

Experiment Number: 61427-03
Test Type: 90-DAY
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL
Test Compound: Vanadium pentoxide
CAS Number: 1314-62-1

Date Report Requested: 10/23/2014
Time Report Requested: 02:32:06
First Dose M/F: NA / NA
Lab: IIT

C Number:	C61427
Lock Date:	05/20/1992
Cage Range:	All
Date Range:	All
Reasons For Removal:	All
Removal Date Range:	All
Treatment Groups:	All
Study Gender:	Both
PWG Approval Date	NONE

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First Dose M/F: NA / NA

Species/Strain: Rat/F 344/N

Lab: IIT

F 344/N Rat Male CONTROL	DAY ON TEST	0	0	0	0	0	0	0	0	0	0	*TOTALS
		0	0	0	0	0	0	0	0	0	0	
		9	9	9	9	9	9	9	9	9	9	
		2	2	2	2	2	2	2	2	2	2	
	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	
		1	2	3	4	5	6	7	8	9	0	

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, Necrosis				1						1	2 1.0
Pancreas	+	+	+	+	+	+	+	+	+	+	10
Salivary Glands	+	+	+	+	+	+	+	+	+	+	10

Cardiovascular System

Heart	+	+	+	+	+	+	+	+	+	+	10
Cardiomyopathy		1	1		1	1	1	1	1	2	8 1.1

Endocrine System

Adrenal Cortex	+	+	+	+	+	+	+	+	+	+	10
Hemorrhage						4					1 4.0
Adrenal Medulla	+	+	+	+	+	+	+	+	+	+	10
Parathyroid Gland	+	+	+	+	+	+	+	+	+	+	10
Pituitary Gland	+	+	+	+	+	+	+	+	+	+	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

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1-4 ..Lesion qualified as:

1) Minimal 3) Moderate

2) Mild 4) Marked

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Lab: IIT

F 344/N Rat Male CONTROL

DAY ON TEST	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
	2	2	2	2	2	2	2	2	2	2
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	0	0
	1	2	3	4	5	6	7	8	9	0
	*TOTALS									

Thyroid Gland	+	+	+	+	+	+	+	+	+	+	10
General Body System											
NONE											
Genital System											
Epididymis	+	+	+	+	+	+	+	+	+	+	10
Preputial Gland	+	+	+	+	+	+	+	+	+	+	10
Inflammation, Chronic			2								1 2.0
Prostate	+	+	+	+	+	+	+	+	+	+	10
Seminal Vesicle	+	+	+	+	+	+	+	+	+	+	10
Testes	+	+	+	+	+	+	+	+	+	+	10
Hematopoietic System											
Bone Marrow	+	+	+	+	+	+	+	+	+	+	10
Lymph Node, Bronchial	+	+	+	+	+	M	+	+	+	M	8
Congestion					2						1 2.0
Lymph Node, Mandibular	+	+	+	+	+	+	+	+	+	+	10
Lymph Node, Mediastinal	+	+	+	+	+	+	+	+	+	+	10
Congestion	2		1		1	1	1		2	2	7 1.4
Lymph Node, Mesenteric	+	+	+	+	+	+	+	+	+	+	10
Spleen	+	+	+	+	+	+	+	+	+	+	10
Thymus	+	+	+	+	+	+	+	+	+	+	10
Integumentary System											

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Route: RESPIRATORY EXPOSURE WHOLE BODY

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First Dose M/F: NA / NA

Species/Strain: Rat/F 344/N

Lab: IIT

F 344/N Rat Male CONTROL	DAY ON TEST	0	0	0	0	0	0	0	0	0	0	*TOTALS
		0	0	0	0	0	0	0	0	0	0	
		9	9	9	9	9	9	9	9	9	9	
		2	2	2	2	2	2	2	2	2	2	
	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	0	1	
		1	2	3	4	5	6	7	8	9	0	

