

Experiment Number: 10472 - 03

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

Date Report Requested: 05/16/2016

Test Type: CHRONIC

p-Chloro-a,a,a-trifluorotoluene

Time Report Requested: 11:19:34

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 98-56-6

First Dose M/F: 01/17/11 / 01/17/11

Species/Strain: RATS/HSD

Lab: BNW

F2_HSD Rats

NTP Study Number: C10472B
Lock Date: 08/29/2013
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: 03/08/2016

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Species/Strain: RATS/HSD

Lab: BNW

Harlan Sprague Dawley RATS MALE	Control	100 ppm	300 ppm	1000 ppm
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Disposition Summary

Animals Initially In Study	50	50	50	50
Early Deaths				
Moribund Sacrifice	16	19	21	27
Natural Death	9	10	14	18
Survivors				
Terminal Sacrifice	25	21	15	5
Animals Examined Microscopically	50	50	50	50

ALIMENTARY SYSTEM

Esophagus	(50)	(50)	(50)	(50)
Intestine Large, Cecum	(50)	(50)	(50)	(50)
Inflammation, Acute		1 [3.0]		
Artery, Inflammation	1 [2.0]	1 [1.0]		
Intestine Large, Colon	(50)	(50)	(50)	(50)
Intestine Large, Rectum	(50)	(50)	(50)	(50)
Serosa, Inflammation	1 [1.0]			
Intestine Small, Duodenum	(50)	(50)	(50)	(50)
Hemorrhage				1 [3.0]
Peyer's Patch, Hyperplasia, Lymphoid		1 [2.0]	1 [3.0]	
Intestine Small, Ileum	(50)	(50)	(50)	(50)
Cyst				1 [2.0]
Hemorrhage				1 [3.0]
Artery, Inflammation	1 [2.0]			
Peyer's Patch, Hyperplasia, Lymphoid			1 [3.0]	
Intestine Small, Jejunum	(50)	(50)	(50)	(50)
Inflammation				1 [3.0]
Artery, Inflammation	1 [2.0]			1 [2.0]
Peyer's Patch, Hyperplasia, Lymphoid		1 [2.0]	1 [3.0]	
Liver	(50)	(50)	(50)	(50)
Angiectasis				3 [1.3]
Basophilic Focus	2	3	4	2
Cholangiofibrosis				1 [4.0]
Clear Cell Focus	40	31	29	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)

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Species/Strain: RATS/HSD

Lab: BNW

Harlan Sprague Dawley RATS MALE	Control	100 ppm	300 ppm	1000 ppm
Degeneration, Cystic		2 [1.0]	1 [1.0]	1 [1.0]
Eosinophilic Focus	1	5	6	8
Fatty Change		3 [1.3]	7 [1.3]	26 [1.2]
Hematopoietic Cell Proliferation	1 [1.0]	1 [1.0]	1 [1.0]	
Hemorrhage	1 [1.0]	1 [1.0]		
Hepatodiaphragmatic Nodule	2			
Hyperplasia, Nodular	1 [3.0]			
Hypertrophy				1 [1.0]
Inflammation, Chronic Active	2 [1.0]	1 [1.0]		
Mixed Cell Focus	2	6	3	2
Vacuolization Cytoplasmic		1 [4.0]		
Bile Duct, Cyst		1	2	
Bile Duct, Hyperplasia	32 [1.1]	26 [1.0]	24 [1.1]	23 [1.1]
Centrilobular, Hepatocyte, Hypertrophy	2 [1.0]	17 [1.2]	39 [1.5]	47 [1.8]
Centrilobular, Hepatocyte, Necrosis			1 [2.0]	2 [2.5]
Hepatocyte, Degeneration	1 [1.0]			
Hepatocyte, Necrosis	3 [1.0]	3 [1.7]	4 [1.0]	4 [1.0]
Mesentery	(2)	(2)	(1)	(1)
Artery, Inflammation				1 [2.0]
Fat, Necrosis	1 [1.0]	2 [2.5]	1 [2.0]	
Pancreas	(50)	(50)	(50)	(50)
Inflammation			1 [1.0]	
Acinus, Atrophy	8 [1.0]	6 [1.0]	6 [1.2]	4 [1.3]
Acinus, Hyperplasia	7 [1.3]	11 [1.2]	12 [1.1]	11 [2.0]
Acinus, Vacuolization Cytoplasmic				1 [1.0]
Artery, Inflammation	17 [1.4]	19 [1.3]	19 [1.5]	19 [1.6]
Duct, Cyst			1 [4.0]	
Salivary Glands	(50)	(50)	(50)	(50)
Atrophy, Focal				1 [2.0]
Inflammation			2 [1.5]	1 [2.0]
Parotid Gland, Atrophy	1 [2.0]			
Stomach, Forestomach	(50)	(50)	(50)	(50)
Inflammation, Chronic Active		2 [1.5]		1 [1.0]
Mineralization		1 [2.0]		
Ulcer		1 [2.0]		4 [2.5]
Epithelium, Hyperplasia	1 [1.0]	4 [1.8]		4 [2.5]

