Test Type: 14-DAY

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: RATS/F344/N Tac

NTP Study Number: C20536

Lock Date: 07/19/2010

Cage Range: ALL

Date Range: ALL

Reasons For Removal: ALL

Removal Date Range: ALL

Treatment Groups: Include ALL

Study Gender: Male

TDMSE Version: 3.0.2.3_002

PWG Approval Date: NONE

P04: NEOPLASMS BY INDIVIDUAL ANIMAL

Abrasive Blasting Agents: Specular Hematite

CAS Number: HEMATITESPEC

Date Report Requested: 04/05/2018 Time Report Requested: 14:35:42 First Dose M/F: 08/14/06 / NA

Lab: BNW

Test Type: 14-DAY

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: RATS/F344/N Tac

P04: NEOPLASMS BY INDIVIDUAL ANIMAL

Abrasive Blasting Agents: Specular Hematite

CAS Number: HEMATITESPEC

Date Report Requested: 04/05/2018 Time Report Requested: 14:35:42 First Dose M/F: 08/14/06 / NA

Lab: BNW

| | DAY ON TEST | 0 | 0 | 0 | 0 | 0 |
|-------------------|-------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| SCHER 344-TACONIC | DAY ON TEST | 1 . | 0 1 6 | 0 1 6 | 0 1 6 | 0 1 6 |
| mg/m3 | ANIMAL ID | 0 0 0 0 1 | 0 0 0 0 2 | 0 0 0 0 3 | 0 0 0 0 4 | 0 0 0 0 5 |
| LIMENTARY SYSTEM | | | ı | ı | ı | |

CARDIOVASCULAR SYSTEM

NONE

ENDOCRINE SYSTEM

NONE

GENERAL BODY SYSTEM

NONE

GENITAL SYSTEM

NONE

HEMATOPOIETIC SYSTEM

3 Lymph Node, Bronchial M + M +

5 Lymph Node, Mediastinal

INTEGUMENTARY SYSTEM

NONE

- * .. Total animals with tissue examined microscopically; Total animals with tumor
- + .. Tissue examined microscopically
- X .. Lesion present
- I .. Insufficient tissue

- M .. Missing tissue
- A .. Autolysis precludes evaluation
- BLANK .. Not examined microscopically

Test Type: 14-DAY

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: RATS/F344/N Tac

P04: NEOPLASMS BY INDIVIDUAL ANIMAL

Abrasive Blasting Agents: Specular Hematite

CAS Number: HEMATITESPEC

Date Report Requested: 04/05/2018 Time Report Requested: 14:35:42 First Dose M/F: 08/14/06 / NA

Lab: BNW

| DAY ON TEST | 0 | 0 | 0 | 0 | 0 | |
|-------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|--------|
| FISCHER 344-TACONIC RATS MALE | 1 6 | 1 6 | 1 6 | 1 6 | 1 6 | |
| 0 mg/m3 ANIMAL ID | 0 0 0 0 1 | 0 0 0 0 2 | 0 0 0 0 3 | 0 0 0 0 4 | 0 0 0 0 5 | * TOTA |
| NONE | | | | | | |
| NERVOUS SYSTEM | | | | | | |
| NONE | | | | | | |
| RESPIRATORY SYSTEM | | | | | | |
| Larynx | + | + | + | + | + | 5 |
| Lung | + | + | + | + | + | 5 |
| Nose | + | + | + | + | + | 5 |
| Trachea | + | + | + | + | + | 5 |
| SPECIAL SENSES SYSTEM | | | - | | | |
| NONE | | | | | | |
| URINARY SYSTEM | | | | | | |
| NONE | | | | | | |
| SYSTEMIC LESIONS | | | | | | |
| Multiple Organ | + | + | + | + | + | 5 |

^{* ..} Total animals with tissue examined microscopically; Total animals with tumor

^{+ ..} Tissue examined microscopically

X .. Lesion present

I .. Insufficient tissue

M .. Missing tissue

A .. Autolysis precludes evaluation

Test Type: 14-DAY

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: RATS/F344/N Tac

P04: NEOPLASMS BY INDIVIDUAL ANIMAL

Abrasive Blasting Agents: Specular Hematite

CAS Number: HEMATITESPEC

Date Report Requested: 04/05/2018 Time Report Requested: 14:35:42 First Dose M/F: 08/14/06 / NA