Integumentary System

Mammary Gland	+	+	+	+	+	+	+	+	+	+	10
Skin	+	+	+	+	+	+	+	+	+	+	10

Musculoskeletal System

Bone	+	+	+	+	+	+	+	+	+	+	10
------	---	---	---	---	---	---	---	---	---	---	----

Nervous System

Brain	+	+	+	+	+	+	+	+	+	+	10
-------	---	---	---	---	---	---	---	---	---	---	----

Respiratory System

Larynx	+	+	+	+	+	+	+	+	+	+	10
Lung	+	+	+	+	+	+	+	+	+	+	10
Hemorrhage			2		1			1	1	1	5 1.2
Perivascular, Inflammation	1	2	1	1	1	1	1	1		1	9 1.1
Nose	+	+	+	+	+	+	+	+	+	+	10
Trachea	+	+	+	+	+	+	+	+	+	+	10

Special Senses System

NONE

Urinary System

Kidney	+	+	+	+	+	+	+	+	+	+	10
Urinary Bladder	+	+	+	+	+	+	+	+	+	+	10

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First Dose M/F: NA / NA

Species/Strain: Rat/F 344/N

Lab: IIT

F 344/N Rat Male
1.00 MG/M3

DAY ON TEST	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
	2	2	2	2	2	2	2	2	2	2
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
	2	2	2	2	2	2	2	2	3	3
	1	2	3	4	5	6	7	8	9	0

*TOTALS

Alimentary System

NONE

Cardiovascular System

NONE

Endocrine System

NONE

General Body System

NONE

Genital System

NONE

Hematopoietic System

NONE

Integumentary System

NONE

Musculoskeletal System

NONE

Nervous System

NONE

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First Dose M/F: NA / NA

Species/Strain: Rat/F 344/N

Lab: IIT

F 344/N Rat Male
1.00 MG/M3

DAY ON TEST	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
	2	2	2	2	2	2	2	2	2	2
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
	2	2	2	2	2	2	2	2	3	3
	1	2	3	4	5	6	7	8	9	0
	*TOTALS									

Respiratory System

Larynx	+	+	+	+	+	+	+	+	+	+	10
Lung	+	+	+	+	+	+	+	+	+	+	10
Perivascular, Inflammation	2	1	2	1				1	1	2	7 1.4
Nose	+	+	+	+	+	+	+	+	+	+	10

Special Senses System

NONE

Urinary System

NONE

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Species/Strain: Rat/F 344/N

Lab: IIT

F 344/N Rat Male
2.00 MG/M3

DAY ON TEST	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	
	2	2	2	2	2	2	2	2	2	2	
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	
	4	4	4	4	4	4	4	4	4	5	
	1	2	3	4	5	6	7	8	9	0	*TOTALS

Alimentary System

Liver + + 2

Cardiovascular System

NONE

Endocrine System

NONE

General Body System

NONE

Genital System

NONE

Hematopoietic System

Lymph Node, Mediastinal + + + + 4
Congestion 1 1 1.0

Integumentary System

NONE

Musculoskeletal System

NONE

Nervous System

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Lab: IIT

F 344/N Rat Male
2.00 MG/M3

DAY ON TEST	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
	2	2	2	2	2	2	2	2	2	2
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
	4	4	4	4	4	4	4	4	4	5
	1	2	3	4	5	6	7	8	9	0
	*TOTALS									

NONE

Respiratory System

Larynx	+	+	+	+	+	+	+	+	+	+	10	
Lung	+	+	+	+	+	+	+	+	+	+	10	
Epithelium, Hyperplasia	2	2	2	2	2	2	2	2	2		10	2.0
Fibrosis							1	1			2	1.0
Hemorrhage									1		1	1.0
Inflammation		1	1	1	1	1	1	1	1	1	9	1.0
Perivascular, Inflammation	2	1	2	1	1		1	1	2	1	9	1.3
Nose	+	+	+	+	+	+	+	+	+	+	10	

