

Experiment Number: 20727 - 01
Test Type: 90-DAY
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: RATS/HSD

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL
ortho-Phthalaldehyde
CAS Number: 643-79-8

Date Report Requested: 10/16/2015
Time Report Requested: 12:31:33
First Dose M/F: 01/19/09 / 01/20/09
Lab: BNW

F1_Rev.1_HSD

NTP Study Number: C20727
Lock Date: 08/21/2009
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: 11/01/2011

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DAY ON TEST		0	0	0	0	0	0	0	0	0	0
HARLAN SPRAGUE DAWLEY RATS MALE CONTROL		0	0	0	0	0	0	0	0	0	0
		9	9	9	9	9	9	9	9	9	9
		3	3	3	3	3	3	3	3	3	3
	ANIMAL ID		0	0	0	0	0	0	0	0	0
		0	0	0	0	0	0	0	0	0	0
		0	0	0	0	0	0	0	0	0	0
		0	0	0	0	0	0	0	0	0	1
		1	2	3	4	5	6	7	8	9	0
* TOTALS											

ALIMENTARY SYSTEM

Esophagus	+	+	+	+	+	+	+	+	+	+	10
Intestine Large, Cecum	+	+	+	+	+	+	+	+	+	+	10
Intestine Large, Colon	+	+	+	+	+	+	+	+	+	+	10
Intestine Large, Rectum	+	+	+	+	+	+	+	+	+	+	10
Intestine Small, Duodenum	+	+	+	+	+	+	+	+	+	+	10
Intestine Small, Ileum	+	+	+	+	+	+	+	+	+	+	10
Intestine Small, Jejunum	+	+	+	+	+	+	+	+	+	+	10
Liver	+	+	+	+	+	+	+	+	+	+	10
Hepatocyte, Degeneration, Focal								2			1 2.0
Pancreas	+	+	+	+	+	+	+	+	+	+	10
Salivary Glands	+	+	+	+	+	+	+	+	+	+	10
Stomach, Forestomach	+	+	+	+	+	+	+	+	+	+	10
Stomach, Glandular	+	+	+	+	+	+	+	+	+	+	10

CARDIOVASCULAR SYSTEM

Blood Vessel	+	+	+	+	+	+	+	+	+	+	10
--------------	---	---	---	---	---	---	---	---	---	---	-----------

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HARLAN SPRAGUE DAWLEY RATS MALE CONTROL	DAY ON TEST										ANIMAL ID	
	0 9 3	0 9 3	0 9 3	0 9 3	0 9 3	0 9 3	0 9 3	0 9 3	0 9 3	0 9 3		
	0	0	0	0	0	0	0	0	0	0	0	
	0	0	0	0	0	0	0	0	0	0	0	
	0	0	0	0	0	0	0	0	0	0	0	
	0	0	0	0	0	0	0	0	0	0	0	
	1	2	3	4	5	6	7	8	9	0		
* TOTALS												

Heart	+	+	+	+	+	+	+	+	+	+	10	
Cardiomyopathy								1				1 1.0

ENDOCRINE SYSTEM

Adrenal Cortex	+	+	+	+	+	+	+	+	+	+	10	
Adrenal Medulla	+	+	+	+	+	+	+	+	+	+	10	
Islets, Pancreatic	+	+	+	+	+	+	+	+	+	+	10	
Parathyroid Gland	+	+	+	+	+	+	+	+	+	+	10	
Pituitary Gland	+	+	+	+	+	+	+	+	+	+	10	
Thyroid Gland	+	+	+	+	+	+	+	+	+	+	10	

GENERAL BODY SYSTEM

NONE

GENITAL SYSTEM

Epididymis	+	+	+	+	+	+	+	+	+	+	10	
Preputial Gland	+	+	+	+	+	+	+	+	+	+	10	
Inflammation, Chronic Active			2									1 2.0
Prostate	+	+	+	+	+	+	+	+	+	+	10	

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HARLAN SPRAGUE DAWLEY RATS MALE CONTROL	DAY ON TEST										* TOTALS
	0 9 3	0 9 3	0 9 3	0 9 3	0 9 3	0 9 3	0 9 3	0 9 3	0 9 3	0 9 3	
ANIMAL ID											
	0 0 0 1	0 0 0 2	0 0 0 3	0 0 0 4	0 0 0 5	0 0 0 6	0 0 0 7	0 0 0 8	0 0 0 9	0 0 0 0	
Seminal Vesicle	+	+	+	+	+	+	+	+	+	+	10
Testes	+	+	+	+	+	+	+	+	+	+	10
Germinal Epithelium, Degeneration, Focal	1										1 1.0
HEMATOPOIETIC SYSTEM											
Bone Marrow	+	+	+	+	+	+	+	+	+	+	10
Lymph Node, Bronchial	+	M	+	+	+	M	+	M	+	+	7
Lymph Node, Mandibular	M	+	+	+	+	+	+	+	+	+	9
Lymph Node, Mediastinal	+	M	+	+	+	+	+	+	M	+	8
Lymph Node, Mesenteric	+	+	+	+	+	+	+	+	+	+	10
Spleen	+	+	+	+	+	+	+	+	+	+	10
Thymus	+	+	+	+	+	+	+	+	+	+	10
INTEGUMENTARY SYSTEM											
Mammary Gland	M	M	+	M	+	+	+	+	+	M	6
Skin	+	+	+	+	+	+	+	+	+	+	10
MUSCULOSKELETAL SYSTEM											
Bone	+	+	+	+	+	+	+	+	+	+	10

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DAY ON TEST	0	0	0	0	0	0	0	0	0	0	ANIMAL ID	
	9	9	9	9	9	9	9	9	9	9		
HARLAN SPRAGUE DAWLEY RATS MALE CONTROL	3	3	3	3	3	3	3	3	3	3		
	0	0	0	0	0	0	0	0	0	0		
	0	0	0	0	0	0	0	0	0	0		
	0	0	0	0	0	0	0	0	0	0		
	0	0	0	0	0	0	0	0	0	1		
	1	2	3	4	5	6	7	8	9	0		* TOTALS

NERVOUS SYSTEM

Brain + + + + + + + + + + **10**

RESPIRATORY SYSTEM

Larynx + + + + + + + + + + **10**
 Inflammation, Chronic Active 1 **1 1.0**

Lung + + + + + + + + + + **10**

Nose + + + + + + + + + + **10**
 Olfactory Epithelium, Accumulation, Hyaline Droplet 1 1 1 2 1 2 2 1 1 **9 1.3**
 Olfactory Epithelium, Atrophy 1 1 **2 1.0**
 Olfactory Epithelium, Metaplasia, Respiratory 1 **1 1.0**
 Respiratory Epithelium, Accumulation, Hyaline Droplet 1 **1 1.0**
 Respiratory Epithelium, Hyperplasia 1 1 1 **3 1.0**

Trachea + + + + + + + + + + **10**

SPECIAL SENSES SYSTEM

Eye + + + + + + + + + + **10**
 Cornea, Inflammation, Suppurative 1 **1 1.0**

Harderian Gland + + + + + + + + + + **10**

URINARY SYSTEM

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HARLAN SPRAGUE DAWLEY RATS MALE CONTROL	DAY ON TEST										ANIMAL ID	
	003	003	003	003	003	003	003	003	003	003		
	0	0	0	0	0	0	0	0	0	0	001	
	0	0	0	0	0	0	0	0	0	0	002	
	0	0	0	0	0	0	0	0	0	0	003	
	0	0	0	0	0	0	0	0	0	0	004	
	0	0	0	0	0	0	0	0	0	0	005	
	0	0	0	0	0	0	0	0	0	0	006	
	0	0	0	0	0	0	0	0	0	0	007	
	0	0	0	0	0	0	0	0	0	0	008	
	0	0	0	0	0	0	0	0	0	0	009	
	0	0	0	0	0	0	0	0	0	0	010	
												* TOTALS
Kidney	+	+	+	+	+	+	+	+	+	+		10
Nephropathy	1	2	1	1	1	1	1	2	2	2		10 1.4
Urinary Bladder	+	+	+	+	+	+	+	+	+	+		10

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DAY ON TEST	0	0	0	0	0	0	0	0	0	0	
HARLAN SPRAGUE DAWLEY RATS MALE	9	9	9	9	9	9	9	9	9	9	
0.44 ppm	3	3	3	3	3	3	3	3	3	3	
ANIMAL ID	0	0	0	0	0	0	0	0	0	0	
	0	0	0	0	0	0	0	0	0	0	
	2	2	2	2	2	2	2	2	2	2	
	0	0	0	0	0	0	0	0	0	1	
	1	2	3	4	5	6	7	8	9	0	
											* TOTALS

ALIMENTARY SYSTEM

Liver											1
Hepatodiaphragmatic Nodule											1 1.0

CARDIOVASCULAR SYSTEM

NONE

ENDOCRINE SYSTEM

NONE

GENERAL BODY SYSTEM

NONE

GENITAL SYSTEM

Epididymis	+	+	+	+	+	+	+	+	+	+	10
Testes	+	+	+	+	+	+	+	+	+	+	10

HEMATOPOIETIC SYSTEM

Lymph Node											1
Pigmentation											1 1.0
Spleen	+	+		+	+	+	+	+	+	+	9

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DAY ON TEST	0	0	0	0	0	0	0	0	0	0	ANIMAL ID		
	9 3	0 3	0 9 3	0 9 3	0 9 3	0 9 3	0 9 3	0 9 3	0 9 3	0 9 3		0 9 3	* TOTALS
HARLAN SPRAGUE DAWLEY RATS MALE 0.44 ppm	0	0	0	0	0	0	0	0	0	0	2		
	0	0	0	0	0	0	0	0	0	0	2		
	0	0	0	0	0	0	0	0	0	0	0		
	1	2	3	4	5	6	7	8	9	0	1		

Thymus + + + + + + + + + + **10**

INTEGUMENTARY SYSTEM

Skin + + + + + + + + + + **10**
 Epithelium, Hair Follicle, Parakeratosis 1 1 1 1 1 1 1 1 1 **7 1.0**

MUSCULOSKELETAL SYSTEM

NONE

NERVOUS SYSTEM

NONE

RESPIRATORY SYSTEM

Larynx	+	+	+	+	+	+	+	+	+	+	10		
Inflammation, Chronic Active					1				1			2	1.0
Metaplasia, Squamous										1		1	1.0
Lung	+	+	+	+	+	+	+	+	+	+	10		
Alveolus, Infiltration Cellular, Histiocyte		1										1	1.0
Nose	+	+	+	+	+	+	+	+	+	+	10		
Inflammation, Suppurative	1	1	2	2	1	1	2	2	2	2		10	1.6
Goblet Cell, Respiratory Epithelium, Hyperplasia						1		1	1	1		4	1.0
Olfactory Epithelium, Accumulation, Hyaline Droplet	3	3	3	3	3	3	2	3	2	3		10	2.8
Olfactory Epithelium, Atrophy	2	2	2	2	2	2	2	2	1	2		10	1.9

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	9	9	9	9	9	9	9	9	9	9			
HARLAN SPRAGUE DAWLEY RATS	3	3	3	3	3	3	3	3	3	3			
MALE													
0.44 ppm													
	0	0	0	0	0	0	0	0	0	0			
	0	0	0	0	0	0	0	0	0	0			
	2	2	2	2	2	2	2	2	2	2			
	0	0	0	0	0	0	0	0	0	1			
	1	2	3	4	5	6	7	8	9	0			
	* TOTALS												
Olfactory Epithelium, Metaplasia, Respiratory	1										1	1.0	
Respiratory Epithelium, Hyperplasia	1	1	1	1	1	1		1	1	1	9	1.0	
Respiratory Epithelium, Metaplasia, Squamous	1	2	2	2	2	2	2	2	2	2	10	1.9	
Respiratory Epithelium, Ulcer	1										1	1.0	
Trachea	+	+	+	+	+	+	+	+	+	+	10		
SPECIAL SENSES SYSTEM													
Eye	+	+	+	+	+	+	+	+	+	+	10		
Cornea, Inflammation, Suppurative	1											1 1.0	
URINARY SYSTEM													
Kidney	+	+	+	+	+	+	+	+	+	+	10		
Nephropathy	2	2	1	1	2	1	1	1	1	1	10	1.3	