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)

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Species/Strain: RATS/HSD

Lab: BNW

Harlan Sprague Dawley RATS MALE	Control	100 ppm	300 ppm	1000 ppm
Stomach, Glandular	(50)	(50)	(50)	(50)
Mineralization	1 [2.0]	1 [2.0]	1 [2.0]	3 [1.7]
Ulcer	1 [3.0]	1 [2.0]		
Tongue	(0)	(1)	(0)	(0)
Artery, Inflammation		1 [2.0]		
Tooth	(1)	(0)	(0)	(0)

CARDIOVASCULAR SYSTEM

Blood Vessel	(50)	(50)	(49)	(50)
Aorta, Inflammation	1 [2.0]			
Aorta, Mineralization	3 [1.7]	1 [3.0]	2 [2.0]	3 [2.3]
Heart	(50)	(50)	(50)	(50)
Cardiomyopathy	41 [1.3]	39 [1.4]	45 [1.5]	40 [1.4]
Congestion			1 [2.0]	
Atrium, Thrombosis		2 [3.5]	1 [2.0]	4 [3.0]
Atrium, Myocardium, Inflammation			1 [3.0]	
Epicardium, Inflammation	1 [1.0]			
Myocardium, Mineralization				1 [1.0]

ENDOCRINE SYSTEM

Adrenal Cortex	(50)	(50)	(50)	(50)
Angiectasis			1 [1.0]	
Degeneration, Cystic	9 [1.1]	5 [1.0]	10 [1.3]	6 [1.0]
Hyperplasia	11 [1.3]	15 [1.3]	19 [1.2]	8 [1.1]
Hypertrophy	18 [1.2]	11 [1.3]	13 [1.2]	14 [1.3]
Necrosis		2 [1.5]	2 [1.5]	2 [1.5]
Thrombosis		2 [1.5]	1 [3.0]	1 [2.0]
Vacuolization Cytoplasmic	1 [2.0]	1 [1.0]		
Zona Fasciculata, Atrophy				1 [4.0]
Adrenal Medulla	(50)	(50)	(50)	(50)
Hyperplasia	28 [1.6]	37 [1.5]	35 [1.8]	30 [2.2]
Necrosis				1 [3.0]
Islets, Pancreatic	(50)	(50)	(50)	(50)

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Harlan Sprague Dawley RATS MALE	Control	100 ppm	300 ppm	1000 ppm
Hyperplasia	1 [1.0]	1 [1.0]	1 [1.0]	1 [4.0]
Parathyroid Gland	(48)	(48)	(48)	(46)
Hyperplasia	4 [1.0]	1 [1.0]	4 [1.8]	1 [3.0]
Hyperplasia, Focal				1 [1.0]
Pituitary Gland	(50)	(50)	(49)	(50)
Angiectasis		1 [2.0]	1 [2.0]	
Cyst	2 [1.0]	3 [1.3]	5 [1.0]	1 [1.0]
Pars Distalis, Hyperplasia	13 [1.6]	15 [1.5]	12 [1.8]	8 [1.8]
Pars Distalis, Necrosis			1 [3.0]	
Pars Intermedia, Hyperplasia	1 [2.0]			
Thyroid Gland	(50)	(49)	(49)	(50)
Ultimobranchial Cyst	2	1	2	2
Ultimobranchial Cyst, Multiple	1			
C-cell, Hyperplasia	16 [1.4]	12 [1.7]	14 [1.6]	15 [1.5]
Follicular Cell, Hyperplasia	1 [1.0]	1 [4.0]		1 [1.0]
Follicular Cell, Hypertrophy		1 [4.0]		

GENERAL BODY SYSTEM

None

GENITAL SYSTEM

Coagulating Gland	(1)	(0)	(0)	(0)
Inflammation	1 [2.0]			
Epididymis	(50)	(50)	(50)	(50)
Atrophy				1 [4.0]
Artery, Inflammation	1 [1.0]	3 [1.7]	2 [1.5]	1 [2.0]
Preputial Gland	(50)	(50)	(50)	(50)
Cyst	4 [2.0]	2 [2.0]	3 [2.0]	1 [2.0]
Inflammation	26 [1.4]	26 [1.5]	14 [1.1]	17 [1.3]
Prostate	(50)	(50)	(50)	(50)
Atrophy				1 [4.0]
Inflammation	1 [3.0]	5 [2.0]	1 [1.0]	2 [1.5]
Seminal Vesicle	(50)	(50)	(50)	(50)

