

Experiment Number: 07040 - 01

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

Date Report Requested: 02/06/2018

Test Type: 28-DAY

Perfluorobutane sulfonate (PFBS)

Time Report Requested: 12:38:00

Route: GAVAGE

CAS Number: 375-73-5

First Dose M/F: 01/19/12 / 01/20/12

Species/Strain: RATS/HSD

Lab: BAT

PFBS\_Final 1

**NTP Study Number:** C07040  
**Lock Date:** 04/25/2016  
**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

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Harlan Sprague Dawley RATS MALE	0mg/kg/d M	62.6mg/kg/d M	125mg/kg/d M	250mg/kg/d M	500mg/kg/d M	1000mg/kg/d M
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**Disposition Summary**

Animals Initially In Study	10	10	10	10	10	10
Early Deaths						
Dosing Accident						1
Natural Death						9
Survivors						
Terminal Sacrifice	10	10	10	10	10	
Animals Examined Microscopically	10	10	10	10	10	10

## ALIMENTARY SYSTEM

Esophagus	(10)	(0)	(0)	(0)	(10)	(10)
Hemorrhage						1 [3.0]
Inflammation, Chronic					1 [1.0]	1 [2.0]
Perforation						1 [3.0]
Intestine Large, Cecum	(10)	(0)	(0)	(0)	(10)	(10)
Intestine Large, Colon	(10)	(0)	(0)	(0)	(10)	(10)
Infiltration Cellular	1 [1.0]					
Intestine Large, Rectum	(10)	(0)	(0)	(0)	(10)	(10)
Intestine Small, Duodenum	(10)	(0)	(0)	(0)	(10)	(10)
Intestine Small, Ileum	(10)	(0)	(0)	(0)	(10)	(10)
Intestine Small, Jejunum	(10)	(0)	(0)	(0)	(10)	(10)
Liver	(10)	(10)	(10)	(10)	(10)	(10)
Hemorrhage						1 [2.0]
Hepatodiaphragmatic Nodule		1 [1.0]				1 [2.0]
Infiltration Cellular, Mixed Cell	2 [1.0]	1 [1.0]	2 [1.0]	3 [1.0]	1 [1.0]	
Necrosis						1 [3.0]
Hepatocyte, Cytoplasmic Alteration			1 [1.0]		10 [1.0]	9 [1.6]
Hepatocyte, Hypertrophy			9 [1.0]	10 [1.3]	10 [1.7]	9 [2.1]
Pancreas	(10)	(10)	(10)	(10)	(10)	(10)
Salivary Glands	(10)	(0)	(0)	(0)	(10)	(10)
Stomach, Forestomach	(10)	(0)	(0)	(10)	(10)	(10)
Inflammation, Acute						1 [1.0]
Epithelium, Hyperplasia					1 [1.0]	6 [1.2]
Stomach, Glandular	(10)	(0)	(0)	(0)	(10)	(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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## CARDIOVASCULAR SYSTEM

Blood Vessel	(10)	(0)	(0)	(0)	(10)	(10)
Heart	(10)	(0)	(0)	(0)	(10)	(10)
Cardiomyopathy	1 [1.0]				1 [1.0]	

## ENDOCRINE SYSTEM

Adrenal Cortex	(10)	(0)	(0)	(1)	(10)	(10)
Adrenal Medulla	(10)	(0)	(0)	(1)	(10)	(10)
Islets, Pancreatic	(10)	(0)	(0)	(0)	(10)	(10)
Parathyroid Gland	(7)	(0)	(0)	(0)	(10)	(6)
Pituitary Gland	(10)	(0)	(0)	(0)	(10)	(10)
Thyroid Gland	(10)	(10)	(10)	(10)	(10)	(10)

## GENERAL BODY SYSTEM

None

## GENITAL SYSTEM

Epididymis	(10)	(0)	(0)	(0)	(10)	(10)
Duct, Exfoliated Germ Cell						2 [1.0]
Preputial Gland	(10)	(0)	(0)	(0)	(10)	(10)
Prostate	(10)	(0)	(0)	(0)	(10)	(10)
Seminal Vesicle	(10)	(0)	(0)	(0)	(10)	(10)
Testes	(10)	(10)	(10)	(10)	(10)	(10)
Germinal Epithelium, Degeneration						1 [1.0]