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	DAY ON TEST	0	0	0	0	0	0	0	0	0	0	0	
		0	0	0	0	0	0	0	0	0	0	0	
HARLAN SPRAGUE DAWLEY RATS		9	9	9	9	9	9	9	9	9	9	9	
MALE		3	3	3	3	3	3	3	3	3	3	3	
0.88 ppm													
	ANIMAL ID	0	0	0	0	0	0	0	0	0	0	0	
		0	0	0	0	0	0	0	0	0	0	0	
		4	4	4	4	4	4	4	4	4	4	4	
		0	0	0	0	0	0	0	0	0	0	1	
		1	2	3	4	5	6	7	8	9	0	0	
												* TOTALS	

ALIMENTARY SYSTEM

NONE

CARDIOVASCULAR SYSTEM

Heart													1
Congestion													1 1.0

ENDOCRINE SYSTEM

NONE

GENERAL BODY SYSTEM

NONE

GENITAL SYSTEM

Epididymis	+	+	+	+	+	+	+	+	+	+	+	10
Hypospermia											4	1 4.0
Duct, Exfoliated Germ Cell											2	1 2.0
Testes	+	+	+	+	+	+	+	+	+	+	+	10
Germinal Epithelium, Atrophy, Multifocal											4	1 4.0

HEMATOPOIETIC SYSTEM

Spleen	+	+	+	+	+	+	+	+	+	+	+	10
--------	---	---	---	---	---	---	---	---	---	---	---	-----------

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	0	0	0	0	0	0	0	0	0	0			
HARLAN SPRAGUE DAWLEY RATS MALE	9	9	9	9	9	9	9	9	9	9			
0.88 ppm	3	3	3	3	3	3	3	3	3	3			
	0	0	0	0	0	0	0	0	0	0			
	0	0	0	0	0	0	0	0	0	0			
	4	4	4	4	4	4	4	4	4	4			
	0	0	0	0	0	0	0	0	0	1			
	1	2	3	4	5	6	7	8	9	0			
											* TOTALS		
Thymus	+	+	+	+	+	+	+	+	+	+			10
INTEGUMENTARY SYSTEM													
Skin	+	+	+	+	+	+	+	+	+	+			10
Epithelium, Hair Follicle, Parakeratosis	1	1						1		1		4	1.0
MUSCULOSKELETAL SYSTEM													
NONE													
NERVOUS SYSTEM													
NONE													
RESPIRATORY SYSTEM													
Larynx	+	+	+	+	+	+	+	+	+	+			10
Inflammation, Chronic Active	2	2	1	1	1	1	1			2		8	1.4
Metaplasia, Squamous	1	1	1	1	1			1	1	1		8	1.0
Necrosis		1										1	1.0
Regeneration		2			2					1		3	1.7
Lung	+	+	+	+	+	+	+	+	+	+			10
Nose	+	+	+	+	+	+	+	+	+	+			10
Inflammation, Suppurative	2	2	2	2	2	2	2	2	2	2		10	2.0
Goblet Cell, Respiratory Epithelium, Hyperplasia		2	2	1	2	2	1					6	1.7
Olfactory Epithelium, Accumulation, Hyaline Droplet	2	1	2		1	2	3	2	1	1		9	1.7

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	9	9	9	9	9	9	9	9	9	9	
HARLAN SPRAGUE DAWLEY RATS MALE 0.88 ppm	3	3	3	3	3	3	3	3	3	3	
	0	0	0	0	0	0	0	0	0	0	
ANIMAL ID	0	0	0	0	0	0	0	0	0	0	
	4	4	4	4	4	4	4	4	4	4	
	0	0	0	0	0	0	0	0	0	0	
	1	2	3	4	5	6	7	8	9	0	
											* TOTALS
Olfactory Epithelium, Atrophy	2	2	2	2	2	2	2	2	2	2	10 2.0
Olfactory Epithelium, Metaplasia, Respiratory		1	1	1				1	1	1	6 1.0
Olfactory Epithelium, Regeneration									1		1 1.0
Respiratory Epithelium, Accumulation, Hyaline Droplet	1										1 1.0
Respiratory Epithelium, Hyperplasia		2	1	1	1	2	1	1	1	1	9 1.2
Respiratory Epithelium, Metaplasia, Squamous	2	2	2	2	2	2	2	2	2	2	10 2.0
Respiratory Epithelium, Necrosis				1				1	2		3 1.3
Respiratory Epithelium, Regeneration						1					1 1.0
Turbinate, Atrophy	1	1	1	1	1		1			1	7 1.0
<hr/>											
Trachea	+	+	+	+	+	+	+	+	+	+	10
Inflammation, Chronic Active	1	1		1		1					4 1.0
Metaplasia, Squamous	1	1					1			1	4 1.0
<hr/>											
SPECIAL SENSES SYSTEM											
<hr/>											
Eye	+	+	+	+	+	+	+	+	+	+	10
Cornea, Inflammation, Suppurative					2						1 2.0
Cornea, Necrosis				1							1 1.0
<hr/>											
URINARY SYSTEM											
<hr/>											
Kidney	+	+	+	+	+	+	+	+	+	+	10
Nephropathy	1	1	2	1	1	1	1	1		2	9 1.2

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 M .. Missing tissue
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 BLANK .. Not examined microscopically

1-4 .. Lesion qualified as:
 1) Minimal 3) Moderate
 2) Mild 4) Marked

Experiment Number: 20727 - 01
 Test Type: 90-DAY
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/HSD

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL
 ortho-Phthalaldehyde
 CAS Number: 643-79-8

Date Report Requested: 10/16/2015
 Time Report Requested: 12:31:33
 First Dose M/F: 01/19/09 / 01/20/09
 Lab: BNW

DAY ON TEST	0	0	0	0	0	0	0	0	0	0
	HARLAN SPRAGUE DAWLEY RATS MALE	0	0	0	0	0	0	0	0	0
1.75 ppm	9	9	9	9	9	9	9	9	9	9
ANIMAL ID	3	3	3	3	3	3	3	3	3	3
	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
	6	6	6	6	6	6	6	6	6	6
	0	0	0	0	0	0	0	0	0	1
	1	2	3	4	5	6	7	8	9	0
* TOTALS										

ALIMENTARY SYSTEM

Esophagus	+	+	+	+	+	+	+	M	+	+	9
Intestine Large, Cecum	+	+	+	+	+	+	+	+	+	+	10
Intestine Large, Colon	+	+	+	+	+	+	+	+	+	+	10
Intestine Large, Rectum	+	+	+	+	+	+	+	+	+	+	10
Intestine Small, Duodenum	+	+	+	+	+	+	+	+	+	+	10
Intestine Small, Ileum	+	+	+	+	+	+	+	+	+	+	10
Intestine Small, Jejunum	+	+	+	+	+	+	+	+	+	+	10
Liver	+	+	+	+	+	+	+	+	+	+	10
Pancreas	+	+	+	+	+	+	+	+	+	+	10
Salivary Glands	+	+	+	+	+	+	+	+	+	+	10
Stomach, Forestomach Hyperplasia, Squamous	+	+	+	+	+	+	+	+	+	+	10
								2			1 2.0
Stomach, Glandular	+	+	+	+	+	+	+	+	+	+	10

CARDIOVASCULAR SYSTEM

Blood Vessel	+	+	+	+	+	+	+	+	+	+	10
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1-4 .. Lesion qualified as:
 1) Minimal 3) Moderate
 2) Mild 4) Marked

Experiment Number: 20727 - 01
 Test Type: 90-DAY
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/HSD

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL
 ortho-Phthalaldehyde
 CAS Number: 643-79-8

Date Report Requested: 10/16/2015
 Time Report Requested: 12:31:33
 First Dose M/F: 01/19/09 / 01/20/09
 Lab: BNW

DAY ON TEST	0	0	0	0	0	0	0	0	0	0	ANIMAL ID		
	9	9	9	9	9	9	9	9	9	9			
HARLAN SPRAGUE DAWLEY RATS	3	3	3	3	3	3	3	3	3	3			
MALE													
1.75 ppm													
	0	0	0	0	0	0	0	0	0	0			
	0	0	0	0	0	0	0	0	0	0			
	6	6	6	6	6	6	6	6	6	6			
	0	0	0	0	0	0	0	0	0	1			
	1	2	3	4	5	6	7	8	9	0			* TOTALS

Heart	+	+	+	+	+	+	+	+	+	+		10	
Cardiomyopathy								1					1 1.0

ENDOCRINE SYSTEM

Adrenal Cortex	+	+	+	+	+	+	+	+	+	+		10	
Adrenal Medulla	+	+	+	+	+	+	+	+	+	+		10	
Islets, Pancreatic	+	+	+	+	+	+	+	+	+	+		10	
Parathyroid Gland	+	+	+	+	+	+	M	M	+	+		8	
Pituitary Gland	+	+	+	+	+	+	+	+	+	+		10	
Thyroid Gland	+	+	+	+	+	+	+	+	+	+		10	

GENERAL BODY SYSTEM

NONE

GENITAL SYSTEM

Epididymis	+	+	+	+	+	+	+	+	+	+		10	
Duct, Exfoliated Germ Cell		2											1 2.0
Preputial Gland	+	+	+	+	+	+	+	M	+	+		9	
Prostate	+	+	+	+	+	+	+	+	+	+		10	
Inflammation, Chronic Active	1												1 1.0

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Experiment Number: 20727 - 01
 Test Type: 90-DAY
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/HSD

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL
 ortho-Phthalaldehyde
 CAS Number: 643-79-8

Date Report Requested: 10/16/2015
 Time Report Requested: 12:31:33
 First Dose M/F: 01/19/09 / 01/20/09
 Lab: BNW

HARLAN SPRAGUE DAWLEY RATS MALE 1.75 ppm	DAY ON TEST										ANIMAL ID	
	0 9 3	0 9 3	0 9 3	0 9 3	0 9 3	0 9 3	0 9 3	0 9 3	0 9 3	0 9 3		
	0 0 6 0 1	0 0 6 0 2	0 0 6 0 3	0 0 6 0 4	0 0 6 0 5	0 0 6 0 6	0 0 6 0 7	0 0 6 0 8	0 0 6 0 9	0 0 6 0 0		
* TOTALS												

Seminal Vesicle	+	+	+	+	+	+	+	+	+	+	10
Testes	+	+	+	+	+	+	+	+	+	+	10
Germinal Epithelium, Degeneration, Multifocal		2									1 2.0

HEMATOPOIETIC SYSTEM

Bone Marrow	+	+	+	+	+	+	+	+	+	+	10
Lymph Node, Bronchial	+	M	M	+	+	M	+	+	+	M	6
Lymph Node, Mandibular	+	+	+	+	+	+	+	+	+	+	10
Lymph Node, Mediastinal	M	M	+	+	M	M	+	M	+	M	4
Lymph Node, Mesenteric	+	+	+	+	+	+	+	+	+	+	10
Spleen	+	+	+	+	+	+	+	+	+	+	10
Thymus	+	+	+	+	+	+	+	+	+	+	10

INTEGUMENTARY SYSTEM

Mammary Gland	M	M	+	+	M	+	+	+	+	+	7
Skin	+	+	+	+	+	+	+	+	+	+	10
Epithelium, Hair Follicle, Parakeratosis	1	1	1	1	1	1	1				7 1.0

MUSCULOSKELETAL SYSTEM

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1-4 .. Lesion qualified as:
 1) Minimal 3) Moderate
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Experiment Number: 20727 - 01
 Test Type: 90-DAY
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/HSD

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL
 ortho-Phthalaldehyde
 CAS Number: 643-79-8

Date Report Requested: 10/16/2015
 Time Report Requested: 12:31:33
 First Dose M/F: 01/19/09 / 01/20/09
 Lab: BNW