Special Senses System

NONE

Urinary System

NONE

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Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Test Compound: Vanadium pentoxide
CAS Number: 1314-62-1

Date Report Requested: 10/23/2014
Time Report Requested: 02:32:07
First Dose M/F: NA / NA
Lab: IIT

F 344/N Rat Male
4.00 MG/M3

DAY ON TEST	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
	2	2	2	2	2	2	2	2	2	2
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
	6	6	6	6	6	6	6	6	7	7
	1	2	3	4	5	6	7	8	9	0

*TOTALS

Alimentary System

Liver											+	1		
Hepatodiaphragmatic Nodule											1		1	1.0

Cardiovascular System

NONE

Endocrine System

NONE

General Body System

NONE

Genital System

NONE

Hematopoietic System

Lymph Node, Mediastinal											+		M	1		
Congestion											1				1	1.0

Integumentary System

NONE

Musculoskeletal System

NONE

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X ..Lesion present
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First Dose M/F: NA / NA

Lab: IIT

F 344/N Rat Male
4.00 MG/M3

DAY ON TEST	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
	2	2	2	2	2	2	2	2	2	2
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
	6	6	6	6	6	6	6	6	6	7
	1	2	3	4	5	6	7	8	9	0
	*TOTALS									

Nervous System

Brain + 1

Respiratory System

Larynx + + + + + + + + + + 10

Lung + + + + + + + + + + 10

Epithelium, Hyperplasia 3 3 3 3 3 3 3 3 3 3 10 3.0

Fibrosis 2 2 2 3 2 2 2 1 2 1 10 1.9

Inflammation 1 1 1 1 1 1 1 1 1 1 10 1.0

Nose + + + + + + + + + + 10

Respirat Epith, Hyperplasia 1 1 1.0

Respirat Epith, Metaplasia 1 1 1.0

Special Senses System

NONE

Urinary System

NONE

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CAS Number: 1314-62-1

First Dose M/F: NA / NA

Species/Strain: Rat/F 344/N

Lab: IIT

F 344/N Rat Male
8.00 MG/M3

DAY ON TEST	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
	2	2	2	2	2	2	2	2	2	2
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
	8	8	8	8	8	8	8	8	8	9
	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	M	+	+	+	+	+	+	+	+	+	9
Intestine Small, Duodenum	+	+	+	+	+	+	+	+	+	+	10
Intestine Small, Ileum	+	+	+	+	+	+	+	+	+	+	10
Intestine Small, Jejunum	+	+	+	+	+	+	+	+	+	+	10
Liver	+	+	+	+	+	+	+	+	+	+	10
Pancreas	+	+	+	+	+	+	+	+	+	+	10
Salivary Glands	+	+	+	+	+	+	+	+	+	+	10

Cardiovascular System

Heart	+	+	+	+	+	+	+	+	+	+	10
Cardiomyopathy			1	1	2		1			1	5 1.2

Endocrine System

Adrenal Cortex	+	+	+	+	+	+	+	+	+	+	10
Adrenal Medulla	+	+	+	+	+	+	+	+	+	+	10
Parathyroid Gland	M	M	+	+	+	+	+	M	+	+	7
Pituitary Gland	+	+	+	+	+	+	+	+	+	+	10
Thyroid Gland	+	+	+	+	+	+	+	+	+	+	10

General Body System

* ..Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade

+ ..Tissue examined microscopically

X ..Lesion present

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Species/Strain: Rat/F 344/N

Lab: IIT

F 344/N Rat Male
8.00 MG/M3

DAY ON TEST	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
	2	2	2	2	2	2	2	2	2	2
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
	8	8	8	8	8	8	8	8	8	9
	1	2	3	4	5	6	7	8	9	0
	*TOTALS									

