE DAWLEY RATS MALE	0 1 1 0								
30 mg/m3 ANIMAL ID	0 0 4 1 3	0 0 4 1 8	0 0 4 1 9	0 0 4 2 1	0 0 4 2 4	0 0 4 3 3	0 0 4 3 5	0 0 4 5 2	* TOTALS
Infiltration Cellular, Histiocyte		2	3	2	3		3		5 2.6

INTEGUMENTARY SYSTEM

NONE

MUSCULOSKELETAL SYSTEM

NONE

NERVOUS SYSTEM

NONE

RESPIRATORY SYSTEM

Larynx	+	+	+	+	+	+	+	+		8	
Foreign Body	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Х	, \		8
Epiglottis, Metaplasia, Squamous	1	1	1								3 1.0
Glands, Inflammation							1				1 1.0
Lung	+	+	+	+	+	+	+	+	•	8	
Foreign Body	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	, , , , , , , , , , , , , , , , , , ,		8
Infiltration Cellular, Histiocyte	1	2	1	1	1	1	1	1			8 1.1
Alveolar Epithelium, Hyperplasia	1	1	1	1	1	1	1	1			8 1.0
Nose	+	+	+	+	+	+	+	+	•	8	
Inflammation, Suppurative, Focal					1						1 1.0
Glands, Accumulation, Hyaline Droplet					1						1 1.0
Olfactory Epithelium, Accumulation, Hyaline Droplet	1	1		1	1	1	2	1			7 1.1

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

X .. Lesion present

A .. Autolysis precludes evaluation

BLANK .. Not examined microscopically

1-4 .. Lesion qualified as:

1) Minimal 3) Moderate

^{+ ..} Tissue examined microscopically

I .. Insufficient tissue

M .. Missing tissue

Test Type: 39-WEEK

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: RATS/HSD

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Abrasive blasting agents (specular hematite)

CAS Number: HEMATITESPEC

Date Report Requested: 09/13/2012 Time Report Requested: 10:26:12 First Dose M/F: 07/27/09 / NA

Lab: BNW

DAY ON TEST HARLAN SPRAGUE DAWLEY RATS MALE	0 1 1 0	0 1 1 0	0 1 1 0	0 1 1 0	0 1 1 0	0 1 1 0	0 1 1 0	0 1 1 0		
30 mg/m3 ANIMAL ID	0 0 4 1 3	0 0 4 1 8	0 0 4 1 9	0 0 4 2 1	0 0 4 2 4	0	0 0 4 3 5	0 0 4 5 2	* TOTAL	.s
Respiratory Epithelium, Accumulation, Hyaline Droplet	1				1	1	1	1	5	1.0
Trachea	+	+	+	+	+	+	+	+	8	

SPECIAL SENSES SYSTEM

NONE

URINARY SYSTEM

NONE

I .. Insufficient tissue

M .. Missing tissue

A .. Autolysis precludes evaluation

BLANK .. Not examined microscopically

1-4 .. Lesion qualified as:

1) Minimal 3) Moderate

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

^{+ ..} Tissue examined microscopically

X .. Lesion present

Test Type: 39-WEEK

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: RATS/HSD

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Abrasive blasting agents (specular hematite)

CAS Number: HEMATITESPEC

Date Report Requested: 09/13/2012 Time Report Requested: 10:26:12 First Dose M/F: 07/27/09 / NA

Lab: BNW

ALIMENTARY SYSTEM

NONE

CARDIOVASCULAR SYSTEM

NONE

ENDOCRINE SYSTEM

NONE

GENERAL BODY SYSTEM

NONE

GENITAL SYSTEM

NONE

HEMATOPOIETIC SYSTEM

Lymph Node, Bronchial Foreign Body Hyperplasia Infiltration Cellular, Histiocyte	X		Χ	X 1		+ X 2	Χ	X 2		8	7 3 1.7 7 2.7
Lymph Node, Mediastinal Foreign Body Hyperplasia	X	Χ	Χ	Χ	Χ	+ X 2	Χ	Χ		8	8 8 2.6

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

4) Marked

^{+ ..} 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)

Test Type: 39-WEEK

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: RATS/HSD

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Abrasive blasting agents (specular hematite)

CAS Number: HEMATITESPEC

Date Report Requested: 09/13/2012 Time Report Requested: 10:26:12 First Dose M/F: 07/27/09 / NA

Lab: BNW

DAY ON TES HARLAN SPRAGUE DAWLEY RAT MALE		1	0 1 1 0	0 1 1 0	0 1 1 0	0 1 1 0	0 1 1 0	0 1 1 0	
60 mg/m3 ANIMAL I	0 0 6 1 3	0 6 1	0 0 6 1 9	0 0 6 2 1	0 0 6 2 4	0 0 6 3 3	0 0 6 3 5	0 0 6 5 2	* TOTALS
Infiltration Cellular, Histiocyte	3	3	3	3	3	2	3	3	8 2.9

INTEGUMENTARY SYSTEM

NONE

MUSCULOSKELETAL SYSTEM

NONE

NERVOUS SYSTEM

NONE

RESPIRATORY SYSTEM

Larynx	+	+	+	+	+	+	+	+	8	
Foreign Body	Χ	X	Χ	Χ	Χ	Χ	Χ	Χ		8
Epiglottis, Metaplasia, Squamous				1	1		1	1		4 1.0
Lung	+	+	+	+	+	+	+	+	8	
Foreign Body	X	Χ	Χ	Χ	Χ	Χ	Χ	Χ		8
Infiltration Cellular, Histiocyte	2	2	2	2	3	2	3	2		8 2.3
Inflammation, Chronic Active			1			1		1		3 1.0
Alveolar Epithelium, Hyperplasia	1	1	1	1	1	1	1	1		8 1.0
Nose	+	+	+	+	+	+	+	+	8	
Olfactory Epithelium, Accumulation, Hyaline Droplet	1	1	1	1	1	1	1	1		8 1.0
Respiratory Epithelium, Accumulation, Hyaline Droplet			1	1						2 1.0

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

^{+ ..} Tissue examined microscopically

X .. Lesion present

I .. Insufficient tissue

M .. Missing tissue

A .. Autolysis precludes evaluation BLANK .. Not examined microscopically

^{1-4 ..} Lesion qualified as:

¹⁾ Minimal 3) Moderate

²⁾ Mild 4) Marked

Test Type: 39-WEEK

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: RATS/HSD

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Abrasive blasting agents (specular hematite)

CAS Number: HEMATITESPEC

Date Report Requested: 09/13/2012 Time Report Requested: 10:26:12 First Dose M/F: 07/27/09 / NA

8

Lab: BNW

DAY ON TEST HARLAN SPRAGUE DAWLEY RATS MALE	0 1 1 0								
60 mg/m3 ANIMAL ID	0 0 6 1 3	0 0 6 1 8	0 0 6 1 9	0 0 6 2 1	0 0 6 2 4	0 0 6 3 3	0 0 6 3 5	0 0 6 5 2	* TOTALS

SPECIAL SENSES SYSTEM

NONE

Trachea

URINARY SYSTEM

NONE

*** END OF REPORT ***

I .. Insufficient tissue

M .. Missing tissue

A .. Autolysis precludes evaluation

BLANK .. Not examined microscopically

1-4 .. Lesion qualified as:

1) Minimal 3) Moderate

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

^{+ ..} Tissue examined microscopically

X .. Lesion present