

Experiment Number: 10472 - 01

**P18: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a) WITH  
AVERAGE SEVERITY GRADES[b]**

Date Report Requested: 08/05/2016

Test Type: 90-DAY

p-Chloro-a,a,a-trifluorotoluene

Time Report Requested: 10:34:45

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 98-56-6

First Dose M/F: 10/26/09 / 10/26/09

Species/Strain: RATS/HSD

Lab: BNW

F2\_HSD Rats

**NTP Study Number:** C10472  
**Lock Date:** 06/08/2010  
**Cage Range:** ALL  
**Date Range:** ALL  
**Reasons For Removal:** ALL  
**Removal Date Range:** ALL  
**Treatment Groups:** Include ALL  
**Study Gender:** Both  
**TDMSE Version:** 3.0.2.3\_002  
**PWG Approval Date:** NONE

Test Type: 90-DAY

p-Chloro-a,a,a-trifluorotoluene

Time Report Requested: 10:34:45

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 98-56-6

First Dose M/F: 10/26/09 / 10/26/09

Species/Strain: RATS/HSD

Lab: BNW

Harlan Sprague Dawley RATS MALE	CONTROL	125 ppm	250 ppm	500 ppm	1000 ppm	2000 ppm
---------------------------------	---------	---------	---------	---------	----------	----------

**Disposition Summary**

Animals Initially In Study	10	10	10	10	10	10
Early Deaths						
Survivors						
Terminal Sacrifice	10	10	10	10	10	10
Animals Examined Microscopically	10	10	10	10	10	10

## ALIMENTARY SYSTEM

Esophagus	(10)	(0)	(0)	(0)	(0)	(9)
Intestine Large, Cecum	(10)	(0)	(0)	(0)	(0)	(10)
Intestine Large, Colon	(10)	(0)	(1)	(0)	(0)	(10)
Hyperplasia, Lymphoid			1 [4.0]			
Intestine Large, Rectum	(10)	(0)	(0)	(0)	(0)	(10)
Intestine Small, Duodenum	(10)	(0)	(0)	(0)	(0)	(10)
Intestine Small, Ileum	(10)	(0)	(1)	(0)	(0)	(10)
Peyer's Patch, Hyperplasia			1 [1.0]			
Intestine Small, Jejunum	(10)	(0)	(0)	(0)	(0)	(10)
Liver	(10)	(10)	(10)	(10)	(10)	(10)
Clear Cell Focus				1		
Hepatodiaphragmatic Nodule						1
Inflammation, Chronic Active	1 [1.0]		1 [1.0]			1 [2.0]
Necrosis					1 [1.0]	2 [2.0]
Centrilobular, Hepatocyte, Hypertrophy			8 [1.0]	10 [1.0]	10 [1.9]	10 [2.0]
Pancreas	(10)	(0)	(0)	(0)	(0)	(10)
Acinus, Atrophy	1 [1.0]					
Salivary Glands	(10)	(0)	(0)	(0)	(0)	(10)
Stomach, Forestomach	(10)	(0)	(0)	(0)	(0)	(10)
Stomach, Glandular	(10)	(0)	(0)	(0)	(0)	(10)

## CARDIOVASCULAR SYSTEM

Blood Vessel	(10)	(0)	(0)	(1)	(0)	(10)
Heart	(10)	(0)	(0)	(0)	(0)	(10)

a - Number of animals examined microscopically at site and number of animals with lesion

b-Average severity grade(1-minimal;2-mild;3-moderate;4-marked)