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Harlan Sprague Dawley RATS MALE	Control	100 ppm	300 ppm	1000 ppm
Atrophy				1 [4.0]
Inflammation	3 [1.7]	2 [1.5]		2 [1.0]
Testes	(50)	(50)	(50)	(50)
Artery, Inflammation	22 [1.7]	26 [2.0]	25 [2.0]	28 [1.7]
Germinal Epithelium, Atrophy	5 [2.2]	6 [2.7]	12 [2.1]	6 [2.3]
Interstitial Cell, Hyperplasia	1 [1.0]	1 [2.0]		2 [2.0]
Tunic, Inflammation			1 [1.0]	

HEMATOPOIETIC SYSTEM

Bone Marrow	(50)	(50)	(50)	(50)
Hyperplasia			1 [4.0]	
Lymph Node	(7)	(7)	(10)	(4)
Axillary, Congestion		1 [2.0]		
Deep Cervical, Hyperplasia	1 [3.0]			
Iliac, Ectasia			1 [2.0]	
Iliac, Hyperplasia	1 [2.0]			
Inguinal, Ectasia		1 [2.0]		
Lumbar, Congestion		1 [2.0]		
Lumbar, Ectasia		1 [2.0]		
Lumbar, Hyperplasia		1 [1.0]		
Renal, Congestion	1 [2.0]	4 [2.0]	9 [2.0]	3 [2.0]
Renal, Ectasia		2 [2.0]		
Renal, Hyperplasia	1 [2.0]			
Lymph Node, Bronchial	(30)	(26)	(29)	(26)
Lymph Node, Mandibular	(50)	(50)	(50)	(50)
Congestion		1 [2.0]	2 [2.0]	1 [2.0]
Ectasia			1 [2.0]	1 [2.0]
Hyperplasia	3 [2.7]	1 [3.0]	1 [1.0]	
Lymph Node, Mediastinal	(50)	(49)	(50)	(50)
Congestion	3 [2.0]	2 [2.0]	5 [2.0]	8 [2.0]
Hyperplasia		1 [2.0]	1 [2.0]	
Lymph Node, Mesenteric	(49)	(50)	(50)	(50)
Congestion	1 [2.0]	2 [2.0]		
Hemorrhage			1 [2.0]	

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Lab: BNW

Harlan Sprague Dawley RATS MALE	Control	100 ppm	300 ppm	1000 ppm
Spleen	(50)	(50)	(50)	(50)
Hematopoietic Cell Proliferation	29 [1.1]	30 [1.0]	30 [1.1]	22 [1.2]
Hemorrhage	1 [3.0]			
Necrosis		1 [3.0]		
Lymphoid Follicle, Hyperplasia			1 [2.0]	
Red Pulp, Congestion		1 [1.0]		1 [2.0]
Thymus	(48)	(50)	(48)	(49)
Atrophy	45 [3.4]	44 [3.6]	46 [3.5]	45 [3.5]
Cyst			1 [1.0]	1 [2.0]
Hematopoietic Cell Proliferation			1 [2.0]	

INTEGUMENTARY SYSTEM

Mammary Gland	(43)	(38)	(38)	(37)
Skin	(50)	(50)	(50)	(50)
Cyst, Squamous	1			
Cyst Epithelial Inclusion	3 [1.7]	4 [1.5]	4 [2.0]	3 [2.0]
Edema		1 [3.0]	1 [1.0]	
Inflammation	2 [2.5]	1 [3.0]	1 [2.0]	
Ulcer			1 [2.0]	3 [2.7]
Sebaceous Gland, Cyst			1 [2.0]	
Sebaceous Gland, Inflammation, Suppurative	1 [2.0]			
Subcutaneous Tissue, Fibrosis		1 [2.0]		

MUSCULOSKELETAL SYSTEM

Bone	(50)	(50)	(50)	(50)
Skeletal Muscle	(7)	(6)	(4)	(2)
Degeneration	1 [2.0]			
Inflammation	2 [1.0]			
Regeneration		1 [2.0]		