Lab: BNW

| FISCHER 344-TACONIC RA | Y ON TEST | 0 0 1 6 | 0 0 1 6 | 0 1 6 | 0 1 6 | |
|------------------------|-----------|-----------------------|-----------------------|-----------------------|-----------------------|---------|
| 3 mg/m3 | ANIMAL ID | 0 0 2 0 1 | 0 0 2 0 2 | 0 0 2 0 3 | 0 0 2 0 4 | * TOTAL |
| ALIMENTARY SYSTEM | | | | | | |
| NONE | | | | | | |

ENDOCRINE SYSTEM

NONE

NONE

GENERAL BODY SYSTEM

NONE

GENITAL SYSTEM

NONE

HEMATOPOIETIC SYSTEM

Lymph Node, Bronchial M M M M1 5

INTEGUMENTARY SYSTEM

Lymph Node, Mediastinal

NONE

- * .. Total animals with tissue examined microscopically; Total animals with tumor
- + .. Tissue examined microscopically
- X .. Lesion present
- I .. Insufficient tissue

- M .. Missing tissue
- A .. Autolysis precludes evaluation
- BLANK .. Not examined microscopically

Test Type: 14-DAY

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: RATS/F344/N Tac

P04: NEOPLASMS BY INDIVIDUAL ANIMAL

Abrasive Blasting Agents: Specular Hematite

CAS Number: HEMATITESPEC

Date Report Requested: 04/05/2018 Time Report Requested: 14:35:42 First Dose M/F: 08/14/06 / NA

Lab: BNW

| DAY ON TEST FISCHER 344-TACONIC RATS MALE | 0 0 1 6 | 0 0 1 6 | 0 0 1 6 | 0 0 1 6 | |
|---|-----------------------|-----------------------|-----------------------|-----------------------|---------|
| 3 mg/m3 ANIMAL ID | 0 0 2 0 1 | 0 0 2 0 2 | 0 0 2 0 3 | 0 0 2 0 4 | * TOTAL |
| NONE | | | | | |
| NERVOUS SYSTEM | | | - | | |
| NONE | | | | | |
| RESPIRATORY SYSTEM | | | | | |
| Larynx | + | + | + | + | 5 |
| Lung | + | + | + | + | 5 |
| Nose | + | + | + | + | 5 |
| Trachea | + | + | + | + | 5 |
| SPECIAL SENSES SYSTEM | | | | | |
| NONE | | | | | |
| URINARY SYSTEM | | | | | |
| NONE | | | | | |
| SYSTEMIC LESIONS | | | | | |
| Multiple Organ | + | + | + | + | 5 |

^{* ..} Total animals with tissue examined microscopically; Total animals with tumor

^{+ ..} Tissue examined microscopically

X .. Lesion present

I .. Insufficient tissue

M .. Missing tissue

A .. Autolysis precludes evaluation

Test Type: 14-DAY

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: RATS/F344/N Tac

P04: NEOPLASMS BY INDIVIDUAL ANIMAL

Abrasive Blasting Agents: Specular Hematite

CAS Number: HEMATITESPEC

Date Report Requested: 04/05/2018 Time Report Requested: 14:35:42 First Dose M/F: 08/14/06 / NA

Lab: BNW

| DAY ON TEST | 0 | 0 | 0 | 0 | 0 |
|-----------------|---|---|---|---|---|
| | 0 | 0 | 0 | 0 | 0 |
| | 1 | 1 | 1 | 1 | 1 |
| | 6 | 6 | 6 | 6 | 6 |
| mg/m3 ANIMAL ID | 0 | 0 | 0 | 0 | 0 |
| | 0 | 0 | 0 | 0 | 0 |
| | 4 | 4 | 4 | 4 | 4 |
| | 0 | 0 | 0 | 0 | 0 |
| | 1 | 2 | 3 | 4 | 5 |

ALIMENTARY SYSTEM

NONE

CARDIOVASCULAR SYSTEM

NONE

ENDOCRINE SYSTEM

NONE

GENERAL BODY SYSTEM

NONE

GENITAL SYSTEM

NONE

HEMATOPOIETIC SYSTEM

Lymph Node, Bronchial + M M M + 2

Lymph Node, Mediastinal + + M + M 3

INTEGUMENTARY SYSTEM

NONE

- * .. Total animals with tissue examined microscopically; Total animals with tumor
- + .. Tissue examined microscopically
- X .. Lesion present
- I .. Insufficient tissue