Test Type: 90-DAY

p-Chloro-a,a,a-trifluorotoluene

Time Report Requested: 10:34:45

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 98-56-6

First Dose M/F: 10/26/09 / 10/26/09

Species/Strain: RATS/HSD

Lab: BNW

Harlan Sprague Dawley RATS MALE	CONTROL	125 ppm	250 ppm	500 ppm	1000 ppm	2000 ppm
Cardiomyopathy	4 [1.0]					3 [1.0]
<b>ENDOCRINE SYSTEM</b>						
Adrenal Cortex	(10)	(10)	(10)	(10)	(10)	(10)
Vacuolization Cytoplasmic						7 [1.0]
Adrenal Medulla	(10)	(10)	(10)	(10)	(10)	(10)
Islets, Pancreatic	(10)	(0)	(0)	(0)	(0)	(10)
Parathyroid Gland	(8)	(0)	(0)	(0)	(0)	(4)
Pituitary Gland	(10)	(0)	(0)	(0)	(0)	(10)
Thyroid Gland	(10)	(0)	(0)	(0)	(0)	(10)
<b>GENERAL BODY SYSTEM</b>						
None						
<b>GENITAL SYSTEM</b>						
Epididymis	(10)	(10)	(10)	(10)	(10)	(10)
Hypospermia	1 [4.0]		1 [4.0]	1 [4.0]		
Duct, Exfoliated Germ Cell			1 [4.0]		1 [1.0]	6 [1.5]
Preputial Gland	(10)	(0)	(0)	(0)	(0)	(9)
Inflammation, Chronic	2 [1.0]					
Prostate	(10)	(0)	(0)	(0)	(0)	(10)
Inflammation, Chronic	3 [1.0]					
Inflammation, Chronic Active	1 [2.0]					
Seminal Vesicle	(10)	(0)	(0)	(0)	(0)	(10)
Testes	(10)	(10)	(10)	(10)	(10)	(10)
Germ Cell, Degeneration			1 [4.0]		2 [1.0]	6 [1.3]
Germinal Epithelium, Atrophy	1 [4.0]			1 [3.0]		
Rete Testes, Dilation				1 [3.0]		
Seminiferous Tubule, Dilation				1 [2.0]		
Seminiferous Tubule, Spermatid Retention				3 [1.3]	4 [1.5]	4 [1.5]

a - Number of animals examined microscopically at site and number of animals with lesion

b-Average severity grade(1-minimal;2-mild;3-moderate;4-marked)

Test Type: 90-DAY

p-Chloro-a,a,a-trifluorotoluene

Time Report Requested: 10:34:45

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 98-56-6

First Dose M/F: 10/26/09 / 10/26/09

Species/Strain: RATS/HSD

Lab: BNW

Harlan Sprague Dawley RATS MALE	CONTROL	125 ppm	250 ppm	500 ppm	1000 ppm	2000 ppm
<b>HEMATOPOIETIC SYSTEM</b>						
Bone Marrow	(10)	(0)	(0)	(0)	(0)	(10)
Lymph Node, Bronchial	(9)	(0)	(0)	(0)	(0)	(7)
Lymph Node, Mandibular	(10)	(0)	(0)	(0)	(0)	(9)
Congestion	1 [3.0]					
Lymph Node, Mediastinal	(10)	(0)	(0)	(0)	(0)	(8)
Lymph Node, Mesenteric	(10)	(0)	(0)	(0)	(0)	(10)
Spleen	(10)	(0)	(0)	(0)	(0)	(10)
Thymus	(10)	(10)	(10)	(10)	(10)	(9)
<b>INTEGUMENTARY SYSTEM</b>						
Mammary Gland	(8)	(0)	(0)	(0)	(0)	(7)
Hyperplasia						1 [2.0]
Skin	(10)	(0)	(0)	(0)	(0)	(10)
<b>MUSCULOSKELETAL SYSTEM</b>						
Bone	(10)	(0)	(0)	(0)	(0)	(10)
<b>NERVOUS SYSTEM</b>						
Brain	(10)	(0)	(0)	(0)	(0)	(10)
<b>RESPIRATORY SYSTEM</b>						
Larynx	(10)	(0)	(0)	(0)	(0)	(10)
Inflammation, Neutrophil	1 [1.0]					
Inflammation, Chronic Active	1 [1.0]					
Lung	(10)	(0)	(1)	(0)	(1)	(10)
Congestion			1 [2.0]			
Infiltration Cellular, Histiocyte, Focal	1 [1.0]					4 [1.0]

a - Number of animals examined microscopically at site and number of animals with lesion

b-Average severity grade(1-minimal;2-mild;3-moderate;4-marked)

Test Type: 90-DAY

p-Chloro-a,a,a-trifluorotoluene

Time Report Requested: 10:34:45

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 98-56-6

First Dose M/F: 10/26/09 / 10/26/09

Species/Strain: RATS/HSD

Lab: BNW

Harlan Sprague Dawley RATS MALE	CONTROL	125 ppm	250 ppm	500 ppm	1000 ppm	2000 ppm
Inflammation, Focal, Chronic Active Metaplasia, Osseous	1 [1.0]				1 [1.0]	1 [1.0]
Nose	(10)	(0)	(0)	(0)	(0)	(10)
Olfactory Epithelium, Accumulation, Hyaline Droplet	5 [1.2]					3 [1.0]
Trachea	(10)	(0)	(0)	(0)	(0)	(10)
<b>SPECIAL SENSES SYSTEM</b>						
Eye	(10)	(0)	(0)	(0)	(0)	(10)
Infiltration Cellular, Polymorphonuclear Retrobulbar, Inflammation, Neutrophil	1 [1.0]					1 [2.0]
Harderian Gland	(10)	(10)	(10)	(10)	(10)	(10)
Degeneration		1 [1.0]	9 [1.1]	10 [1.4]	10 [1.1]	10 [2.0]
Inflammation, Neutrophil	1 [1.0]					
Inflammation, Chronic	4 [1.5]	6 [2.0]	6 [1.7]	9 [1.9]	6 [1.5]	4 [1.8]
<b>URINARY SYSTEM</b>						
Kidney	(10)	(10)	(10)	(10)	(10)	(10)
Accumulation, Hyaline Droplet	10 [1.0]	10 [1.0]	10 [1.6]	10 [2.0]	10 [3.0]	10 [3.0]
Nephropathy, Chronic	10 [1.6]	10 [1.3]	10 [1.5]	10 [1.7]	10 [1.7]	10 [2.6]
Urinary Bladder	(10)	(0)	(0)	(0)	(0)	(10)