DAY ON TEST	0	0	0	0	0	0	0	0	0	0	ANIMAL ID					
	9	9	9	9	9	9	9	9	9	9						
HARLAN SPRAGUE DAWLEY RATS MALE	3	3	3	3	3	3	3	3	3	3	6	6	6			
1.75 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0			
	1	2	3	4	5	6	7	8	9	0	1	2	3			
												* TOTALS				
Bone	+	+	+	+	+	+	+	+	+	+				10		
NERVOUS SYSTEM																
Brain	+	+	+	+	+	+	+	+	+	+				10		
RESPIRATORY SYSTEM																
Larynx	+	+	+	+	+	+	+	+	+	+				10		
Inflammation, Chronic Active	2	2	2	2	1	1	1	2	1	2					10	1.6
Metaplasia, Squamous	2	2	2	1	2	2	2	2	2	2					10	1.9
Necrosis	1		1					1	1	1					5	1.0
Regeneration				2				1							2	1.5
Lung	+	+	+	+	+	+	+	+	+	+				10		
Alveolus, Infiltration Cellular, Histiocyte	1					2			1						3	1.3
Bronchus, Fibrosis								1							1	1.0
Bronchus, Hyperplasia				1		1									2	1.0
Bronchus, Inflammation, Chronic Active	1					2			1						3	1.3
Bronchus, Metaplasia, Squamous	1	1	1	1		1	1	1							7	1.0
Nose	+	+	+	+	+	+	+	+	+	+				10		
Inflammation, Suppurative	3	3	3	2	2	2	2	2	2	2					10	2.3
Glands, Olfactory Epithelium, Hyperplasia				1											1	1.0
Goblet Cell, Respiratory Epithelium, Hyperplasia					2				2						2	2.0
Olfactory Epithelium, Accumulation, Hyaline Droplet									2						1	2.0
Olfactory Epithelium, Atrophy	2	2	2	2	2	2	2	2	2	2					10	2.0
Olfactory Epithelium, Metaplasia, Respiratory	1			1	1	1			1	1					6	1.0

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1-4 .. Lesion qualified as:
 1) Minimal 3) Moderate
 2) Mild 4) Marked

Experiment Number: 20727 - 01
 Test Type: 90-DAY
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/HSD

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL
 ortho-Phthalaldehyde
 CAS Number: 643-79-8

Date Report Requested: 10/16/2015
 Time Report Requested: 12:31:33
 First Dose M/F: 01/19/09 / 01/20/09
 Lab: BNW

DAY ON TEST	0	0	0	0	0	0	0	0	0	0	ANIMAL ID				
	9	9	9	9	9	9	9	9	9	9					
HARLAN SPRAGUE DAWLEY RATS MALE 1.75 ppm	3	3	3	3	3	3	3	3	3	3	0	0	0		
	0	0	0	0	0	0	0	0	0	0	6	6	6		
	0	0	0	0	0	0	0	0	0	0	0	0	0		
	1	2	3	4	5	6	7	8	9	0					
												* TOTALS			
Olfactory Epithelium, Metaplasia, Squamous			1										1	1.0	
Olfactory Epithelium, Necrosis										2			1	2.0	
Respiratory Epithelium, Hyperplasia			1	1	1		1	1		1	1			7	1.0
Respiratory Epithelium, Metaplasia, Squamous	2	2	2	2	2	2	2	2	2	2			10	2.0	
Respiratory Epithelium, Necrosis	2		1	1						1	2			5	1.4
Turbinate, Atrophy	1	1	1	1	1	1	1	1	1	1			10	1.0	
<hr/>															
Trachea	+	+	+	+	+	+	+	+	+	+			10		
Fibrosis	1	1			1					1	1			5	1.0
Inflammation, Chronic Active	2	1	2	2	2	1				2	2			8	1.8
Metaplasia, Squamous	1	1	1	1	1	1	1	1	1	1			10	1.0	
Necrosis	1				2						1			3	1.3
Regeneration	3	4	3		3	3				2	2			7	2.9
<hr/>															
SPECIAL SENSES SYSTEM															
Eye	+	+	+	+	+	+	+	+	+	+			10		
Cornea, Inflammation, Suppurative										2			1	2.0	
Harderian Gland	+	+	+	+	+	+	+	+	+	+			10		
<hr/>															
URINARY SYSTEM															
Kidney	+	+	+	+	+	+	+	+	+	+			10		
Nephropathy	1		1	1		2	1	1		2			7	1.3	
Urinary Bladder	+	+	+	+	+	+	+	+	+	+			10		

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1-4 .. Lesion qualified as:
 1) Minimal 3) Moderate
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Experiment Number: 20727 - 01
 Test Type: 90-DAY
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/HSD

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL
 ortho-Phthalaldehyde
 CAS Number: 643-79-8

Date Report Requested: 10/16/2015
 Time Report Requested: 12:31:33
 First Dose M/F: 01/19/09 / 01/20/09
 Lab: BNW

DAY ON TEST	0	0	0	0	0	0	0	0	0	0
	HARLAN SPRAGUE DAWLEY RATS MALE	4	1	0	3	9	9	3	0	0
3.5 ppm	7	0	4	9	3	3	9	4	3	3
ANIMAL ID	0	0	0	0	0	0	0	0	0	0
	8	8	8	8	8	8	8	8	8	8
	0	0	0	0	0	0	0	0	0	1
	1	2	3	4	5	6	7	8	9	0
* TOTALS										

ALIMENTARY SYSTEM

Esophagus	+	+	+	+	+	+	+	+	+	+	10
Intestine Large, Cecum	+	+	+	+	+	+	+	+	+	+	10
Intestine Large, Colon	+	+	+	+	+	+	+	+	+	+	10
Intestine Large, Rectum	+	+	+	+	+	+	+	+	+	+	10
Intestine Small, Duodenum	+	+	+	+	+	+	+	+	+	+	10
Intestine Small, Ileum	+	+	+	+	+	+	+	+	+	+	10
Intestine Small, Jejunum	+	+	+	+	+	+	+	+	+	+	10
Liver Fibrosis	+	+	+	+	+	+	2	+	+	+	10 1 2.0
Pancreas	+	+	+	+	+	+	+	+	+	+	10
Salivary Glands	+	+	+	+	+	+	+	+	+	+	10
Stomach, Forestomach	+	+	+	+	+	+	+	+	+	+	10
Stomach, Glandular	+	+	+	+	+	+	+	+	+	+	10

CARDIOVASCULAR SYSTEM

Heart	+	+	+	+	+	+	+	+	+	+	10
-------	---	---	---	---	---	---	---	---	---	---	-----------

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Experiment Number: 20727 - 01
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 First Dose M/F: 01/19/09 / 01/20/09
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DAY ON TEST	0	0	0	0	0	0	0	0	0	0
	HARLAN SPRAGUE DAWLEY RATS MALE	0	0	0	0	0	0	0	0	0
3.5 ppm	4	1	0	3	9	9	3	0	0	9
ANIMAL ID	7	0	4	9	3	3	9	4	3	3
	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
	8	8	8	8	8	8	8	8	8	8
	0	0	0	0	0	0	0	0	0	1
	1	2	3	4	5	6	7	8	9	0
* TOTALS										

ENDOCRINE SYSTEM

Adrenal Cortex	+	+	+	+	+	+	+	+	+	+	10
Adrenal Medulla	+	+	+	+	+	+	+	+	+	+	10
Islets, Pancreatic	+	+	+	+	+	+	+	+	+	+	10
Parathyroid Gland	+	+	+	+	+	+	+	+	+	+	10
Pituitary Gland	+	+	+	+	+	+	+	+	+	+	10
Thyroid Gland	+	+	+	+	+	+	+	+	+	+	10

GENERAL BODY SYSTEM

NONE

GENITAL SYSTEM

Epididymis	+	+	+	+	+	+	+	+	+	+	10	
Hypospermia							3					1 3.0
Duct, Exfoliated Germ Cell	1	3			1	2		1				5 1.6
Epithelium, Apoptosis			1					2	1			3 1.3
Penis							+				1	
Inflammation, Suppurative							3					1 3.0
Preputial Gland	+	+	+	+	+	+	+	+	+	+	10	
Inflammation, Chronic Active						1						1 1.0

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 Test Type: 90-DAY
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/HSD

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 Lab: BNW

HARLAN SPRAGUE DAWLEY RATS MALE 3.5 ppm	DAY ON TEST										* TOTALS	
	0 4 7	0 1 0	0 0 4	0 3 9	0 9 3	0 9 3	0 3 9	0 0 4	0 0 3	0 0 3		
ANIMAL ID	0	0	0	0	0	0	0	0	0	0		
	0	0	0	0	0	0	0	0	0	0		
	8	8	8	8	8	8	8	8	8	8		
	1	2	3	4	5	6	7	8	9	0		
Prostate	+	+	+	+	+	+	+	+	+	+	10	
Seminal Vesicle Atrophy	+	+	+	+	+	+	+	+	+	+	10	1 1.0
Testes	+	+	+	+	+	+	+	+	+	+	10	
Exfoliated Germ Cell, Focal Immature		2						X	X		4	1 2.0
Elongated Spermatid, Degeneration	1			1		1	2				4	1.3
Germinal Epithelium, Apoptosis	1	1				1	2				4	1.3
Interstitial Cell, Atrophy	3	3	3	2			3	3	3		7	2.9
Seminiferous Tubule, Vacuolation	1					1	2				3	1.3
HEMATOPOIETIC SYSTEM												
Bone Marrow	+	+	+	+	+	+	+	+	+	+	10	
Lymph Node, Bronchial	+	+	+	+	+	M	+	+	M	M	7	
Lymph Node, Mandibular	+	+	+	+	+	+	+	+	+	+	10	
Lymph Node, Mediastinal	+	+	+	+	+	+	M	+	+	+	9	
Lymph Node, Mesenteric	+	+	+	+	+	+	+	+	+	+	10	
Spleen	+	+	+	+	+	+	+	+	+	+	10	
Atrophy, Lymphoid	1	1	2	2			2	1			6	1.5
Thymus	+	+	+	+	+	+	+	+	+	+	10	
Atrophy, Lymphoid	2		1	2	1	2	2	1	1		8	1.5

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Experiment Number: 20727 - 01
 Test Type: 90-DAY
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/HSD

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL
 ortho-Phthalaldehyde
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Date Report Requested: 10/16/2015
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 First Dose M/F: 01/19/09 / 01/20/09
 Lab: BNW

HARLAN SPRAGUE DAWLEY RATS MALE 3.5 ppm	DAY ON TEST	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	ANIMAL ID	4	1	0	3	9	9	3	0	0	9	7	0	0	3
		0	0	0	0	0	0	0	0	0	0	0	0	0	0
		8	8	8	8	8	8	8	8	8	8	8	8	8	8
		0	0	0	0	0	0	0	0	0	0	0	0	1	0
		1	2	3	4	5	6	7	8	9	0				
* TOTALS															

INTEGUMENTARY SYSTEM

Mammary Gland	M	+	+	+	+	M	M	M	+	+	6
Skin	+	+	+	+	+	+	+	+	+	+	10
Hyperplasia, Squamous				1							1 1.0
Inflammation, Suppurative	3										1 3.0
Adnexa, Degeneration		1	2				1	1			4 1.3
Epithelium, Hair Follicle, Parakeratosis	1							2	1		3 1.3

MUSCULOSKELETAL SYSTEM

Bone	+	+	+	+	+	+	+	+	+	+	10
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NERVOUS SYSTEM

Brain	+	+	+	+	+	+	+	+	+	+	10
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RESPIRATORY SYSTEM

Larynx	+	+	+	+	+	+	+	+	+	+	10
Inflammation, Chronic Active	2	3	3	2	3	2	2	3	3	2	10 2.5
Metaplasia, Squamous	3	1	1	3	3	3	3	3	2	3	10 2.5
Necrosis	1	3	3	1	2		2	2	2	1	9 1.9
Regeneration		2						2			2 2.0
Lung	+	+	+	+	+	+	+	+	+	+	10
Alveolus, Infiltration Cellular, Histiocyte	1	1	2	1	2	2	2	1		1	9 1.4
Alveolus, Inflammation, Suppurative		1	1					1			3 1.0
Bronchus, Fibrosis	1			2							2 1.5

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 + .. Tissue examined microscopically
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 BLANK .. Not examined microscopically

1-4 .. Lesion qualified as:
 1) Minimal 3) Moderate
 2) Mild 4) Marked

Experiment Number: 20727 - 01
 Test Type: 90-DAY
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/HSD

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL
 ortho-Phthalaldehyde
 CAS Number: 643-79-8