NERVOUS SYSTEM

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Harlan Sprague Dawley RATS MALE	Control	100 ppm	300 ppm	1000 ppm
Brain	(50)	(50)	(50)	(50)
Angiectasis				1 [1.0]
Gliosis	1 [1.0]			
Hemorrhage				1 [1.0]
Artery, Inflammation		1 [3.0]		
Cerebellum, Necrosis	1 [2.0]			
Cerebrum, Necrosis	1 [1.0]			2 [1.5]
Glial Cell, Hyperplasia	1 [3.0]			
Hypothalamus, Compression		2 [3.0]		1 [2.0]
Unilateral, Compression			1 [4.0]	
Peripheral Nerve	(7)	(5)	(4)	(2)
Axon, Degeneration	3 [1.3]			
Spinal Cord	(7)	(5)	(4)	(2)
Axon, Degeneration		1 [2.0]		
Nerve, Gliosis	1 [2.0]			

RESPIRATORY SYSTEM

Larynx	(50)	(50)	(50)	(50)
Inflammation	5 [1.0]	6 [1.0]	6 [1.0]	4 [1.3]
Metaplasia, Squamous			1 [2.0]	
Lung	(50)	(50)	(50)	(50)
Edema		1 [2.0]	1 [2.0]	
Fibrosis	8 [1.4]	22 [1.5]	28 [1.4]	24 [1.8]
Foreign Body				2
Hemorrhage	11 [1.2]	23 [1.7]	28 [1.5]	28 [1.7]
Infiltration Cellular, Histiocyte	1 [1.0]			
Inflammation, Chronic	32 [1.2]	42 [1.5]	47 [1.4]	45 [1.8]
Metaplasia, Osseous	12 [1.0]	17 [1.1]	17 [1.0]	9 [1.0]
Alveolar Epithelium, Hyperplasia	1 [1.0]	2 [1.5]		
Alveolus, Infiltration Cellular, Histiocyte	27 [1.0]	26 [1.1]	27 [1.1]	22 [1.2]
Bronchiole, Inflammation, Suppurative				1 [2.0]
Mediastinum, Hemorrhage		1 [3.0]		
Nose	(50)	(50)	(50)	(50)
Exudate	8 [1.3]	12 [1.0]	12 [1.0]	18 [1.1]

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Foreign Body		1 [1.0]		
Hemorrhage			1 [2.0]	
Inflammation, Chronic Active	2 [1.0]			
Nasopharyngeal Duct, Inflammation, Suppurative				1 [1.0]
Olfactory Epithelium, Accumulation, Hyaline Droplet	37 [1.5]	31 [1.3]	34 [1.3]	30 [1.2]
Olfactory Epithelium, Degeneration	1 [2.0]		2 [1.0]	2 [1.0]
Olfactory Epithelium, Inflammation				1 [1.0]
Olfactory Epithelium, Metaplasia, Respiratory	1 [1.0]			
Trachea	(50)	(50)	(50)	(50)
Inflammation	1 [1.0]			

SPECIAL SENSES SYSTEM

Eye	(50)	(50)	(50)	(50)
Degeneration		1 [3.0]		
Hemorrhage		1 [3.0]		
Anterior Chamber, Inflammation, Suppurative	1 [3.0]	1 [3.0]		
Cornea, Hyperplasia			1 [1.0]	
Cornea, Inflammation	4 [1.5]	5 [1.6]	9 [1.4]	1 [3.0]
Harderian Gland	(50)	(50)	(50)	(50)
Atrophy		2 [1.5]	1 [2.0]	
Hyperplasia	1 [1.0]			
Inflammation		3 [1.0]	1 [1.0]	2 [1.0]
Zymbal's Gland	(1)	(2)	(0)	(0)

URINARY SYSTEM

Kidney	(50)	(50)	(50)	(50)
Cyst	3	2	2	3
Hemorrhage	1 [2.0]			
Infarct	1 [2.0]			
Inflammation, Chronic Active	1 [1.0]			
Nephropathy	49 [2.5]	49 [2.7]	50 [3.3]	50 [3.4]

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Harlan Sprague Dawley RATS MALE	Control	100 ppm	300 ppm	1000 ppm
Thrombosis				1 [2.0]
Pelvis, Dilatation		2 [2.5]		
Renal Tubule, Mineralization	1 [2.0]	1 [3.0]		
Urinary Bladder	(50)	(50)	(50)	(50)
Inflammation		2 [2.5]		
Necrosis		1 [3.0]		
Ulcer	1 [3.0]			1 [2.0]
Urothelium, Hyperplasia	1 [3.0]			

*** END OF MALE ***

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Harlan Sprague Dawley RATS FEMALE

Control

100 ppm

300 ppm

1000 ppm

Disposition Summary

	Control	100 ppm	300 ppm	1000 ppm
Animals Initially In Study	50	50	50	50
Early Deaths				
Accidentally Killed		1		
Moribund Sacrifice	22	27	18	18
Natural Death	5	1	7	2
Survivors				
Natural Death	1			
Terminal Sacrifice	22	21	25	30
Animals Examined Microscopically	50	50	50	50