\*\*\* END OF MALE \*\*\*

a - Number of animals examined microscopically at site and number of animals with lesion

b-Average severity grade(1-minimal;2-mild;3-moderate;4-marked)

Test Type: 90-DAY

p-Chloro-a,a,a-trifluorotoluene

Time Report Requested: 10:34:45

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 98-56-6

First Dose M/F: 10/26/09 / 10/26/09

Species/Strain: RATS/HSD

Lab: BNW

Harlan Sprague Dawley RATS FEMALE	CONTROL	125 ppm	250 ppm	500 ppm	1000 ppm	2000 ppm
-----------------------------------	---------	---------	---------	---------	----------	----------

**Disposition Summary**

Animals Initially In Study	10	10	10	10	10	10
Early Deaths						
Moribund Sacrifice						1
Survivors						
Terminal Sacrifice	10	10	10	10	10	9
Animals Examined Microscopically	10	10	10	10	10	10

## ALIMENTARY SYSTEM

Esophagus	(10)	(0)	(0)	(0)	(0)	(10)
Intestine Large, Cecum	(10)	(0)	(0)	(0)	(0)	(10)
Intestine Large, Colon	(10)	(0)	(0)	(0)	(0)	(10)
Intestine Large, Rectum	(10)	(0)	(0)	(0)	(0)	(10)
Intestine Small, Duodenum	(10)	(0)	(0)	(0)	(0)	(10)
Intestine Small, Ileum	(10)	(0)	(0)	(0)	(0)	(10)
Intestine Small, Jejunum	(10)	(0)	(0)	(0)	(0)	(10)
Liver	(10)	(10)	(10)	(10)	(10)	(10)
Clear Cell Focus						2
Hepatodiaphragmatic Nodule			1		1	
Inflammation, Chronic Active					1 [1.0]	
Centrilobular, Hepatocyte, Hypertrophy					10 [1.3]	10 [2.0]
Mesentery	(0)	(0)	(0)	(0)	(0)	(1)
Fat, Necrosis						1 [1.0]
Pancreas	(10)	(0)	(0)	(0)	(0)	(10)
Infiltration Cellular, Polymorphonuclear						1 [1.0]
Salivary Glands	(10)	(0)	(0)	(0)	(0)	(10)
Atrophy						1 [4.0]
Stomach, Forestomach	(10)	(0)	(0)	(0)	(0)	(10)
Stomach, Glandular	(10)	(0)	(0)	(0)	(0)	(10)
Tongue	(0)	(0)	(0)	(0)	(0)	(1)
Inflammation, Chronic Active						1 [4.0]

a - Number of animals examined microscopically at site and number of animals with lesion

b-Average severity grade(1-minimal;2-mild;3-moderate;4-marked)

Test Type: 90-DAY

p-Chloro-a,a,a-trifluorotoluene

Time Report Requested: 10:34:45

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 98-56-6

First Dose M/F: 10/26/09 / 10/26/09

Species/Strain: RATS/HSD

Lab: BNW

Harlan Sprague Dawley RATS FEMALE	CONTROL	125 ppm	250 ppm	500 ppm	1000 ppm	2000 ppm
<b>CARDIOVASCULAR SYSTEM</b>						
Blood Vessel	(10)	(0)	(0)	(0)	(0)	(10)
Heart	(10)	(0)	(0)	(0)	(0)	(10)
Cardiomyopathy	1 [1.0]					
<b>ENDOCRINE SYSTEM</b>						
Adrenal Cortex	(10)	(10)	(10)	(10)	(10)	(10)
Vacuolization Cytoplasmic					4 [1.0]	10 [1.0]
Adrenal Medulla	(10)	(10)	(10)	(10)	(9)	(10)
Islets, Pancreatic	(10)	(0)	(0)	(0)	(0)	(10)
Parathyroid Gland	(10)	(0)	(0)	(0)	(0)	(5)
Pituitary Gland	(10)	(0)	(0)	(0)	(0)	(10)
Thyroid Gland	(10)	(0)	(0)	(0)	(0)	(10)
<b>GENERAL BODY SYSTEM</b>						
None						
<b>GENITAL SYSTEM</b>						
Clitoral Gland	(9)	(0)	(0)	(0)	(0)	(10)
Inflammation, Chronic Active	1 [1.0]					1 [2.0]
Ovary	(10)	(0)	(1)	(0)	(0)	(10)
Cyst			1 [1.0]			
Uterus	(10)	(0)	(0)	(0)	(0)	(10)
<b>HEMATOPOIETIC SYSTEM</b>						
Bone Marrow	(10)	(0)	(0)	(0)	(0)	(10)
Lymph Node	(0)	(0)	(0)	(1)	(0)	(0)
Lumbar, Hyperplasia, Lymphoid				1 [2.0]		