Date Report Requested: 10/16/2015
 Time Report Requested: 12:31:33
 First Dose M/F: 01/19/09 / 01/20/09
 Lab: BNW

DAY ON TEST	0	0	0	0	0	0	0	0	0	0	
	4	1	0	3	9	9	3	0	0	9	
HARLAN SPRAGUE DAWLEY RATS MALE	7	0	4	9	3	3	9	4	3	3	
3.5 ppm											
ANIMAL ID	0	0	0	0	0	0	0	0	0	0	
	0	0	0	0	0	0	0	0	0	0	
	8	8	8	8	8	8	8	8	8	8	
	0	0	0	0	0	0	0	0	0	1	
	1	2	3	4	5	6	7	8	9	0	
	* TOTALS										
Bronchus, Hyperplasia	2			2	2	1	2				5 1.8
Bronchus, Inflammation, Chronic Active	3	1	1	2	1	2	2	2		1	9 1.7
Bronchus, Metaplasia, Squamous	1			1	2	2	1			2	6 1.5
Bronchus, Necrosis	2	2					1	1	2		5 1.6
Bronchus, Regeneration							1		1	1	3 1.0
Bronchus, Goblet Cell, Hyperplasia	2										1 2.0
Perivascular, Inflammation, Chronic Active					3	2					2 2.5
Nose	+	+	+	+	+	+	+	+	+	+	10
Inflammation, Suppurative	3	3	2	3	3	3	3	2	2	3	10 2.7
Glands, Olfactory Epithelium, Hyperplasia		1				1					2 1.0
Olfactory Epithelium, Atrophy	2	2		2	2	2	2			2	7 2.0
Olfactory Epithelium, Metaplasia, Respiratory							2			2	2 2.0
Olfactory Epithelium, Metaplasia, Squamous					2						1 2.0
Olfactory Epithelium, Necrosis	2			2				2			3 2.0
Olfactory Epithelium, Regeneration	2			1				2		2	4 1.8
Respiratory Epithelium, Hyperplasia	1					1				1	3 1.0
Respiratory Epithelium, Metaplasia, Squamous	2	2	1	2	2	2	2	1	1	2	10 1.7
Respiratory Epithelium, Necrosis	3	2	2	3	2	2	2	2	3	2	10 2.3
Respiratory Epithelium, Regeneration		1						2	1		3 1.3
Trachea	+	+	+	+	+	+	+	+	+	+	10
Fibrosis	1				2		2				3 1.7
Inflammation, Chronic Active	2	2	3	2		1	1	3	2	1	9 1.9
Metaplasia, Squamous	2			1	2	3	2			2	6 2.0
Necrosis	1	3	3		1	1	1	3	1		8 1.8
Regeneration	3	2	1	3	3		1		3		7 2.3
Ulcer				1							1 1.0

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 1) Minimal 3) Moderate
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Experiment Number: 20727 - 01
 Test Type: 90-DAY
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/HSD

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL
 ortho-Phthalaldehyde
 CAS Number: 643-79-8

Date Report Requested: 10/16/2015
 Time Report Requested: 12:31:33
 First Dose M/F: 01/19/09 / 01/20/09
 Lab: BNW

HARLAN SPRAGUE DAWLEY RATS MALE 3.5 ppm	DAY ON TEST	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		0	0	0	0	0	0	0	0	0	0	0	0	0	0
		4	1	0	3	9	9	3	0	0	9				
		7	0	4	9	3	3	9	4	3	3				
	ANIMAL ID	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		0	0	0	0	0	0	0	0	0	0	0	0	0	0
		8	8	8	8	8	8	8	8	8	8	8	8	8	8
		0	0	0	0	0	0	0	0	0	0	0	1	0	0
		1	2	3	4	5	6	7	8	9	0				
* TOTALS															

SPECIAL SENSES SYSTEM

Eye	+	+	+	+	+	+	+	+	+	+	10
Anterior Chamber, Inflammation, Suppurative	1	1					1	1			4 1.0
Cornea, Inflammation, Suppurative	1	1		3			3	2			5 2.0
Cornea, Necrosis							2	1			2 1.5
Harderian Gland	+	+	+	+	+	+	+	+	+	+	10

URINARY SYSTEM

Kidney	+	+	+	+	+	+	+	+	+	+	10
Nephropathy				1							1 1.0
Urinary Bladder	+	+	+	+	+	+	+	+	+	+	10

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 + .. Tissue examined microscopically
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Experiment Number: 20727 - 01
 Test Type: 90-DAY
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/HSD

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL
 ortho-Phthalaldehyde
 CAS Number: 643-79-8

Date Report Requested: 10/16/2015
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 Lab: BNW

DAY ON TEST		0	0	0	0	0	0	0	0	0	0
HARLAN SPRAGUE DAWLEY RATS MALE		0	0	0	0	0	0	0	0	0	0
		0	0	0	0	0	0	1	0	0	0
	7.0 ppm	7	3	6	3	3	3	0	6	4	5
	ANIMAL ID		0	0	0	0	0	0	0	0	0
		1	1	1	1	1	1	1	1	1	
		0	0	0	0	0	0	0	0	0	
		0	0	0	0	0	0	0	0	1	
		1	2	3	4	5	6	7	8	9	
* TOTALS											

ALIMENTARY SYSTEM

Esophagus	+	+	+	+	+	+	+	+	+	+	10	
Intestine Large, Cecum	+	+	+	A	+	+	+	A	+	+	8	
Intestine Large, Colon	+	+	+	A	+	+	+	A	+	+	8	
Intestine Large, Rectum	+	+	+	+	+	+	+	+	+	+	10	
Intestine Small, Duodenum	+	+	+	+	+	+	+	+	+	+	10	
Intestine Small, Ileum Diverticulum	+	+	+	A	+	+	+	A	+	+	8	1 1.0
Intestine Small, Jejunum	+	+	+	A	A	+	+	A	+	+	7	
Liver	+	+	+	+	+	+	+	+	+	+	10	
Pancreas	+	+	+	+	+	+	+	+	+	+	10	
Salivary Glands	+	+	+	+	+	+	+	+	+	+	10	
Stomach, Forestomach Cyst, Squamous	+	+	+	+	+	+	+	+	+	+	10	1 2.0
Stomach, Glandular	+	+	+	+	+	+	+	+	+	+	10	

CARDIOVASCULAR SYSTEM

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Experiment Number: 20727 - 01
 Test Type: 90-DAY
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/HSD

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL
 ortho-Phthalaldehyde
 CAS Number: 643-79-8

Date Report Requested: 10/16/2015
 Time Report Requested: 12:31:33
 First Dose M/F: 01/19/09 / 01/20/09
 Lab: BNW

HARLAN SPRAGUE DAWLEY RATS MALE 7.0 ppm	DAY ON TEST										ANIMAL ID	
	0 7	0 3	0 6	0 3	0 3	0 3	0 0	0 1	0 6	0 4		
	0 1	0 1	0 1	0 1	0 1	0 1	0 1	0 1	0 1	0 1	0 1	
	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	
	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 0		
* TOTALS												

Heart	+	+	+	+	+	+	+	+	+	+	10
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ENDOCRINE SYSTEM

Adrenal Cortex	+	+	+	+	+	+	+	+	+	+	10
Adrenal Medulla	+	+	+	+	+	+	+	+	+	+	10
Islets, Pancreatic	+	+	+	+	+	+	+	+	+	+	10
Parathyroid Gland	+	+	+	+	+	+	M	+	+		9
Pituitary Gland	+	+	+	+	+	+	+	+	+	+	10
Thyroid Gland	+	+	+	+	+	+	+	+	+	+	10

GENERAL BODY SYSTEM

NONE

GENITAL SYSTEM

Epididymis	+	+	+	+	+	+	+	+	+	+	10		
Infiltration Cellular, Mononuclear Cell	1											1 1.0	
Duct, Exfoliated Germ Cell	3		2				3			2		4 2.5	
Epithelium, Apoptosis			1			1		1	1	2		5 1.2	
Preputial Gland	+	+	+	+	+	+	+	+	+	+	10		
Prostate	+	+	+	+	+	+	+	+	+	+	10		

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 Lab: BNW

HARLAN SPRAGUE DAWLEY RATS MALE 7.0 ppm	DAY ON TEST										ANIMAL ID	
	0	0	0	0	0	0	0	0	0	0		
	0	0	0	0	0	0	0	0	0	0	0	0
	7	3	6	3	3	3	0	6	4	5		
	0	0	0	0	0	0	0	0	0	0	0	0
	1	1	1	1	1	1	1	1	1	1	1	1
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	1	0	1
	1	2	3	4	5	6	7	8	9	0		
											* TOTALS	

Seminal Vesicle	+	+	+	+	+	+	+	+	+	+		10
Testes	+	+	+	+	+	+	+	+	+	+		10
Exfoliated Germ Cell, Focal	2						2					2 2.0
Immature	X	X	X	X	X	X	X	X	X	X		10
Germinal Epithelium, Apoptosis	1	1					1	1	1	1		6 1.0
Interstitial Cell, Atrophy	3	3	3	3	3	2	3	3	3	3		10 2.9
Round Spermatid, Degeneration			2					3				2 2.5

HEMATOPOIETIC SYSTEM

Bone Marrow	+	+	+	+	+	+	+	+	+	+		10
Lymph Node, Bronchial	+	+	+	M	M	M	M	+	+	+		6
Lymph Node, Mandibular	+	+	+	+	+	+	+	+	+	+		10
Lymph Node, Mediastinal	+	+	M	+	M	+	+	+	+	M		7
Lymph Node, Mesenteric	+	+	+	+	+	+	+	+	+	+		10
Spleen	+	+	+	+	+	+	+	+	+	+		10
Atrophy, Lymphoid	3	2	4	2	2	2	3	4	3	2		10 2.7
Thymus	+	+	+	+	+	+	+	+	+	+		10
Atrophy, Lymphoid	2		3			2	3	3	3	3		7 2.7

INTEGUMENTARY SYSTEM

Mammary Gland	M	M	+	M	M	M	M	M	+	M		2
---------------	---	---	---	---	---	---	---	---	---	---	--	----------

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 Test Type: 90-DAY
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/HSD

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL
 ortho-Phthalaldehyde
 CAS Number: 643-79-8

Date Report Requested: 10/16/2015
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 First Dose M/F: 01/19/09 / 01/20/09
 Lab: BNW

HARLAN SPRAGUE DAWLEY RATS MALE 7.0 ppm	DAY ON TEST											
	0	0	0	0	0	0	0	0	0	0		
	7	3	6	3	3	3	0	6	4	5		
	ANIMAL ID											
	0	0	0	0	0	0	0	0	0	0		
	1	1	1	1	1	1	1	1	1	1		
	0	0	0	0	0	0	0	0	0	0		
	0	0	0	0	0	0	0	0	0	1		
	1	2	3	4	5	6	7	8	9	0		
											* TOTALS	
Skin	+										10	
Hyperplasia, Squamous											1 1.0	
Adnexa, Degeneration	1	1	2	1	1	1	1	1	1	2	10 1.2	
Epithelium, Hair Follicle, Parakeratosis	1	1	2	2	2	2	1	2	2	2	10 1.7	
MUSCULOSKELETAL SYSTEM												
Bone	+										10	
Maxilla, Inflammation, Chronic Active											1 3.0	
NERVOUS SYSTEM												
Brain	+										10	
RESPIRATORY SYSTEM												
Larynx	+										10	
Inflammation, Chronic Active	2	3	3	3	3	4	3	3	3	3	10 3.0	
Metaplasia, Squamous	4	3	3	2	2	1	3	3	3	3	10 2.7	
Necrosis	1	3	3	3	2	3	3	3	3	2	10 2.6	
Regeneration	2		2			2	3		1	2	6 2.0	
Lung	+										10	
Alveolus, Infiltration Cellular, Histiocyte											1 1.0	
Alveolus, Inflammation, Suppurative	1	1				1	1	1	1	6 1.0		
Bronchus, Fibrosis											1 2.0	
Bronchus, Hyperplasia	1										1 1.0	
Bronchus, Inflammation, Chronic Active	3	1	3	1		3		2	3	3	8 2.4	
Bronchus, Metaplasia, Squamous	1										1 1.0	
Bronchus, Necrosis	4	1	3			3		2	3	3	7 2.7	