- M .. Missing tissue
- A .. Autolysis precludes evaluation
- BLANK .. Not examined microscopically

Test Type: 14-DAY

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: RATS/F344/N Tac

P04: NEOPLASMS BY INDIVIDUAL ANIMAL

Abrasive Blasting Agents: Specular Hematite

CAS Number: HEMATITESPEC

Date Report Requested: 04/05/2018 Time Report Requested: 14:35:42 First Dose M/F: 08/14/06 / NA

Lab: BNW

| DAY ON T | 0 | 0 | 0 | 0 | 0 0 | |
|----------------------------|------------------------|--------|-----------------------|-----------------------|-----------------------|------|
| FISCHER 344-TACONIC RATS M | IALE 6 | 1 6 | 1 6 | 1 6 | 1 6 | |
| 15 mg/m3 ANIMA | AL ID 0 4 0 1 | 0 4 | 0 0 4 0 3 | 0 0 4 0 4 | 0 0 4 0 5 | * TO |
| NONE | | | | | | |
| NERVOUS SYSTEM | | | | | | |
| NONE | | | | | | |
| RESPIRATORY SYSTEM | | | | | | |
| Larynx | + | + | + | + | + | |
| Lung | + | + | + | + | + | |
| Nose | + | + | + | + | + | |
| Trachea | + | + | + | + | + | |
| SPECIAL SENSES SYSTEM | | | | | | |
| NONE | | | _ | _ | | |
| URINARY SYSTEM | | | | | | |
| NONE | | | | | | |
| SYSTEMIC LESIONS | | | | | | |
| Multiple Organ | + | + | + | + | + | |

^{* ..} Total animals with tissue examined microscopically; Total animals with tumor

^{+ ..} Tissue examined microscopically

X .. Lesion present

I .. Insufficient tissue

M .. Missing tissue

A .. Autolysis precludes evaluation

BLANK .. Not examined microscopically

Test Type: 14-DAY

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: RATS/F344/N Tac

P04: NEOPLASMS BY INDIVIDUAL ANIMAL

Abrasive Blasting Agents: Specular Hematite

CAS Number: HEMATITESPEC

Date Report Requested: 04/05/2018 Time Report Requested: 14:35:42 First Dose M/F: 08/14/06 / NA

Lab: BNW

| DAY ON TEST FISCHER 344-TACONIC RATS MAL | 0 0 1 6 | 0 | 0 0 1 | 0 0 0 1 1 6 | 0 1 | |
|---|-----------------------|-----------------------|-------|---------------|-----------------|--|
| 60 mg/m3 ANIMAL II | 0 0 6 0 1 | 0 0 6 0 2 | 600 | 0 0 0 6 6 0 4 | 0 0 0 0 6 6 0 5 | |

ALIMENTARY SYSTEM

NONE

CARDIOVASCULAR SYSTEM

NONE

ENDOCRINE SYSTEM

NONE

GENERAL BODY SYSTEM

NONE

GENITAL SYSTEM

NONE

HEMATOPOIETIC SYSTEM

Lymph Node, Bronchial M M M +Μ 1 3

INTEGUMENTARY SYSTEM

Lymph Node, Mediastinal

NONE

MUSCULOSKELETAL SYSTEM

* .. Total animals with tissue examined microscopically; Total animals with tumor

+ M + +

Μ

- + .. Tissue examined microscopically
- X .. Lesion present
- I .. Insufficient tissue

- M .. Missing tissue
- A .. Autolysis precludes evaluation
- BLANK .. Not examined microscopically

Test Type: 14-DAY

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: RATS/F344/N Tac

P04: NEOPLASMS BY INDIVIDUAL ANIMAL

Abrasive Blasting Agents: Specular Hematite

CAS Number: HEMATITESPEC

Date Report Requested: 04/05/2018 Time Report Requested: 14:35:42 First Dose M/F: 08/14/06 / NA