a - Number of animals examined microscopically at site and number of animals with lesion

b-Average severity grade(1-minimal;2-mild;3-moderate;4-marked)

Test Type: 90-DAY

p-Chloro-a,a,a-trifluorotoluene

Time Report Requested: 10:34:45

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 98-56-6

First Dose M/F: 10/26/09 / 10/26/09

Species/Strain: RATS/HSD

Lab: BNW

Harlan Sprague Dawley RATS FEMALE	CONTROL	125 ppm	250 ppm	500 ppm	1000 ppm	2000 ppm
Lymph Node, Bronchial	(8)	(0)	(0)	(0)	(0)	(9)
Lymph Node, Mandibular	(10)	(0)	(0)	(0)	(0)	(9)
Lymph Node, Mediastinal	(8)	(0)	(0)	(0)	(0)	(8)
Lymph Node, Mesenteric	(10)	(0)	(0)	(0)	(0)	(10)
Spleen	(10)	(0)	(0)	(0)	(0)	(10)
Thymus	(10)	(10)	(10)	(10)	(10)	(10)
Atrophy						1 [3.0]
<b>INTEGUMENTARY SYSTEM</b>						
Mammary Gland	(10)	(10)	(10)	(10)	(10)	(10)
Hyperplasia	1 [1.0]			4 [1.3]	6 [1.3]	10 [1.9]
Skin	(10)	(0)	(0)	(0)	(0)	(10)
<b>MUSCULOSKELETAL SYSTEM</b>						
Bone	(10)	(0)	(0)	(0)	(0)	(10)
<b>NERVOUS SYSTEM</b>						
Brain	(10)	(0)	(0)	(0)	(0)	(10)
<b>RESPIRATORY SYSTEM</b>						
Larynx	(10)	(0)	(0)	(0)	(0)	(10)
Lung	(10)	(0)	(0)	(0)	(0)	(10)
Infiltration Cellular, Histiocyte, Focal	1 [1.0]					1 [1.0]
Inflammation, Chronic Active						1 [1.0]
Metaplasia, Osseous						1 [1.0]
Nose	(10)	(0)	(0)	(0)	(0)	(10)
Erosion	1 [2.0]					1 [2.0]
Olfactory Epithelium, Accumulation, Hyaline Droplet	7 [1.0]					6 [1.3]
Trachea	(10)	(0)	(0)	(0)	(0)	(10)

a - Number of animals examined microscopically at site and number of animals with lesion

b-Average severity grade(1-minimal;2-mild;3-moderate;4-marked)



Experiment Number: 10472 - 01

**P18: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a) WITH AVERAGE SEVERITY GRADES[b]**

Date Report Requested: 08/05/2016

Test Type: 90-DAY

p-Chloro-a,a,a-trifluorotoluene

Time Report Requested: 10:34:45

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 98-56-6

First Dose M/F: 10/26/09 / 10/26/09

Species/Strain: RATS/HSD

Lab: BNW

---

Harlan Sprague Dawley RATS FEMALE	CONTROL	125 ppm	250 ppm	500 ppm	1000 ppm	2000 ppm
-----------------------------------	---------	---------	---------	---------	----------	----------

---

SPECIAL SENSES SYSTEM						
Eye	(10)	(0)	(0)	(0)	(0)	(10)
Harderian Gland	(10)	(10)	(10)	(10)	(10)	(10)
Atrophy		1 [1.0]				
Degeneration		3 [1.0]	5 [1.0]	9 [1.1]	10 [1.5]	10 [2.0]
Inflammation, Chronic		1 [1.0]	3 [1.3]	6 [1.7]	5 [1.4]	1 [1.0]

---

URINARY SYSTEM						
Kidney	(10)	(10)	(10)	(10)	(10)	(10)
Nephropathy, Chronic	7 [1.0]	4 [1.0]	7 [1.0]	9 [1.2]	10 [1.1]	10 [1.6]
Urinary Bladder	(10)	(0)	(0)	(0)	(0)	(10)

---

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

a - Number of animals examined microscopically at site and number of animals with lesion

b-Average severity grade(1-minimal;2-mild;3-moderate;4-marked)