## HEMATOPOIETIC SYSTEM

Bone Marrow	(10)	(10)	(10)	(10)	(10)	(10)
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Hypocellularity						10 [2.6]
Lymph Node, Mandibular	(10)	(0)	(0)	(0)	(10)	(10)
Lymph Node, Mesenteric	(10)	(0)	(0)	(0)	(10)	(10)
Spleen	(10)	(10)	(10)	(10)	(10)	(10)
Thymus	(10)	(10)	(10)	(10)	(10)	(10)
Atrophy						5 [3.2]
<b>INTEGUMENTARY SYSTEM</b>						
Mammary Gland	(10)	(0)	(0)	(0)	(10)	(10)
Skin	(10)	(0)	(0)	(0)	(10)	(10)
<b>MUSCULOSKELETAL SYSTEM</b>						
Bone	(10)	(0)	(0)	(0)	(10)	(10)
<b>NERVOUS SYSTEM</b>						
Brain	(10)	(0)	(0)	(0)	(10)	(10)
<b>RESPIRATORY SYSTEM</b>						
Lung	(10)	(0)	(0)	(0)	(10)	(10)
Erythrophagocytosis	1 [1.0]				1 [1.0]	
Fibrosis						1 [2.0]
Hemorrhage						2 [2.0]
Infiltration Cellular, Histiocyte					1 [1.0]	
Infiltration Cellular, Mononuclear Cell	1 [1.0]				1 [1.0]	
Inflammation, Chronic Active	1 [1.0]					1 [2.0]
Alveolar Epithelium, Hyperplasia					1 [1.0]	1 [2.0]
Perivascular, Inflammation, Acute						1 [1.0]
Nose	(10)	(10)	(10)	(10)	(10)	(10)
Olfactory Epithelium, Degeneration			3 [1.0]	7 [1.4]	9 [1.6]	9 [2.3]

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Species/Strain: RATS/HSD

Lab: BAT

Harlan Sprague Dawley RATS MALE	0mg/kg/d M	62.6mg/kg/d M	125mg/kg/d M	250mg/kg/d M	500mg/kg/d M	1000mg/kg/d M
Olfactory Epithelium, Hyperplasia			2 [1.0]	5 [1.2]	9 [1.6]	5 [1.4]
Olfactory Epithelium, Inflammation, Suppurative				2 [1.0]	2 [1.5]	9 [2.4]
Olfactory Epithelium, Necrosis						7 [2.0]
Trachea	(10)	(0)	(0)	(0)	(10)	(10)
<b>SPECIAL SENSES SYSTEM</b>						
Eye	(10)	(0)	(0)	(0)	(10)	(10)
Harderian Gland	(10)	(0)	(0)	(0)	(10)	(10)
Infiltration Cellular, Mononuclear Cell	1 [2.0]					
<b>URINARY SYSTEM</b>						
Kidney	(10)	(10)	(10)	(10)	(10)	(10)
Nephropathy, Chronic Progressive	6 [1.0]	4 [1.0]	2 [1.0]	6 [1.0]	3 [1.0]	3 [1.0]
Papilla, Necrosis						1 [2.0]
Urinary Bladder	(10)	(0)	(0)	(0)	(10)	(10)

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

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Harlan Sprague Dawley RATS FEMALE	0mg/kg/d F	62.6mg/kg/d F	125mg/kg/d F	250mg/kg/d F	500mg/kg/d F	1000mg/kg/d F
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**Disposition Summary**

Animals Initially In Study	10	10	10	10	10	10
Early Deaths						
Natural Death				1	1	8
Survivors						
Terminal Sacrifice	10	10	10	9	9	2
Animals Examined Microscopically	10	10	10	10	10	10

## ALIMENTARY SYSTEM

Esophagus	(10)	(0)	(0)	(1)	(10)	(10)
Inflammation, Chronic					1 [1.0]	3 [1.3]
Intestine Large, Cecum	(10)	(0)	(0)	(1)	(10)	(9)
Intestine Large, Colon	(10)	(0)	(0)	(1)	(10)	(9)
Intestine Large, Rectum	(10)	(0)	(0)	(1)	(10)	(9)
Intestine Small, Duodenum	(10)	(0)	(0)	(1)	(10)	(10)
Intestine Small, Ileum	(10)	(0)	(0)	(1)	(10)	(9)
Intestine Small, Jejunum	(10)	(0)	(0)	(1)	(10)	(9)
Liver	(10)	(10)	(10)	(10)	(10)	(10)
Infiltration Cellular, Mixed Cell	1 [1.0]			1 [1.0]		
Necrosis						3 [1.0]
Bile Duct, Cyst				1		
Hepatocyte, Cytoplasmic Alteration					9 [1.0]	10 [2.2]
Hepatocyte, Hypertrophy					8 [1.0]	10 [2.1]
Pancreas	(10)	(10)	(10)	(10)	(10)	(10)
Salivary Glands	(10)	(0)	(0)	(1)	(10)	(10)
Stomach, Forestomach	(10)	(0)	(0)	(10)	(10)	(10)
Ulcer					1 [2.0]	
Stomach, Glandular	(10)	(0)	(0)	(1)	(10)	(10)