NONE											
Genital System											
Epididymis	+	+	+	+	+	+	+	+	+	+	10
Preputial Gland	+	+	+	+	+	+	+	+	+	+	10
Prostate	+	+	+	+	+	+	+	+	+	+	10
Seminal Vesicle	+	+	+	+	+	+	+	+	+	+	10
Testes	+	+	+	+	+	+	+	+	+	+	10
Degeneration						2					1 2.0
Hematopoietic System											
Bone Marrow	+	+	+	+	+	+	+	+	+	+	10
Lymph Node, Bronchial	M	+	+	+	+	+	+	+	+	+	9
Lymph Node, Mandibular	+	+	+	+	+	+	+	+	+	+	10
Lymph Node, Mediastinal	+	+	+	+	+	+	+	M	+	+	9
Lymph Node, Mesenteric	+	+	+	+	+	+	+	+	+	+	10
Spleen	+	+	+	+	+	+	+	+	+	+	10
Thymus	+	+	+	+	+	+	+	+	+	+	10
Integumentary System											
Mammary Gland	+	+	+	M	M	+	+	+	+	M	7
Skin	+	+	+	+	+	+	+	+	+	+	10
Musculoskeletal System											
Bone	+	+	+	+	+	+	+	+	+	+	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: 61427-03

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Date Report Requested: 10/23/2014

Test Type: 90-DAY

Test Compound: Vanadium pentoxide

Time Report Requested: 02:32:07

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 1314-62-1

First Dose M/F: NA / NA

Species/Strain: Rat/F 344/N

Lab: IIT

F 344/N Rat Male
8.00 MG/M3

	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			
	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	*TOTALS		
Bone	+	+	+	+	+	+	+	+	+	+	10		
Metaphysis, Atrophy						2					1	2.0	
Nervous System													
Brain	+	+	+	+	+	+	+	+	+	+	10		
Respiratory System													
Larynx	+	+	+	+	+	+	+	+	+	+	10		
Lung	+	+	+	+	+	+	+	+	+	+	10		
Bronchiole, Exudate			1	1	1		1		1	1	7	1.0	
Epithelium, Hyperplasia	3	3	4	3	4	4	4	4	3	4	10	3.6	
Fibrosis	2	4	4	3	3	4	3	3	3	3	10	3.2	
Hemorrhage			2	1	2	3		2	2	2	8	2.0	
Inflammation	1	1	1	2	2	2	2	2	1	2	10	1.6	
Nose	+	+	+	+	+	+	+	+	+	+	10		
Respirat Epith, Hyperplasia	1	1	1	1	1	2	1	1	2	1	10	1.2	
Respirat Epith, Metaplasia	1	1	1	1	1	2	1	1	2	1	10	1.2	
Trachea	+	+	+	+	+	+	+	+	+	+	10		
Special Senses System													
NONE													
Urinary System													
Kidney	+	+	+	+	+	+	+	+	+	+	10		
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: 61427-03

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Date Report Requested: 10/23/2014

Test Type: 90-DAY

Test Compound: Vanadium pentoxide

Time Report Requested: 02:32:07

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 1314-62-1

First Dose M/F: NA / NA

Species/Strain: Rat/F 344/N

Lab: IIT

F 344/N Rat Male 16.00 MG/M3	DAY ON TEST	0	0	0	0	0	0	0	0	0	0	
		0	0	0	0	0	0	0	0	0	0	
		7	9	5	5	5	9	5	7	7	9	
		5	2	4	3	9	2	5	4	4	2	
	ANIMAL ID	0	0	0	0	0	0	0	0	0	0	*TOTALS
	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		
	1	2	3	4	5	6	7	8	9	0		

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
Hepatodiaphragmatic Nodule						1				1	2 1.0
Pancreas	+	+	+	+	+	+	+	+	+	+	10
Salivary Glands	+	+	+	M	+	+	+	+	+	+	9