ALIMENTARY SYSTEM

	Control	100 ppm	300 ppm	1000 ppm
Esophagus	(49)	(50)	(50)	(50)
Intestine Large, Cecum	(50)	(50)	(50)	(50)
Inflammation		1 [2.0]		
Artery, Inflammation		1 [2.0]		
Intestine Large, Colon	(50)	(50)	(50)	(50)
Inflammation		1 [2.0]		
Artery, Inflammation		1 [2.0]		
Artery, Serosa, Inflammation			1 [2.0]	
Intestine Large, Rectum	(50)	(50)	(50)	(50)
Inflammation		1 [2.0]		
Artery, Inflammation		1 [2.0]		
Intestine Small, Duodenum	(50)	(50)	(50)	(50)
Artery, Inflammation		1 [2.0]		
Intestine Small, Ileum	(50)	(50)	(50)	(50)
Intestine Small, Jejunum	(50)	(50)	(50)	(50)
Artery, Inflammation		1 [2.0]		1 [4.0]
Liver	(50)	(50)	(50)	(50)
Angiectasis		5 [1.4]	5 [1.0]	1 [1.0]
Basophilic Focus	7	3	2	7
Cholangiofibrosis	1 [3.0]			
Clear Cell Focus	16	15	23	38
Eosinophilic Focus	7	6	7	15

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Species/Strain: RATS/HSD

Lab: BNW

Harlan Sprague Dawley RATS FEMALE	Control	100 ppm	300 ppm	1000 ppm
Fatty Change	2 [1.0]	4 [1.0]	11 [1.2]	10 [1.3]
Fibrosis	1 [1.0]	1 [1.0]		1 [1.0]
Hematopoietic Cell Proliferation	7 [1.0]	1 [1.0]	4 [1.0]	3 [1.0]
Hepatodiaphragmatic Nodule	2	1	1	
Inflammation, Chronic Active	1 [1.0]			1 [1.0]
Mixed Cell Focus	6	6	8	18
Pigmentation	1 [1.0]			
Bile Duct, Cyst	4 [2.0]	11	5	5
Bile Duct, Cyst, Multiple	2		1	2
Bile Duct, Dilatation			1 [4.0]	
Bile Duct, Hyperplasia	14 [1.0]	13 [1.1]	17 [1.0]	13 [1.1]
Centrilobular, Hepatocyte, Hypertrophy		1 [2.0]	10 [1.1]	45 [1.9]
Hepatocyte, Necrosis	2 [1.5]		2 [1.5]	5 [1.2]
Hepatocyte, Periportal, Hypertrophy			1 [1.0]	
Serosa, Inflammation, Chronic Active				1 [3.0]
Vein, Thrombosis				1 [1.0]
Mesentery	(1)	(1)	(1)	(2)
Artery, Inflammation				1 [3.0]
Fat, Necrosis	1 [1.0]			
Pancreas	(50)	(50)	(50)	(50)
Inflammation, Chronic				1 [3.0]
Acinus, Atrophy	2 [1.0]	4 [1.5]		2 [1.0]
Acinus, Basophilic Focus			1 [1.0]	
Acinus, Hyperplasia	1 [1.0]	1 [1.0]		4 [1.3]
Artery, Inflammation	3 [1.0]	7 [1.7]	5 [1.8]	5 [1.4]
Duct, Cyst		1 [2.0]		
Salivary Glands	(50)	(50)	(50)	(50)
Atrophy				1 [1.0]
Inflammation	1 [2.0]			
Parotid Gland, Hyperplasia	1 [2.0]			
Stomach, Forestomach	(50)	(50)	(50)	(50)
Inflammation, Chronic Active		2 [1.0]		1 [1.0]
Epithelium, Hyperplasia			1 [1.0]	3 [1.0]
Serosa, Inflammation, Chronic Active				1 [2.0]
Stomach, Glandular	(50)	(50)	(50)	(50)
Ectopic Tissue	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: CHRONIC

p-Chloro-a,a,a-trifluorotoluene

Time Report Requested: 11:19:34

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 98-56-6

First Dose M/F: 01/17/11 / 01/17/11

Species/Strain: RATS/HSD

Lab: BNW

Harlan Sprague Dawley RATS FEMALE	Control	100 ppm	300 ppm	1000 ppm
Artery, Inflammation			1 [2.0]	
Tooth	(0)	(1)	(0)	(0)
Inflammation, Suppurative		1 [4.0]		

CARDIOVASCULAR SYSTEM

Blood Vessel	(50)	(50)	(50)	(50)
Aorta, Inflammation		2 [2.0]		
Heart	(50)	(50)	(50)	(50)
Cardiomyopathy	16 [1.2]	12 [1.4]	15 [1.1]	17 [1.1]
Artery, Inflammation				1 [2.0]
Lymphatic, Pericardium, Inflammation		1 [2.0]		