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Experiment Number: 20727 - 01
 Test Type: 90-DAY
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/HSD

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 ortho-Phthalaldehyde
 CAS Number: 643-79-8

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 First Dose M/F: 01/19/09 / 01/20/09
 Lab: BNW

DAY ON TEST	0	0	0	0	0	0	0	0	0	0												
	0	0	0	0	0	0	0	0	0	0												
HARLAN SPRAGUE DAWLEY RATS	0	0	0	0	0	0	1	0	0	0												
MALE	7	3	6	3	3	3	0	6	4	5												
7.0 ppm																						
ANIMAL ID	0	0	0	0	0	0	0	0	0	0												
	1	1	1	1	1	1	1	1	1	1												
	0	0	0	0	0	0	0	0	0	0												
	0	0	0	0	0	0	0	0	0	1												
	1	2	3	4	5	6	7	8	9	0												
* TOTALS																						
Bronchus, Regeneration											2	1	2.0									
Nose											+	+	+	+	+	+	+	+	+	+	10	
Inflammation, Suppurative	2	3	2	3	3	2	2	2	2	2		10	2.3									
Glands, Olfactory Epithelium, Hyperplasia											2	1	2	3	1.7							
Goblet Cell, Respiratory Epithelium, Hyperplasia											1			1	1.0							
Olfactory Epithelium, Atrophy	2		1					1	1	2	1		6	1.3								
Olfactory Epithelium, Metaplasia, Squamous												1		1	1.0							
Respiratory Epithelium, Metaplasia, Squamous	2	2	2		2			1	2	1	2		8	1.8								
Respiratory Epithelium, Necrosis	3	3	3	3	3	3	3	3	3	2		10	2.9									
Respiratory Epithelium, Regeneration	1	2		2		2				1	1		6	1.5								
Trachea											+	+	+	+	+	+	+	+	+	10		
Inflammation, Chronic Active	2	3	2	3	2	4	2	3	3	3		10	2.7									
Metaplasia, Squamous	2	2	1		2			2	2			6	1.8									
Necrosis	1	2	3	3		3		3	2	4		8	2.6									
Regeneration											2		2	3	1	2	3		6	2.2		
Ulcer														2		3		2	2.5			
SPECIAL SENSES SYSTEM																						
Eye											+	+	+	+	+	+	+	+	+	10		
Anterior Chamber, Inflammation, Suppurative	1						1	1	1	1		5	1.0									
Cornea, Hyperplasia	2											1		2	1.5							
Cornea, Inflammation, Suppurative	2		2											3	2	3	2		6	2.3		
Cornea, Necrosis											2		3	2	3		4	2.5				
Harderian Gland											+	+	+	+	+	+	+	+	+	10		

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 Test Type: 90-DAY
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 ortho-Phthalaldehyde
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 First Dose M/F: 01/19/09 / 01/20/09
 Lab: BNW

HARLAN SPRAGUE DAWLEY RATS MALE 7.0 ppm	DAY ON TEST	0	0	0	0	0	0	0	0	0		
		0	0	0	0	0	0	0	0	0		
		0	0	0	0	0	0	1	0	0		
		7	3	6	3	3	3	0	6	4	5	
	ANIMAL ID	0	0	0	0	0	0	0	0	0		
		1	1	1	1	1	1	1	1	1		
		0	0	0	0	0	0	0	0	0		
		0	0	0	0	0	0	0	0	1		
		1	2	3	4	5	6	7	8	9	0	
												* TOTALS

URINARY SYSTEM

Kidney	+	+	+	+	+	+	+	+	+	+	10
Nephropathy		1							1		2 1.0
Urinary Bladder	+	+	+	+	+	+	+	+	+	+	10

*** END OF MALE DATA ***

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 + .. Tissue examined microscopically
 X .. Lesion present
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 M .. Missing tissue
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 Lab: BNW

DAY ON TEST	0	0	0	0	0	0	0	0	0	0
	HARLAN SPRAGUE DAWLEY RATS FEMALE CONTROL	93	93	93	93	93	93	93	93	93
ANIMAL ID	0010	0011	0012	0013	0014	0015	0016	0017	0018	0019
* TOTALS										

ALIMENTARY SYSTEM

Esophagus	+	+	+	+	+	+	+	+	+	+	10
Intestine Large, Cecum	+	+	+	+	+	+	+	+	+	+	10
Intestine Large, Colon	+	+	+	+	+	+	+	+	+	+	10
Intestine Large, Rectum	+	+	+	+	+	+	+	+	+	+	10
Intestine Small, Duodenum	+	+	+	+	+	+	+	+	+	+	10
Intestine Small, Ileum	+	+	+	+	+	+	+	+	+	+	10
Intestine Small, Jejunum	+	+	+	+	+	+	+	+	+	+	10
Liver	+	+	+	+	+	+	+	+	+	+	10
Pancreas	+	+	+	+	+	+	+	+	+	+	10
Salivary Glands	+	+	+	+	+	+	+	+	+	+	10
Stomach, Forestomach Cyst, Squamous	+	+	+	+	+	2	+	+	+	+	10 1 2.0
Stomach, Glandular	+	+	+	+	+	+	+	+	+	+	10

CARDIOVASCULAR SYSTEM

Blood Vessel	+	+	+	+	+	+	+	+	+	+	10
--------------	---	---	---	---	---	---	---	---	---	---	-----------

* .. 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

Experiment Number: 20727 - 01
 Test Type: 90-DAY
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/HSD

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL
 ortho-Phthalaldehyde
 CAS Number: 643-79-8

Date Report Requested: 10/16/2015
 Time Report Requested: 12:31:33
 First Dose M/F: 01/19/09 / 01/20/09
 Lab: BNW

HARLAN SPRAGUE DAWLEY RATS FEMALE CONTROL	DAY ON TEST										* TOTALS
	0 9 3	0 9 3	0 9 3	0 9 3	0 9 3	0 9 3	0 9 3	0 9 3	0 9 3	0 9 3	
ANIMAL ID	0	0	0	0	0	0	0	0	0	0	
	0	0	0	0	0	0	0	0	0	0	
	1	1	1	1	1	1	1	1	1	1	
	0	0	0	0	0	0	0	0	0	1	
Heart	+	+	+	+	+	+	+	+	+	+	10
ENDOCRINE SYSTEM											
Adrenal Cortex	+	+	+	+	+	+	+	+	+	+	10
Adrenal Medulla	+	+	+	+	+	+	+	+	+	+	10
Islets, Pancreatic	+	+	+	+	+	+	+	+	+	+	10
Parathyroid Gland	+	+	+	M	+	+	M	+	+	+	8
Pituitary Gland	+	+	+	+	+	+	+	+	+	+	10
Thyroid Gland	+	+	+	+	+	+	+	+	+	+	10
GENERAL BODY SYSTEM											
NONE											
GENITAL SYSTEM											
Clitoral Gland	+	+	+	+	+	+	+	+	+	+	10
Ovary	+	+	+	+	+	+	+	+	+	+	10
Uterus	+	+	+	+	+	+	+	+	+	+	10
HEMATOPOIETIC SYSTEM											

* .. 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

Experiment Number: 20727 - 01
 Test Type: 90-DAY
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/HSD

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL
 ortho-Phthalaldehyde
 CAS Number: 643-79-8

Date Report Requested: 10/16/2015
 Time Report Requested: 12:31:33
 First Dose M/F: 01/19/09 / 01/20/09
 Lab: BNW

HARLAN SPRAGUE DAWLEY RATS FEMALE CONTROL	DAY ON TEST										* TOTALS
	0 9 3	0 9 3	0 9 3	0 9 3	0 9 3	0 9 3	0 9 3	0 9 3	0 9 3	0 9 3	
ANIMAL ID	0	0	0	0	0	0	0	0	0	0	
	0	0	0	0	0	0	0	0	0	0	
	1	1	1	1	1	1	1	1	1	1	
	0	0	0	0	0	0	0	0	0	0	
	1	2	3	4	5	6	7	8	9	0	
Bone Marrow	+	+	+	+	+	+	+	+	+	+	10
Lymph Node, Bronchial	+	+	+	M	+	+	+	+	M	+	8
Lymph Node, Mandibular	+	+	+	+	+	+	M	+	+	+	9
Lymph Node, Mediastinal	+	+	+	+	+	M	M	+	+	+	8
Lymph Node, Mesenteric	+	+	+	+	+	+	+	+	+	+	10
Spleen	+	+	+	+	+	+	+	+	+	+	10
Thymus	+	+	+	+	+	+	+	+	+	+	10
INTEGUMENTARY SYSTEM											
Mammary Gland	+	+	+	+	+	+	+	+	+	+	10
Skin	+	+	+	+	+	+	+	+	+	+	10
MUSCULOSKELETAL SYSTEM											
Bone	+	+	+	+	+	+	+	+	+	+	10
NERVOUS SYSTEM											
Brain	+	+	+	+	+	+	+	+	+	+	10
RESPIRATORY SYSTEM											

* .. 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

Experiment Number: 20727 - 01
 Test Type: 90-DAY
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/HSD

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL
 ortho-Phthalaldehyde
 CAS Number: 643-79-8

Date Report Requested: 10/16/2015
 Time Report Requested: 12:31:33
 First Dose M/F: 01/19/09 / 01/20/09
 Lab: BNW

HARLAN SPRAGUE DAWLEY RATS FEMALE CONTROL	DAY ON TEST										ANIMAL ID			
	0 9 3	0 9 3	0 9 3	0 9 3	0 9 3	0 9 3	0 9 3	0 9 3	0 9 3	0 9 3				
	0	0	0	0	0	0	0	0	0	0	0			
	0	0	0	0	0	0	0	0	0	0	0			
	1	1	1	1	1	1	1	1	1	1	1			
	0	0	0	0	0	0	0	0	0	0	0			
	1	2	3	4	5	6	7	8	9	0				
												* TOTALS		
Larynx	+	+	+	+	+	+	+	+	+	+				10
Lung	+	+	+	+	+	+	+	+	+	+				10
Nose	+	+	+	+	+	+	+	+	+	+				10
Olfactory Epithelium, Accumulation, Hyaline Droplet		1	1	1	1	1	1	3	1	1				9 1.2
Trachea	+	+	+	+	+	+	+	+	+	+				10
SPECIAL SENSES SYSTEM														
Eye	+	+	+	+	+	+	+	+	+	+				10
Harderian Gland	+	+	+	+	+	+	+	+	+	+				10
URINARY SYSTEM														
Kidney	+	+	+	+	+	+	+	+	+	+				10
Nephropathy	1		1			1	1		1	1				6 1.0
Urinary Bladder	+	+	+	+	+	+	+	+	+	+				10

* .. 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

Experiment Number: 20727 - 01
 Test Type: 90-DAY
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/HSD

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL
 ortho-Phthalaldehyde
 CAS Number: 643-79-8

Date Report Requested: 10/16/2015
 Time Report Requested: 12:31:33
 First Dose M/F: 01/19/09 / 01/20/09
 Lab: BNW

DAY ON TEST	0	0	0	0	0	0	0	0	0	0	HARLAN SPRAGUE DAWLEY RATS FEMALE 0.44 ppm	ANIMAL ID	0	0	0	0	0	0	0	0	0	
	9	9	9	9	9	9	9	9	9	9			0	0	0	0	0	0	0	0	0	
	3	3	3	3	3	3	3	3	3	3			3	3	3	3	3	3	3	3		
													0	0	0	0	0	0	0	0		
													3	3	3	3	3	3	3	3		
													0	0	0	0	0	0	0	1		
													1	2	3	4	5	6	7	8	9	0
											* TOTALS											

ALIMENTARY SYSTEM

Stomach, Glandular + + + + + + + + +

9

CARDIOVASCULAR SYSTEM

NONE

ENDOCRINE SYSTEM

NONE

GENERAL BODY SYSTEM

NONE

GENITAL SYSTEM

NONE

HEMATOPOIETIC SYSTEM

Spleen + + + + + + + + +

10

Thymus + + + + + + + + +

10

INTEGUMENTARY SYSTEM

Skin + + + + + + + + +

10

Adnexa, Degeneration 1

1 1.0

Epithelium, Hair Follicle, Parakeratosis 1

1 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

Experiment Number: 20727 - 01
 Test Type: 90-DAY
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/HSD