Cardiovascular System

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

Endocrine System

Adrenal Cortex	+	+	+	+	+	+	+	+	+	+	10
Adrenal Medulla	+	+	+	+	+	+	+	+	+	+	10
Parathyroid Gland	+	M	+	+	M	+	+	M	+	M	6
Pituitary Gland	M	M	+	+	+	+	+	M	+	+	7
Thyroid Gland	+	+	+	+	+	+	+	+	+	+	10

General Body 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: 61427-03

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Date Report Requested: 10/23/2014

Test Type: 90-DAY

Test Compound: Vanadium pentoxide

Time Report Requested: 02:32:07

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 1314-62-1

First Dose M/F: NA / NA

Species/Strain: Rat/F 344/N

Lab: IIT

F 344/N Rat Male
16.00 MG/M3

DAY ON TEST	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
	7	9	5	5	5	9	5	7	7	9
	5	2	4	3	9	2	5	4	4	2
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
	1	2	3	4	5	6	7	8	9	0

*TOTALS

NONE

Genital System

Epididymis	+	+	+	+	+	+	+	+	+	+	10	
Atypia Cellular	2	3	2	2	1	4	2	2	2	4	10	2.4
Preputial Gland	+	+	+	+	+	+	+	+	+	+	10	
Atrophy		3	3	1	3	2					5	2.4
Prostate	+	+	+	+	+	+	+	+	+	+	10	
Atrophy	3	3	3	1		4	2	2	2	4	9	2.7
Seminal Vesicle	+	+	+	+	+	+	+	+	+	+	10	
Atrophy	3	3	3	2	3	4	3	2	3	4	10	3.0
Testes	+	+	+	+	+	+	+	+	+	+	10	
Degeneration		1		1		4		2	1	4	6	2.2

Hematopoietic System

Bone Marrow	+	+	+	+	+	+	+	+	+	+	10	
Hypocellularity							3	3			2	3.0
Lymph Node, Bronchial	+	M	+	M	M	M	+	+	M	+	5	
Depletion Lymphoid							3				1	3.0
Hyperplasia	2										1	2.0
Lymph Node, Mandibular	+	+	M	M	+	+	+	+	+	+	8	
Depletion Lymphoid							2	3		2	3	2.3
Lymph Node, Mediastinal	+	M	M	M	+	+	+	+	+	+	7	
Depletion Lymphoid	2				4	1	4				4	2.8

* ..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: 61427-03

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Date Report Requested: 10/23/2014

Test Type: 90-DAY

Test Compound: Vanadium pentoxide

Time Report Requested: 02:32:07

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 1314-62-1

First Dose M/F: NA / NA

Species/Strain: Rat/F 344/N

Lab: IIT

F 344/N Rat Male
16.00 MG/M3

DAY ON TEST	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
	7	9	5	5	5	9	5	7	7	9
	5	2	4	3	9	2	5	4	4	2
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
	1	2	3	4	5	6	7	8	9	0
	*TOTALS									

Lymph Node, Mesenteric	+	+	+	+	+	+	+	+	+	+	10	
Depletion Lymphoid	3	2							1		3	2.0
Spleen	+	+	+	+	+	+	+	+	+	+	10	
Depletion Lymphoid	3	4	3	4	4	2	3	4	3	2	10	3.2
Thymus	+	M	+	+	+	+	+	+	+	+	9	
Depletion Lymphoid	3		3	4	4	3	4	4	3	2	9	3.3
Integumentary System												
Mammary Gland	+	+	M	+	M	+	+	+	+	+	8	
Skin	+	+	+	+	+	+	+	+	+	+	10	
Musculoskeletal System												
Bone	+	+	+	+	+	+	+	+	+	+	10	
Metaphysis, Atrophy	3	2	1	2	3	3	2	2	3	2	10	2.3
Nervous System												
Brain	+	+	+	+	+	+	+	+	+	+	10	
Respiratory System												
Larynx	+	+	+	+	+	+	+	+	+	+	10	
Lung	+	+	+	+	+	+	+	+	+	+	10	
Bronchiole, Exudate	1	1	2	1		2	1		2	1	8	1.4
Epithelium, Hyperplasia	4	3	3	3	3	4	3	3	4	3	10	3.3
Fibrosis	3	3	3	3	4	3	3	2	4	3	10	3.1
Inflammation	2	2	2	2	2	3	2	2	2	2	10	2.1