ENDOCRINE SYSTEM

Adrenal Cortex	(50)	(50)	(50)	(50)
Angiectasis	9 [1.6]	4 [1.5]	8 [2.0]	7 [1.9]
Degeneration, Cystic	9 [1.4]	12 [1.2]	12 [1.8]	14 [1.4]
Hematopoietic Cell Proliferation	1 [1.0]		1 [1.0]	
Hyperplasia	4 [1.0]	7 [1.4]	8 [1.1]	12 [1.0]
Hypertrophy	15 [1.5]	17 [1.2]	11 [1.6]	20 [1.2]
Necrosis	3 [1.0]		2 [2.0]	2 [2.5]
Thrombosis	4 [2.8]		2 [2.0]	2 [2.0]
Adrenal Medulla	(49)	(50)	(50)	(50)
Angiectasis	1 [1.0]			
Degeneration	1 [1.0]			
Hyperplasia	17 [1.1]	25 [1.6]	34 [1.1]	36 [1.5]
Islets, Pancreatic	(50)	(50)	(50)	(50)
Hyperplasia		1 [1.0]		
Parathyroid Gland	(45)	(44)	(48)	(42)
Fibrosis			1 [1.0]	4 [1.5]
Hyperplasia			1 [2.0]	1 [3.0]
Pituitary Gland	(50)	(50)	(50)	(50)
Angiectasis	1 [2.0]	1 [1.0]		2 [1.0]
Cyst			1 [1.0]	1 [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: CHRONIC

p-Chloro-a,a,a-trifluorotoluene

Time Report Requested: 11:19:34

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 98-56-6

First Dose M/F: 01/17/11 / 01/17/11

Species/Strain: RATS/HSD

Lab: BNW

Harlan Sprague Dawley RATS FEMALE	Control	100 ppm	300 ppm	1000 ppm
Pars Distalis, Hyperplasia	15 [1.7]	14 [2.1]	16 [1.8]	17 [1.8]
Pars Distalis, Vacuolization Cytoplasmic			1 [1.0]	
Pars Intermedia, Hyperplasia	1 [4.0]	1 [1.0]		
Thyroid Gland	(50)	(50)	(50)	(50)
Inflammation, Chronic Active		1 [2.0]		
Ultimobranchial Cyst	3	1	1	1
Ultimobranchial Cyst, Multiple			1	
C-cell, Hyperplasia	16 [1.4]	15 [1.2]	21 [1.4]	13 [1.9]
Follicular Cell, Hyperplasia		1 [3.0]	1 [2.0]	

GENERAL BODY SYSTEM

None

GENITAL SYSTEM

Clitoral Gland	(50)	(50)	(49)	(50)
Cyst	3 [2.0]	4 [2.0]	2 [2.0]	7 [1.9]
Inflammation	13 [1.3]	21 [1.1]	15 [1.1]	16 [1.3]
Ovary	(50)	(50)	(50)	(50)
Cyst	11 [1.6]	7 [1.7]	8 [1.6]	10 [1.9]
Fibrosis	1 [1.0]			
Inflammation	1 [1.0]			
Inflammation, Suppurative			1 [3.0]	
Artery, Inflammation	1 [2.0]	1 [3.0]		
Granulosa Cell, Hyperplasia				1 [4.0]
Mesothelium, Hyperplasia	1 [1.0]			
Uterus	(50)	(50)	(50)	(50)
Adenomyosis	1 [1.0]		2 [2.0]	3 [2.7]
Bacterium	1			
Dilatation	1 [4.0]	3 [3.7]	3 [3.3]	
Hemorrhage	2 [3.5]		2 [2.5]	
Inflammation, Suppurative	1 [4.0]		2 [3.0]	2 [3.0]
Inflammation, Chronic Active	2 [3.0]	3 [2.3]	1 [3.0]	
Metaplasia, Squamous	4 [3.0]	6 [3.0]	10 [2.6]	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: CHRONIC