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL
 ortho-Phthalaldehyde
 CAS Number: 643-79-8

Date Report Requested: 10/16/2015
 Time Report Requested: 12:31:33
 First Dose M/F: 01/19/09 / 01/20/09
 Lab: BNW

DAY ON TEST	0	0	0	0	0	0	0	0	0	0
	HARLAN SPRAGUE DAWLEY RATS FEMALE	9	9	9	9	9	9	9	9	9
0.44 ppm	3	3	3	3	3	3	3	3	3	3
ANIMAL ID	0	0	0	0	0	0	0	0	0	0
	3	3	3	3	3	3	3	3	3	3
	0	0	0	0	0	0	0	0	0	1
	1	2	3	4	5	6	7	8	9	0
* TOTALS										

MUSCULOSKELETAL SYSTEM

NONE

NERVOUS SYSTEM

NONE

RESPIRATORY SYSTEM

Larynx	+	+	+	+	+	+	+	+	+	+	10		
Inflammation, Chronic Active										1		1	1.0
Metaplasia, Squamous										1		1	1.0
Lung	+	+	+	+	+	+	+	+	+	+	10		
Alveolus, Infiltration Cellular, Histiocyte								1	1			2	1.0
Nose	+	+	+	+	+	+	+	+	+	+	10		
Inflammation, Suppurative	1	1	1	1	1		1	1	1	2		9	1.1
Glands, Olfactory Epithelium, Hyperplasia						1			1			2	1.0
Olfactory Epithelium, Accumulation, Hyaline Droplet	3	2	3	3	3	3	2	3	2	2		10	2.6
Olfactory Epithelium, Atrophy	2	2	2	2	1		2	2	2	1		9	1.8
Olfactory Epithelium, Metaplasia, Respiratory			1									1	1.0
Respiratory Epithelium, Accumulation, Hyaline Droplet		1			1	2	1					4	1.3
Respiratory Epithelium, Hyperplasia		1	1	1	1	1	1	1	1	1		9	1.0
Respiratory Epithelium, Metaplasia, Squamous	2	2	2	2	2	1	2	2	2	2		10	1.9
Respiratory Epithelium, Necrosis	1	1										2	1.0
Turbinate, Atrophy	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

Experiment Number: 20727 - 01
 Test Type: 90-DAY
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/HSD

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL
 ortho-Phthalaldehyde
 CAS Number: 643-79-8

Date Report Requested: 10/16/2015
 Time Report Requested: 12:31:33
 First Dose M/F: 01/19/09 / 01/20/09
 Lab: BNW

		0	0	0	0	0	0	0	0	0	
DAY ON TEST		0	0	0	0	0	0	0	0	0	
HARLAN SPRAGUE DAWLEY RATS		9	9	9	9	9	9	9	9	9	
FEMALE		3	3	3	3	3	3	3	3	3	
0.44 ppm											
ANIMAL ID		0	0	0	0	0	0	0	0	0	
		0	0	0	0	0	0	0	0	0	
		3	3	3	3	3	3	3	3	3	
		0	0	0	0	0	0	0	0	1	
		1	2	3	4	5	6	7	8	9	0
* TOTALS											
Trachea		+	+	+	+	+	+	+	+	+	10
SPECIAL SENSES SYSTEM											
Eye		+	+	+	+	+	+	+	+	+	10
URINARY SYSTEM											
Kidney		+	+	+	+	+	+	+	+	+	10
Nephropathy						1	1		1	1	2
5 1.2											

* .. 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
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 BLANK .. Not examined microscopically

1-4 .. Lesion qualified as:
 1) Minimal 3) Moderate
 2) Mild 4) Marked

Experiment Number: 20727 - 01
 Test Type: 90-DAY
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/HSD

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL
 ortho-Phthalaldehyde
 CAS Number: 643-79-8

Date Report Requested: 10/16/2015
 Time Report Requested: 12:31:33
 First Dose M/F: 01/19/09 / 01/20/09
 Lab: BNW

DAY ON TEST HARLAN SPRAGUE DAWLEY RATS FEMALE 0.88 ppm	0	0	0	0	0	0	0	0	0	0	
	0	0	0	0	0	0	0	0	0	0	
ANIMAL ID	9	9	9	9	9	9	9	9	9	9	
	3	3	3	3	3	3	3	3	3	3	
	0	0	0	0	0	0	0	0	0	0	
	0	0	0	0	0	0	0	0	0	0	
	5	5	5	5	5	5	5	5	5	5	
	0	0	0	0	0	0	0	0	0	1	
	1	2	3	4	5	6	7	8	9	0	
	* TOTALS										

ALIMENTARY SYSTEM

Mesentery											1
Fat, Degeneration		+									1 1.0
Stomach, Glandular	+		+	+	+	+	+	+	+	+	9

CARDIOVASCULAR SYSTEM

NONE

ENDOCRINE SYSTEM

NONE

GENERAL BODY SYSTEM

NONE

GENITAL SYSTEM

NONE

HEMATOPOIETIC SYSTEM

Spleen	+	+	+	+	+	+	+	+	+	+	10
Thymus	+	+	+	+	+	+	+	+	+	+	10

INTEGUMENTARY SYSTEM

* .. 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

Experiment Number: 20727 - 01
 Test Type: 90-DAY
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/HSD

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL
 ortho-Phthalaldehyde
 CAS Number: 643-79-8

Date Report Requested: 10/16/2015
 Time Report Requested: 12:31:33
 First Dose M/F: 01/19/09 / 01/20/09
 Lab: BNW

DAY ON TEST	0	0	0	0	0	0	0	0	0	0
	HARLAN SPRAGUE DAWLEY RATS FEMALE	9	9	9	9	9	9	9	9	9
0.88 ppm	3	3	3	3	3	3	3	3	3	3
ANIMAL ID	0	0	0	0	0	0	0	0	0	0
	5	5	5	5	5	5	5	5	5	5
	0	0	0	0	0	0	0	0	0	1
	1	2	3	4	5	6	7	8	9	0
* TOTALS										

Skin	+	+	+	+	+	+	+	+	+	+	10
Epithelium, Hair Follicle, Parakeratosis								1			1 1.0

MUSCULOSKELETAL SYSTEM

NONE

NERVOUS SYSTEM

NONE

RESPIRATORY SYSTEM

Larynx	+	+	+	+	+	+	+	+	+	+	10
Inflammation, Chronic Active									2		1 2.0
Metaplasia, Squamous	1	1						1	1		4 1.0
Regeneration									2		1 2.0
Ulcer									1		1 1.0
Lung	+	+	+	+	+	+	+	+	+	+	10
Alveolus, Infiltration Cellular, Histiocyte								1			1 1.0
Interstitial, Fibrosis								1			1 1.0
Perivascular, Inflammation, Chronic Active					1						1 1.0
Nose	+	+	+	+	+	+	+	+	+	+	10
Inflammation, Suppurative	2	2	2	1	1	1	1	1	2	2	10 1.5
Olfactory Epithelium, Accumulation, Hyaline Droplet	3	3	3	2	3	2		3	1		8 2.5
Olfactory Epithelium, Atrophy	2	2	2	2	2	2	2	2	2		10 2.0
Olfactory Epithelium, Metaplasia, Respiratory								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
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1-4 .. Lesion qualified as:
 1) Minimal 3) Moderate
 2) Mild 4) Marked

Experiment Number: 20727 - 01
 Test Type: 90-DAY
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/HSD

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL
 ortho-Phthalaldehyde
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 Time Report Requested: 12:31:33
 First Dose M/F: 01/19/09 / 01/20/09
 Lab: BNW

DAY ON TEST	0	0	0	0	0	0	0	0	0	0	ANIMAL ID
	93	93	93	93	93	93	93	93	93	93	
HARLAN SPRAGUE DAWLEY RATS FEMALE	0	0	0	0	0	0	0	0	0	0	0000000000
0.88 ppm	0	0	0	0	0	0	0	0	0	0	5555555555
	0	0	0	0	0	0	0	0	0	0	1234567890

* TOTALS

Olfactory Epithelium, Necrosis					1						1	1.0
Respiratory Epithelium, Hyperplasia	2		1	1		1	1	1	1		7	1.1
Respiratory Epithelium, Metaplasia, Squamous	2	2	2	2	2	2	2	2	2	2	10	2.0
Respiratory Epithelium, Necrosis		2	1			1		1	1	1	6	1.2
Respiratory Epithelium, Regeneration				2		1					2	1.5
Turbinate, Atrophy			1					1	1	1	4	1.0
Trachea	+	+	+	+	+	+	+	+	+	+	10	
Inflammation, Chronic Active	1	1	1								3	1.0
Metaplasia, Squamous	1							1	1		3	1.0
Regeneration									2		1	2.0

SPECIAL SENSES SYSTEM

Eye	+	+	+	+	+	+	+	+	+	+	10	
Cornea, Inflammation, Suppurative				1							1	1.0

URINARY SYSTEM

Kidney	+		+	+	+	+	+	+	+	+	9	
Nephropathy	2			1	1					1	4	1.3

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 + .. Tissue examined microscopically
 X .. Lesion present
 I .. Insufficient tissue
 M .. Missing tissue
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1-4 .. Lesion qualified as:
 1) Minimal 3) Moderate
 2) Mild 4) Marked

Experiment Number: 20727 - 01
 Test Type: 90-DAY
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/HSD

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL
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Date Report Requested: 10/16/2015
 Time Report Requested: 12:31:33
 First Dose M/F: 01/19/09 / 01/20/09
 Lab: BNW

DAY ON TEST	0	0	0	0	0	0	0	0	0	0	ANIMAL ID	0	0	0	0	0	0	0	0	0	0
	9	9	9	9	9	9	9	9	9	9											
HARLAN SPRAGUE DAWLEY RATS	3	3	3	3	3	3	3	3	3	3											
FEMALE																					
1.75 ppm																					
	0	0	0	0	0	0	0	0	0	0	7	7	7	7	7	7	7	7	7	7	7
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	1	2	3	4	5	6	7	8	9	0											
																			* TOTALS		

ALIMENTARY SYSTEM

Stomach, Glandular + + + + + + + + + + 10

CARDIOVASCULAR SYSTEM

NONE

ENDOCRINE SYSTEM

NONE

GENERAL BODY SYSTEM

NONE

GENITAL SYSTEM

Uterus + 1
 Decidual Reaction 4 1 4.0

HEMATOPOIETIC SYSTEM

Spleen + + + + + + + + + 10
 Atrophy, Lymphoid 1 1 1.0

Thymus + + + + + + + + + 10

INTEGUMENTARY SYSTEM

Skin + + + + + + + + + 10

* .. Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade
 + .. Tissue examined microscopically M .. Missing tissue
 X .. Lesion present A .. Autolysis precludes evaluation
 I .. Insufficient tissue BLANK .. Not examined microscopically

1-4 .. Lesion qualified as:
 1) Minimal 3) Moderate
 2) Mild 4) Marked

Experiment Number: 20727 - 01
 Test Type: 90-DAY
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/HSD

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL
 ortho-Phthalaldehyde
 CAS Number: 643-79-8

Date Report Requested: 10/16/2015
 Time Report Requested: 12:31:33
 First Dose M/F: 01/19/09 / 01/20/09
 Lab: BNW

DAY ON TEST	0	0	0	0	0	0	0	0	0	0	
	HARLAN SPRAGUE DAWLEY RATS FEMALE	9	9	9	9	9	9	9	9	9	9
1.75 ppm	3	3	3	3	3	3	3	3	3	3	
ANIMAL ID	0	0	0	0	0	0	0	0	0	0	
	7	7	7	7	7	7	7	7	7	7	
	0	0	0	0	0	0	0	0	0	1	
	1	2	3	4	5	6	7	8	9	0	
* TOTALS											
Epithelium, Hair Follicle, Parakeratosis	1			1			1			3	1.0