Lab: BNW

| DAY ON FISCHER 344-TACONIC RATS I | l v | 0 0 1 6 | 0 0 1 6 | 0 0 1 6 | 0 0 1 6 | |
|-----------------------------------|-----------------------|------------------|-----------------------|-----------------------|-----------------------|----------|
| 30 mg/m3 ANIM | 0 0 6 0 1 | 0 | 0 0 6 0 3 | 0 0 6 0 4 | 0 0 6 0 5 | * TOTALS |
| NONE | | | | | | |
| NERVOUS SYSTEM | | | • | | | |
| NONE | | | | | | |
| RESPIRATORY SYSTEM | | | | | | |
| Larynx | + | + | + | + | + | 5 |
| Lung | + | + | + | + | + | 5 |
| Nose | + | + | + | + | + | 5 |
| Trachea | + | + | + | + | + | 5 |
| SPECIAL SENSES SYSTEM | | | | | | |
| NONE | | | | | | |
| URINARY SYSTEM | | | | | - | |
| NONE | | | | | | |
| SYSTEMIC LESIONS | | | | | | |
| Multiple Organ | + | + | + | + | + | 5 |

M .. Missing tissue

A .. Autolysis precludes evaluation

^{* ..} Total animals with tissue examined microscopically; Total animals with tumor

^{+ ..} Tissue examined microscopically

X .. Lesion present

I .. Insufficient tissue

Test Type: 14-DAY

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: RATS/F344/N Tac

P04: NEOPLASMS BY INDIVIDUAL ANIMAL

Abrasive Blasting Agents: Specular Hematite

CAS Number: HEMATITESPEC

Date Report Requested: 04/05/2018 Time Report Requested: 14:35:42 First Dose M/F: 08/14/06 / NA

Lab: BNW

| DAY ON TE | 1 4 | 0 | 1 | 0 | 0 0 1 6 | |
|-------------------------|--------------|-----|-------------|-------------|-----------------------|----------------|
| 60 mg/m3 ANIMAI | ID 00 8 00 1 | 0 8 | 0 8 0 | 0 8 0 | 0 0 8 0 5 | * TOT / |
| ALIMENTARY SYSTEM | · | | | | | |
| NONE | | | | | | |
| CARDIOVASCULAR SYSTEM | | • | | | • | |
| NONE | | | | | | |
| ENDOCRINE SYSTEM | , | | | | | |
| NONE | | | | | | |
| GENERAL BODY SYSTEM | | | | | | |
| NONE | | | | | | |
| GENITAL SYSTEM | | | | | | |
| NONE | | | | | | |
| HEMATOPOIETIC SYSTEM | | | | | | |
| Lymph Node, Bronchial | + | M | M | 1 + | М | 2 |
| Lymph Node, Mediastinal | + | + | + | + | + | 5 |

NONE

- * .. Total animals with tissue examined microscopically; Total animals with tumor
- + .. Tissue examined microscopically
- X .. Lesion present
- I .. Insufficient tissue

- M .. Missing tissue
- A .. Autolysis precludes evaluation
- BLANK .. Not examined microscopically

Test Type: 14-DAY

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: RATS/F344/N Tac

P04: NEOPLASMS BY INDIVIDUAL ANIMAL

Abrasive Blasting Agents: Specular Hematite

CAS Number: HEMATITESPEC

Date Report Requested: 04/05/2018 Time Report Requested: 14:35:42 First Dose M/F: 08/14/06 / NA

Lab: BNW

| DAY ON TEST FISCHER 344-TACONIC RATS MALE | 0 0 1 6 | 0 0 1 6 | 0 0 1 6 | 0 0 1 6 | 0 0 1 6 | |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-------|
| 60 mg/m3 ANIMAL ID | 0 0 8 0 1 | 0 0 8 0 2 | 0 0 8 0 3 | 0 0 8 0 4 | 0 0 8 0 5 | * тот |
| NONE | | | | | | |
| NERVOUS SYSTEM | | | | - | | |
| NONE | | | | | | |
| RESPIRATORY SYSTEM | | | | | | |
| Larynx | + | + | + | + | + | 5 |
| Lung | + | + | + | + | + | 5 |
| Nose | + | + | + | + | + | 5 |
| Trachea | + | + | + | + | + | 5 |
| SPECIAL SENSES SYSTEM | | | | | | |
| NONE | | | | | | |
| URINARY SYSTEM | | | | | | |
| NONE | | | | | | |
| SYSTEMIC LESIONS | | | | | | |
| Multiple Organ | + | + | + | + | + | 5 |

*** END OF REPORT ***

^{* ..} Total animals with tissue examined microscopically; Total animals with tumor

^{+ ..} Tissue examined microscopically

X .. Lesion present

I .. Insufficient tissue

M .. Missing tissue

A .. Autolysis precludes evaluation