p-Chloro-a,a,a-trifluorotoluene

Time Report Requested: 11:19:34

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 98-56-6

First Dose M/F: 01/17/11 / 01/17/11

Species/Strain: RATS/HSD

Lab: BNW

Harlan Sprague Dawley RATS FEMALE	Control	100 ppm	300 ppm	1000 ppm
Necrosis			1 [3.0]	
Prolapse	1			
Thrombosis			1 [2.0]	
Artery, Inflammation, Chronic				1 [2.0]
Artery, Necrosis, Fibrinoid				1 [2.0]
Cervix, Cyst, Squamous, Multiple	1			
Cervix, Cyst, Squamous		1		1
Cervix, Hyperplasia, Squamous		2 [3.5]		
Cervix, Hypertrophy, Stromal	1 [4.0]			1 [3.0]
Endometrium, Atypical Hyperplasia			1 [2.0]	3 [2.3]
Endometrium, Erosion		1 [1.0]		
Endometrium, Hyperplasia, Cystic	41 [2.2]	34 [1.9]	31 [1.8]	22 [1.7]
Serosa, Fibrosis		1 [4.0]		
Serosa, Inflammation, Chronic Active				1 [4.0]
Vagina	(46)	(48)	(48)	(38)
Cyst, Squamous			1	
Hyperplasia, Stromal		1 [3.0]		
Hyperplasia, Granular Cell	1 [3.0]			
Inflammation, Suppurative		1 [4.0]	1 [3.0]	2 [2.5]
Inflammation, Chronic			1 [2.0]	
Ulcer			1 [3.0]	
Artery, Inflammation, Chronic Active		1 [3.0]		

HEMATOPOIETIC SYSTEM

Bone Marrow	(50)	(50)	(50)	(50)
Atrophy		1 [4.0]		
Lymph Node	(2)	(6)	(5)	(3)
Congestion		1 [1.0]		
Hyperplasia		1 [1.0]		
Iliac, Congestion			1 [2.0]	
Iliac, Ectasia				1 [2.0]
Iliac, Hyperplasia		1 [2.0]	2 [1.5]	
Lumbar, Congestion	1 [2.0]	1 [2.0]		
Lumbar, Hyperplasia		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: CHRONIC

p-Chloro-a,a,a-trifluorotoluene

Time Report Requested: 11:19:34

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 98-56-6

First Dose M/F: 01/17/11 / 01/17/11

Species/Strain: RATS/HSD

Lab: BNW

Harlan Sprague Dawley RATS FEMALE	Control	100 ppm	300 ppm	1000 ppm
Pancreatic, Hyperplasia		1 [2.0]		
Renal, Congestion	1 [2.0]	1 [2.0]	2 [2.0]	
Renal, Ectasia		1 [2.0]		
Lymph Node, Bronchial	(32)	(27)	(22)	(20)
Lymph Node, Mandibular	(49)	(50)	(50)	(50)
Hyperplasia	2 [3.0]			
Lymph Node, Mediastinal	(50)	(50)	(50)	(49)
Congestion		1 [2.0]		
Lymph Node, Mesenteric	(50)	(50)	(50)	(50)
Congestion	1 [2.0]			
Artery, Inflammation				1 [4.0]
Spleen	(50)	(50)	(50)	(50)
Hematopoietic Cell Proliferation	31 [1.3]	31 [1.0]	38 [1.2]	36 [1.1]
Inflammation		1 [3.0]		
Capsule, Fibrosis				1 [1.0]
Red Pulp, Infiltration Cellular, Histiocyte				1 [4.0]
Thymus	(50)	(48)	(49)	(49)
Atrophy	44 [3.2]	44 [3.6]	43 [3.5]	48 [3.8]
Cyst	1 [2.0]		1 [1.0]	
Hyperplasia, Lymphoid		1 [3.0]		

INTEGUMENTARY SYSTEM

Mammary Gland	(50)	(50)	(50)	(50)
Cyst			1 [2.0]	1 [2.0]
Hyperplasia, Cystic	2 [3.0]	7 [2.4]	1 [2.0]	1 [2.0]
Skin	(50)	(50)	(50)	(50)
Cyst Epithelial Inclusion	1 [2.0]		3 [2.0]	
Inflammation				1 [3.0]
Ulcer	3 [2.0]			

MUSCULOSKELETAL SYSTEM

Bone	(50)	(50)	(50)	(50)
Skeletal Muscle	(3)	(6)	(1)	(3)

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: CHRONIC

p-Chloro-a,a,a-trifluorotoluene

Time Report Requested: 11:19:34

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 98-56-6

First Dose M/F: 01/17/11 / 01/17/11

Species/Strain: RATS/HSD

Lab: BNW

Harlan Sprague Dawley RATS FEMALE	Control	100 ppm	300 ppm	1000 ppm
Hemorrhage	1 [2.0]			

NERVOUS SYSTEM

Brain	(50)	(50)	(50)	(50)
Hypothalamus, Compression	7 [2.4]	7 [3.3]	6 [3.3]	1 [4.0]
Unilateral, Inflammation, Granulomatous		1 [2.0]		
Unilateral, Necrosis		1 [2.0]		
Peripheral Nerve	(1)	(4)	(2)	(1)
Inflammation			1 [1.0]	
Spinal Cord	(1)	(4)	(1)	(1)
Cyst Epithelial Inclusion		1 [1.0]		
Axon, Nerve, Degeneration		1 [2.0]		