MUSCULOSKELETAL SYSTEM

NONE

NERVOUS SYSTEM

NONE

RESPIRATORY SYSTEM

Larynx	+	+	+	+	+	+	+	+	+	+	10	
Inflammation, Chronic Active	2	1	1		1	1	2	2	2	1		9 1.4
Metaplasia, Squamous	2	2	2	1	2	2	2	2	2	2		10 1.9
Necrosis								2				1 2.0
Regeneration	2							2	2			3 2.0
Ulcer							1					1 1.0
Lung	+	+	+	+	+	+	+	+	+	+	10	
Alveolus, Infiltration Cellular, Histiocyte	1					1	2					3 1.3
Bronchus, Fibrosis						1						1 1.0
Bronchus, Hyperplasia							2					1 2.0
Bronchus, Inflammation, Chronic Active						1	2					2 1.5
Bronchus, Metaplasia, Squamous						1	1					2 1.0
Perivascular, Inflammation, Chronic Active							2					1 2.0
Nose	+	+	+	+	+	+	+	+	+	+	10	
Inflammation, Suppurative	3	2	2	2	2	3	3	2	2	3		10 2.4
Synechia								1				1 1.0
Glands, Olfactory Epithelium, Hyperplasia						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

Experiment Number: 20727 - 01
 Test Type: 90-DAY
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/HSD

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL
 ortho-Phthalaldehyde
 CAS Number: 643-79-8

Date Report Requested: 10/16/2015
 Time Report Requested: 12:31:33
 First Dose M/F: 01/19/09 / 01/20/09
 Lab: BNW

DAY ON TEST	0	0	0	0	0	0	0	0	0	0	
	0	0	0	0	0	0	0	0	0	0	
HARLAN SPRAGUE DAWLEY RATS	9	9	9	9	9	9	9	9	9	9	
FEMALE	3	3	3	3	3	3	3	3	3	3	
1.75 ppm											
ANIMAL ID	0	0	0	0	0	0	0	0	0	0	
	0	0	0	0	0	0	0	0	0	0	
	7	7	7	7	7	7	7	7	7	7	
	0	0	0	0	0	0	0	0	0	1	
	1	2	3	4	5	6	7	8	9	0	
	* TOTALS										
Goblet Cell, Respiratory Epithelium, Hyperplasia						1					1 1.0
Olfactory Epithelium, Accumulation, Hyaline Droplet					1	1	2		2		4 1.5
Olfactory Epithelium, Atrophy	2	2	2	2	2	2	2	2	2	2	10 2.0
Olfactory Epithelium, Metaplasia, Respiratory		1	1			2		1		1	5 1.2
Olfactory Epithelium, Metaplasia, Squamous				1							1 1.0
Respiratory Epithelium, Hyperplasia		1				1	2			1	4 1.3
Respiratory Epithelium, Metaplasia, Squamous	2	2	2	1	2	2	2	2	2	2	10 1.9
Respiratory Epithelium, Necrosis	1	1		1	1	2	1	1	1	1	9 1.1
Respiratory Epithelium, Ulcer	1										1 1.0
Turbinate, Atrophy	1	1	1	1	1	1	1	1	1	1	10 1.0
Trachea	+	+	+	+	+	+	+	+	+	+	10
Fibrosis						1	1				2 1.0
Inflammation, Chronic Active	1	1			1	1	2				5 1.2
Metaplasia, Squamous	1	1	1	1	1	1	1	1	1	1	10 1.0
Necrosis						1	1	1			3 1.0
Regeneration	3	2			2	3	3	2		3	7 2.6
SPECIAL SENSES SYSTEM											
Eye	+	+	+	+	+	+	+	+	+	+	10
URINARY SYSTEM											
Kidney	+	+	+	+	+	+	+	+	+	+	10
Nephropathy		1	1			1			1	1	5 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

Experiment Number: 20727 - 01
 Test Type: 90-DAY
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/HSD

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL
 ortho-Phthalaldehyde
 CAS Number: 643-79-8

Date Report Requested: 10/16/2015
 Time Report Requested: 12:31:33
 First Dose M/F: 01/19/09 / 01/20/09
 Lab: BNW

DAY ON TEST	0	0	0	0	0	0	0	0	0	0
	HARLAN SPRAGUE DAWLEY RATS FEMALE	0	0	0	0	0	0	0	0	0
3.5 ppm	4	9	1	9	9	9	9	9	9	9
ANIMAL ID	6	3	6	3	3	3	3	3	3	3
	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
	9	9	9	9	9	9	9	9	9	9
	0	0	0	0	0	0	0	0	0	1
	1	2	3	4	5	6	7	8	9	0
* TOTALS										

ALIMENTARY SYSTEM

Esophagus	+	+	+	+	+	+	+	+	+	+	10
Intestine Large, Cecum	+	+	+	+	+	+	+	+	+	+	10
Intestine Large, Colon	+	+	+	+	+	+	+	+	+	+	10
Intestine Large, Rectum	+	+	+	+	+	+	+	+	+	+	10
Intestine Small, Duodenum	+	+	+	+	+	+	+	+	+	+	10
Intestine Small, Ileum	+	+	+	+	+	+	+	+	+	+	10
Intestine Small, Jejunum	+	+	+	+	+	+	+	+	+	+	10
Liver	+	+	+	+	+	+	+	+	+	+	10
Pancreas	+	+	+	+	+	+	+	+	+	+	10
Salivary Glands	+	+	+	+	+	+	+	+	+	+	10
Stomach, Forestomach	+	+	+	+	+	+	+	+	+	+	10
Stomach, Glandular	+	+	+	+	+	+	+	+	+	+	10

CARDIOVASCULAR SYSTEM

Blood Vessel	+	+	+	+	+	+	+	+	+	+	10
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 + .. Tissue examined microscopically
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Experiment Number: 20727 - 01
 Test Type: 90-DAY
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/HSD

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL
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 CAS Number: 643-79-8

Date Report Requested: 10/16/2015
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 First Dose M/F: 01/19/09 / 01/20/09
 Lab: BNW

DAY ON TEST	0	0	0	0	0	0	0	0	0	0	ANIMAL ID		
	4	9	1	9	9	9	9	9	9	9			
HARLAN SPRAGUE DAWLEY RATS	6	3	6	3	3	3	3	3	3	3			
FEMALE													
3.5 ppm													
	0	0	0	0	0	0	0	0	0	0			
	0	0	0	0	0	0	0	0	0	0			
	9	9	9	9	9	9	9	9	9	9			
	0	0	0	0	0	0	0	0	0	1			
	1	2	3	4	5	6	7	8	9	0			* TOTALS
Heart	+	+	+	+	+	+	+	+	+	+			10
ENDOCRINE SYSTEM													
Adrenal Cortex	+	+	+	+	+	+	+	+	+	+			10
Adrenal Medulla	+	+	+	+	+	+	+	+	+	+			10
Islets, Pancreatic	+	+	+	+	+	+	+	+	+	+			10
Parathyroid Gland	+	+	+	M	+	+	+	+	+	+			9
Pituitary Gland	+	+	+	+	+	+	+	+	+	+			10
Thyroid Gland	+	+	+	+	+	+	+	+	+	+			10
GENERAL BODY SYSTEM													
NONE													
GENITAL SYSTEM													
Clitoral Gland	+	+	+	+	+	+	+	+	+	+			10
Ovary	+	+	+	+	+	+	+	+	+	+			10
Uterus	+	+	+	+	+	+	+	+	+	+			10
HEMATOPOIETIC SYSTEM													

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 1) Minimal 3) Moderate
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Experiment Number: 20727 - 01
 Test Type: 90-DAY
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/HSD

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL
 ortho-Phthalaldehyde
 CAS Number: 643-79-8

Date Report Requested: 10/16/2015
 Time Report Requested: 12:31:33
 First Dose M/F: 01/19/09 / 01/20/09
 Lab: BNW

HARLAN SPRAGUE DAWLEY RATS FEMALE 3.5 ppm	DAY ON TEST										* TOTALS
	0	0	0	0	0	0	0	0	0	0	
ANIMAL ID	0	0	0	0	0	0	0	0	0	0	
	4	9	1	9	9	9	9	9	9	9	
	6	3	6	3	3	3	3	3	3	3	
Bone Marrow	+	+	+	+	+	+	+	+	+	+	10
Lymph Node, Bronchial	+	+	+	M	+	M	+	M	+	+	7
Lymph Node, Mandibular	+	+	+	+	+	+	+	+	+	+	10
Lymph Node, Mediastinal	+	+	+	+	M	M	+	M	+	M	6
Lymph Node, Mesenteric	+	+	+	+	+	+	+	+	+	+	10
Spleen	+	+	+	+	+	+	+	+	+	+	10
Atrophy, Lymphoid	1	1	2	1							4 1.3
Thymus	+	+	M	+	+	+	+	+	+	+	9
Atrophy, Lymphoid	1			1	1		1	1	1		6 1.0
INTEGUMENTARY SYSTEM											
Mammary Gland	+	+	+	+	+	+	+	+	+	+	10
Skin	+	+	+	+	+	+	+	+	+	+	10
Adnexa, Degeneration				1							1 1.0
Epithelium, Hair Follicle, Parakeratosis				1		1		1			3 1.0
Hair Follicle, Atrophy						1					1 1.0
MUSCULOSKELETAL SYSTEM											
Bone	+	+	+	+	+	+	+	+	+	+	10
NERVOUS SYSTEM											

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 1) Minimal 3) Moderate
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Experiment Number: 20727 - 01
 Test Type: 90-DAY
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/HSD

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL
 ortho-Phthalaldehyde
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Date Report Requested: 10/16/2015
 Time Report Requested: 12:31:33
 First Dose M/F: 01/19/09 / 01/20/09
 Lab: BNW

HARLAN SPRAGUE DAWLEY RATS FEMALE 3.5 ppm	DAY ON TEST										ANIMAL ID
	0	0	0	0	0	0	0	0	0	0	
	4	9	1	9	9	9	9	9	9	9	0
	6	3	6	3	3	3	3	3	3	3	0
	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0
	9	9	9	9	9	9	9	9	9	9	9
	0	0	0	0	0	0	0	0	0	1	0
	1	2	3	4	5	6	7	8	9	0	
* TOTALS											

Brain + + + + + + + + + + **10**

RESPIRATORY SYSTEM

Larynx	+	+	+	+	+	+	+	+	+	+	10
Inflammation, Chronic Active	2	2	2	1	1	2	2	2	2	2	10 1.8
Metaplasia, Squamous	3	3	3	3	3	3	3	3	3	3	10 3.0
Necrosis	3	1	1			1	1		1	1	7 1.3
Regeneration			2								1 2.0
Lung	+	+	+	+	+	+	+	+	+	+	10
Alveolus, Infiltration Cellular, Histiocyte	2	2	2	2	2	2		2	2		9 2.0
Alveolus, Inflammation, Suppurative	2		1								2 1.5
Bronchus, Fibrosis					1						1 1.0
Bronchus, Hyperplasia	2		2		2		2		2	2	6 2.0
Bronchus, Inflammation, Chronic Active	3	2	1	1	2	1	1	1	2	2	10 1.6
Bronchus, Metaplasia, Squamous	2	2		2	1	1	1	1	2	2	9 1.6
Bronchus, Necrosis	1				1						2 1.0
Bronchus, Regeneration		1									1 1.0
Interstitialium, Fibrosis			3							1	2 2.0
Perivascular, Inflammation, Chronic Active		2		1		1	2		2	2	6 1.7
Nose	+	+	+	+	+	+	+	+	+	+	10
Inflammation, Suppurative	3	2	3	3	3	3	3	3	3	3	10 2.9
Glands, Olfactory Epithelium, Hyperplasia				1	1						2 1.0
Olfactory Epithelium, Atrophy	2	2	2	2	2	1	2	2	2	2	10 1.9
Olfactory Epithelium, Metaplasia, Respiratory				2	1	1	1	1	2	2	7 1.4
Olfactory Epithelium, Necrosis			1								1 1.0
Olfactory Epithelium, Regeneration	1										1 1.0
Respiratory Epithelium, Hyperplasia			1		1			1			3 1.0