## CARDIOVASCULAR SYSTEM

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

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Cardiomyopathy						1 [1.0]
Epicardium, Inflammation, Chronic Active						1 [1.0]
Myocardium, Necrosis						1 [1.0]

## ENDOCRINE SYSTEM

Adrenal Cortex	(10)	(0)	(0)	(1)	(10)	(10)
Adrenal Medulla	(10)	(0)	(0)	(1)	(10)	(10)
Islets, Pancreatic	(10)	(0)	(0)	(1)	(10)	(10)
Parathyroid Gland	(7)	(0)	(0)	(0)	(9)	(10)
Pituitary Gland	(10)	(0)	(0)	(1)	(10)	(10)
Thyroid Gland	(10)	(10)	(10)	(10)	(10)	(10)

## GENERAL BODY SYSTEM

None

## GENITAL SYSTEM

Clitoral Gland	(10)	(0)	(0)	(1)	(10)	(9)
Ovary	(10)	(10)	(10)	(10)	(10)	(9)
Uterus	(10)	(0)	(1)	(1)	(10)	(9)
Bilateral, Dilatation			1 [2.0]			
Vagina	(10)	(0)	(0)	(1)	(10)	(9)

## HEMATOPOIETIC SYSTEM

Bone Marrow	(10)	(10)	(10)	(10)	(10)	(10)
Hypocellularity						9 [2.9]
Lymph Node, Mandibular	(10)	(0)	(0)	(1)	(10)	(10)
Necrosis, Lymphoid						1 [1.0]
Lymph Node, Mesenteric	(10)	(0)	(0)	(1)	(10)	(9)
Spleen	(10)	(10)	(10)	(10)	(10)	(10)

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Thymus	(10)	(10)	(10)	(10)	(10)	(10)
Atrophy						5 [3.0]
Necrosis, Lymphoid						1 [2.0]
<b>INTEGUMENTARY SYSTEM</b>						
Mammary Gland	(10)	(0)	(0)	(1)	(10)	(10)
Skin	(10)	(0)	(0)	(1)	(10)	(10)
Hemorrhage				1 [3.0]		
<b>MUSCULOSKELETAL SYSTEM</b>						
Bone	(10)	(0)	(0)	(1)	(10)	(10)
<b>NERVOUS SYSTEM</b>						
Brain	(10)	(0)	(0)	(1)	(10)	(10)
<b>RESPIRATORY SYSTEM</b>						
Lung	(10)	(0)	(0)	(1)	(10)	(10)
Erythrophagocytosis					1 [1.0]	1 [1.0]
Fibrosis						1 [1.0]
Inflammation, Chronic Active					2 [1.0]	1 [2.0]
Nose	(10)	(10)	(10)	(10)	(10)	(10)
Olfactory Epithelium, Degeneration			4 [1.0]	9 [1.3]	9 [1.9]	7 [2.0]
Olfactory Epithelium, Hyperplasia				8 [1.1]	9 [1.4]	4 [1.5]
Olfactory Epithelium, Inflammation, Suppurative			1 [1.0]	1 [1.0]	2 [1.5]	8 [2.5]
Olfactory Epithelium, Necrosis						6 [1.8]
Trachea	(10)	(0)	(0)	(1)	(10)	(10)

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SPECIAL SENSES SYSTEM						
Eye	(10)	(0)	(0)	(1)	(10)	(10)
Harderian Gland	(10)	(0)	(0)	(1)	(10)	(10)
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URINARY SYSTEM						
Kidney	(10)	(10)	(10)	(10)	(10)	(10)
Nephropathy, Chronic Progressive		4 [1.0]		3 [1.0]	1 [1.0]	3 [1.0]
Papilla, Necrosis						4 [1.5]
Urinary Bladder	(10)	(0)	(0)	(1)	(10)	(9)

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

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