RESPIRATORY SYSTEM

Larynx	(50)	(50)	(50)	(50)
Bacterium				1
Fibrosis				1 [4.0]
Foreign Body				1 [2.0]
Inflammation	1 [1.0]	2 [1.0]	2 [1.5]	4 [1.3]
Inflammation, Chronic Active				1 [3.0]
Necrosis				1 [3.0]
Squamous Epithelium, Hyperplasia	2 [1.0]			1 [1.0]
Lung	(50)	(50)	(50)	(50)
Fibrosis	11 [1.0]	17 [1.1]	24 [1.4]	28 [1.4]
Hemorrhage	12 [1.1]	11 [1.5]	18 [1.4]	26 [1.4]
Inflammation, Chronic	35 [1.2]	42 [1.2]	48 [1.4]	46 [1.4]
Metaplasia, Osseous	5 [1.0]	4 [1.0]	4 [1.0]	2 [1.0]
Metaplasia, Squamous	1 [2.0]	2 [1.0]	2 [1.0]	
Alveolar Epithelium, Hyperplasia	2 [1.0]		1 [1.0]	1 [1.0]
Alveolus, Infiltration Cellular, Histiocyte	35 [1.0]	31 [1.1]	36 [1.1]	33 [1.1]
Artery, Mediastinum, Inflammation, Chronic				1 [4.0]
Artery, Mediastinum, Necrosis, Fibrinoid				1 [3.0]
Bronchiole, Hyperplasia			1 [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: CHRONIC

p-Chloro-a,a,a-trifluorotoluene

Time Report Requested: 11:19:34

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 98-56-6

First Dose M/F: 01/17/11 / 01/17/11

Species/Strain: RATS/HSD

Lab: BNW

Harlan Sprague Dawley RATS FEMALE	Control	100 ppm	300 ppm	1000 ppm
Mediastinum, Inflammation, Chronic		1 [2.0]		
Nose	(50)	(50)	(50)	(50)
Foreign Body		1 [1.0]		1 [1.0]
Inflammation	2 [1.0]	3 [1.0]	6 [1.2]	2 [1.0]
Inflammation, Acute		1 [3.0]		
Nasopharyngeal Duct, Inflammation, Suppurative			1 [3.0]	
Olfactory Epithelium, Accumulation, Hyaline Droplet	40 [1.9]	36 [1.5]	40 [1.4]	30 [1.3]
Olfactory Epithelium, Degeneration		1 [1.0]	2 [1.0]	
Olfactory Epithelium, Hemorrhage				1 [1.0]
Respiratory Epithelium, Accumulation, Hyaline Droplet				1 [1.0]
Respiratory Epithelium, Inflammation				1 [1.0]
Sinus, Polyp, Inflammatory	1 [3.0]			
Trachea	(50)	(50)	(50)	(50)
SPECIAL SENSES SYSTEM				
Eye	(50)	(50)	(50)	(50)
Cornea, Inflammation	1 [1.0]	1 [3.0]		
Harderian Gland	(50)	(50)	(50)	(50)
Atrophy	2 [1.0]			1 [2.0]
Hyperplasia				3 [1.7]
Inflammation	1 [1.0]	1 [1.0]	4 [1.5]	2 [1.5]
Zymbal's Gland	(0)	(1)	(1)	(2)
URINARY SYSTEM				
Kidney	(50)	(50)	(50)	(50)
Cyst	1	1	2	2
Infarct			1 [2.0]	
Inflammation	1 [2.0]			
Nephropathy	44 [1.3]	49 [1.5]	49 [1.6]	47 [1.4]
Artery, Inflammation				1 [3.0]

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)

Experiment Number: 10472 - 03

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

Date Report Requested: 05/16/2016

Test Type: CHRONIC

p-Chloro-a,a,a-trifluorotoluene

Time Report Requested: 11:19:34

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 98-56-6

First Dose M/F: 01/17/11 / 01/17/11

Species/Strain: RATS/HSD

Lab: BNW

Harlan Sprague Dawley RATS FEMALE	Control	100 ppm	300 ppm	1000 ppm
Interstitial, Inflammation, Chronic Active	1 [3.0]		1 [3.0]	
Pelvis, Inflammation, Chronic Active	1 [3.0]		1 [3.0]	
Renal Tubule, Hyperplasia			2 [1.0]	
Urinary Bladder	(50)	(50)	(50)	(50)
Polyp, Inflammatory				1

*** 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)