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2) Mild 4) Marked

Experiment Number: 20727 - 01

Test Type: 90-DAY

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: RATS/HSD

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

ortho-Phthalaldehyde

CAS Number: 643-79-8

Date Report Requested: 10/16/2015

Time Report Requested: 12:31:33

First Dose M/F: 01/19/09 / 01/20/09

Lab: BNW

DAY ON TEST	0	0	0	0	0	0	0	0	0	0	
	0	0	0	0	0	0	0	0	0	0	
HARLAN SPRAGUE DAWLEY RATS	4	9	1	9	9	9	9	9	9	9	
FEMALE	6	3	6	3	3	3	3	3	3	3	
3.5 ppm											
ANIMAL ID	0	0	0	0	0	0	0	0	0	0	
	0	0	0	0	0	0	0	0	0	0	
	9	9	9	9	9	9	9	9	9	9	
	0	0	0	0	0	0	0	0	0	1	
	1	2	3	4	5	6	7	8	9	0	
	* TOTALS										
Respiratory Epithelium, Metaplasia, Squamous	2	2	2	2	2	2	2	3	2	2	10 2.1
Respiratory Epithelium, Necrosis	3	1	3	2	2	1	2	2	1	1	10 1.8
Respiratory Epithelium, Regeneration	2										1 2.0
Turbinate, Atrophy	1	1	1	1	1	1	1	1	1	1	10 1.0
Trachea	+	+	+	+	+	+	+	+	+	+	10
Fibrosis	1	1			1			1	2	1	6 1.2
Inflammation, Chronic Active	2	2	2	2	2	2	1	1	2	2	10 1.8
Metaplasia, Squamous	1	2				2	2	2	1	2	7 1.7
Necrosis			1		1				1		3 1.0
Regeneration	3	3	2	3	3	3	3	3	3	3	10 2.9
Ulcer			2								1 2.0
SPECIAL SENSES SYSTEM											
Eye	+	+	+	+	+	+	+	+	+	+	10
Anterior Chamber, Inflammation, Suppurative										1	1 1.0
Cornea, Inflammation, Suppurative										1	1 1.0
Harderian Gland	+	+	+	+	+	+	+	+	+	+	10
URINARY SYSTEM											
Kidney	+	+	+	+	+	+	+	+	+	+	10
Nephropathy			1								1 1.0
Urinary Bladder	+	+	+	+	+	+	+	+	+	+	10

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1) Minimal 3) Moderate

2) Mild 4) Marked

Experiment Number: 20727 - 01
 Test Type: 90-DAY
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/HSD

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL
 ortho-Phthalaldehyde
 CAS Number: 643-79-8

Date Report Requested: 10/16/2015
 Time Report Requested: 12:31:33
 First Dose M/F: 01/19/09 / 01/20/09
 Lab: BNW

HARLAN SPRAGUE DAWLEY RATS FEMALE 7.0 ppm	DAY ON TEST										ANIMAL ID	
	0 4	0 4	0 9	0 6	0 9	0 4	0 5	0 5	0 5	0 6		
	0 1 1 0 1	0 1 1 0 2	0 1 1 0 3	0 1 1 0 4	0 1 1 0 5	0 1 1 0 6	0 1 1 0 7	0 1 1 0 8	0 1 1 0 9	0 1 1 0 0		
	* TOTALS											

ALIMENTARY SYSTEM

Esophagus	+	+	+	+	+	+	+	+	+	+	10		
Intestine Large, Cecum	+	+	+	+	+	+	+	+	+	+	10		
Intestine Large, Colon	+	+	+	+	+	+	+	+	+	+	10		
Intestine Large, Rectum	+	+	+	+	+	+	+	+	+	+	10		
Intestine Small, Duodenum	+	+	+	+	+	+	+	+	+	+	10		
Intestine Small, Ileum	+	+	+	+	+	+	+	+	+	+	10		
Intestine Small, Jejunum	+	A	+	+	+	+	A	+	A	M	6		
Liver	+	+	+	+	+	+	+	+	+	+	10		
Pancreas	+	+	+	+	+	+	+	+	+	+	10		
Salivary Glands	+	+	+	+	+	+	+	+	+	+	10		
Stomach, Forestomach	+	+	+	+	+	+	+	+	+	+	10		
Stomach, Glandular Ulcer	+	+	+	+	+	+	+	+	+	+	10	2	2.0

CARDIOVASCULAR SYSTEM

Heart	+	+	+	+	+	+	+	+	+	+	10	
Cardiomyopathy		2	1								2	1.5

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 First Dose M/F: 01/19/09 / 01/20/09
 Lab: BNW

DAY ON TEST	0	0	0	0	0	0	0	0	0	0
	HARLAN SPRAGUE DAWLEY RATS FEMALE	0	0	0	0	0	0	0	0	0
7.0 ppm	4	4	9	6	9	4	5	5	5	6
ANIMAL ID	0	0	0	0	0	0	0	0	0	0
	1	1	1	1	1	1	1	1	1	1
	1	1	1	1	1	1	1	1	1	1
	0	0	0	0	0	0	0	0	0	1
	1	2	3	4	5	6	7	8	9	0
* TOTALS										

Congestion	1	1 1.0
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ENDOCRINE SYSTEM

Adrenal Cortex	+	+	+	+	+	+	+	+	+	+	10
Adrenal Medulla	+	+	+	+	+	+	+	+	+	+	10
Islets, Pancreatic	+	+	+	+	+	+	+	+	+	+	10
Parathyroid Gland	+	+	M	+	+	+	+	+	+	+	9
Pituitary Gland	+	+	+	+	+	+	+	+	+	+	10
Thyroid Gland	+	+	+	+	+	+	+	+	+	+	10

GENERAL BODY SYSTEM

NONE

GENITAL SYSTEM

Clitoral Gland	+	+	+	+	+	+	+	+	+	+	10
Ovary	+	+	+	+	+	+	+	+	+	+	10
Uterus	+	+	+	+	+	+	+	+	+	+	10

HEMATOPOIETIC SYSTEM

Bone Marrow	+	+	+	+	+	+	+	+	+	+	10
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 Lab: BNW

HARLAN SPRAGUE DAWLEY RATS FEMALE 7.0 ppm	DAY ON TEST										* TOTALS
	0 4	0 4	0 9	0 6	0 9	0 4	0 5	0 5	0 5	0 6	
ANIMAL ID	0	0	0	0	0	0	0	0	0	0	
	1	1	1	1	1	1	1	1	1	1	
	1	1	1	1	1	1	1	1	1	1	
	0	0	0	0	0	0	0	0	0	0	
Lymph Node, Bronchial	+	+	M	M	M	+	+	+	M	M	5
Lymph Node, Mandibular	+	+	+	+	+	+	+	+	+	+	10
Lymph Node, Mediastinal	+	+	+	+	+	+	+	+	+	+	10
Lymph Node, Mesenteric	M	+	+	+	+	+	+	+	+	+	9
Spleen	+	+	+	+	+	+	+	+	+	+	10
Atrophy, Lymphoid	4	4	2	4	3	3	3	4	4	4	10 3.5
Thymus	+	+	+	+	+	+	+	+	+	+	10
Atrophy, Lymphoid	3	3	3	3	3	3	3	3	3	3	10 3.0
INTEGUMENTARY SYSTEM											
Mammary Gland	+	+	+	+	+	+	+	+	+	+	10
Skin	+	+	+	+	+	+	+	+	+	+	10
Hyperplasia, Squamous					1						1 1.0
Adnexa, Degeneration	1	2	2	1	2	1	2	2	2	2	10 1.7
Epithelium, Hair Follicle, Parakeratosis				1	2		2	1	2	1	6 1.5
MUSCULOSKELETAL SYSTEM											
Bone	+	+	+	+	+	+	+	+	+	+	10
NERVOUS SYSTEM											
Brain	+	+	+	+	+	+	+	+	+	+	10

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 1) Minimal 3) Moderate
 2) Mild 4) Marked

Experiment Number: 20727 - 01
 Test Type: 90-DAY
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/HSD

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL
 ortho-Phthalaldehyde
 CAS Number: 643-79-8

Date Report Requested: 10/16/2015
 Time Report Requested: 12:31:33
 First Dose M/F: 01/19/09 / 01/20/09
 Lab: BNW

DAY ON TEST		0	0	0	0	0	0	0	0	0
HARLAN SPRAGUE DAWLEY RATS FEMALE 7.0 ppm		0	0	0	0	0	0	0	0	0
		0	0	0	0	0	0	0	0	0
		4	4	9	6	9	4	5	5	6
	ANIMAL ID	0	0	0	0	0	0	0	0	0
	1	1	1	1	1	1	1	1	1	
	1	1	1	1	1	1	1	1	1	
	0	0	0	0	0	0	0	0	1	
	1	2	3	4	5	6	7	8	9	
* TOTALS										

RESPIRATORY SYSTEM

Larynx	+	+	+	+	+	+	+	+	+	10		
Inflammation, Chronic Active	3	3	3	2	2	3	3	3	2	2	10	2.6
Metaplasia, Squamous	2	3	3	3	4	3	3	3	3	3	10	3.0
Necrosis	2	4	3		2	3	1	3	2		8	2.5
Regeneration	1							1			2	1.0
Lung	+	+	+	+	+	+	+	+	+	+	10	
Alveolus, Infiltration Cellular, Histiocyte			1	1	1						3	1.0
Alveolus, Inflammation, Suppurative			2	2	1				1		4	1.5
Bronchus, Fibrosis			3	3		1					3	2.3
Bronchus, Hyperplasia				2							1	2.0
Bronchus, Inflammation, Chronic Active	2	2	3	1	3	1	2	2	2	2	10	2.0
Bronchus, Necrosis	2	2	2	2	3	3	2	2	3	2	10	2.3
Bronchus, Regeneration				3		2	1	1		1	5	1.6
Interstitial, Inflammation, Granulomatous			1	2							2	1.5
Nose	+	+	+	+	+	+	+	+	+	+	10	
Foreign Body										2	1	2.0
Inflammation, Suppurative	2	3	2	2	2	3	3	3	2	2	10	2.4
Glands, Olfactory Epithelium, Hyperplasia	1			1							2	1.0
Goblet Cell, Respiratory Epithelium, Hyperplasia										1	1	1.0
Olfactory Epithelium, Atrophy		2	2	1	1	2		2		1	7	1.6
Olfactory Epithelium, Metaplasia, Respiratory										1	1	1.0
Respiratory Epithelium, Hyperplasia					1	1				1	3	1.0
Respiratory Epithelium, Metaplasia, Squamous	2	2	2	2	1	1	2	1	2	2	10	1.7
Respiratory Epithelium, Necrosis	3	3	3	2	1	2	3	3	2	1	10	2.3
Respiratory Epithelium, Regeneration		2				1		2			3	1.7

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DAY ON TEST	0	0	0	0	0	0	0	0	0	0	
	0	0	0	0	0	0	0	0	0	0	
HARLAN SPRAGUE DAWLEY RATS	0	0	0	0	0	0	0	0	0	0	
FEMALE	4	4	9	6	9	4	5	5	5	6	
7.0 ppm											
ANIMAL ID	0	0	0	0	0	0	0	0	0	0	
	1	1	1	1	1	1	1	1	1	1	
	1	1	1	1	1	1	1	1	1	1	
	0	0	0	0	0	0	0	0	0	1	
	1	2	3	4	5	6	7	8	9	0	
* TOTALS											
Respiratory Epithelium, Ulcer	1										1 1.0
Trachea	+ + + + + + + + + +										10
Inflammation, Chronic Active	3	4	3	2	3	3	4	3	2	2	10 2.9
Metaplasia, Squamous	1	1	1	2	2		1			2	7 1.4
Necrosis		4	3	1	1	3	1	2	1		8 2.0
Regeneration	3	1	1		1	1	3	1	3	2	9 1.8
Ulcer							2	2			2 2.0
SPECIAL SENSES SYSTEM											
Eye	+ + + + + + + + + +										10
Anterior Chamber, Inflammation, Suppurative	1	3		1			2			1	5 1.6
Cornea, Hyperplasia										2	1 2.0
Cornea, Inflammation, Suppurative	2	3	1	3	3		3	2		3	8 2.5
Cornea, Necrosis		2	1	3	3		3	2		3	7 2.4
Harderian Gland	+ + + + + + + + + +										10
URINARY SYSTEM											
Kidney	+ + + + + + + + + +										10
Nephropathy									1	1	2 1.0
Urinary Bladder	+ + + + + + + + + +										10

*** END OF REPORT ***

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