* ..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: 61427-03

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Date Report Requested: 10/23/2014

Test Type: 90-DAY

Test Compound: Vanadium pentoxide

Time Report Requested: 02:32:07

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 1314-62-1

First Dose M/F: NA / NA

Species/Strain: Rat/F 344/N

Lab: IIT

F 344/N Rat Male
16.00 MG/M3

DAY ON TEST	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
	7	9	5	5	5	9	5	7	7	9
	5	2	4	3	9	2	5	4	4	2
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
	1	2	3	4	5	6	7	8	9	0

*TOTALS

Nose	+	+	+	+	+	+	+	+	+	+	10
Inflammation	1	2		3	2	1	1		1		7 1.6
Respirat Epith, Hyperplasia	2	2	2	2	3	2	2	2	2	1	10 2.0
Respirat Epith, Metaplasia	2	2	2	2	2	2	2	1	2	1	10 1.8
Trachea	+	+	+	+	+	+	+	+	+	+	10
Special Senses System											
NONE											
Urinary System											
Kidney	+	+	+	+	+	+	+	+	+	+	10
Papilla, Degeneration		2									1 2.0
Urinary Bladder	+	+	+	+	+	+	+	+	+	+	10

END OF MALE DATA

* ..Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade

+ ..Tissue examined microscopically

X ..Lesion present

I ..Insufficient tissue

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1-4 ..Lesion qualified as:

1) Minimal 3) Moderate

2) Mild 4) Marked

Experiment Number: 61427-03

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Date Report Requested: 10/23/2014

Test Type: 90-DAY

Test Compound: Vanadium pentoxide

Time Report Requested: 02:32:07

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 1314-62-1

First Dose M/F: NA / NA

Species/Strain: Rat/F 344/N

Lab: IIT

F 344/N Rat Female CONTROL	DAY ON TEST	0	0	0	0	0	0	0	0	0	0	*TOTALS
		0	0	0	0	0	0	0	0	0	0	
		9	9	9	9	9	9	9	9	9	9	
		2	2	2	2	2	2	2	2	2	2	
	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		
	1	1	1	1	1	1	1	1	1	2		
	1	2	3	4	5	6	7	8	9	0		

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
Hepatodiaphragmatic Nodule							1				1 1.0
Pancreas	+	+	+	+	+	+	+	+	+	+	10
Salivary Glands	+	+	+	+	+	+	+	+	+	+	10

Cardiovascular System

Heart	+	+	+	+	+	+	+	+	+	+	10
Cardiomyopathy		1			1						2 1.0

Endocrine System

Adrenal Cortex	+	+	+	+	+	+	+	+	+	+	10
Adrenal Medulla	+	+	+	+	+	+	+	+	+	+	10
Parathyroid Gland	+	+	+	+	+	M	M	M	+	+	7
Pituitary Gland	+	+	+	+	+	+	+	+	+	+	10
Thyroid Gland	+	+	+	+	+	+	+	+	+	+	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: 61427-03

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Date Report Requested: 10/23/2014

Test Type: 90-DAY

Test Compound: Vanadium pentoxide

Time Report Requested: 02:32:08

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 1314-62-1

First Dose M/F: NA / NA

Species/Strain: Rat/F 344/N

Lab: IIT

F 344/N Rat Female CONTROL

DAY ON TEST	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
	2	2	2	2	2	2	2	2	2	2
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
	1	1	1	1	1	1	1	1	1	2
	1	2	3	4	5	6	7	8	9	0
	*TOTALS									

General Body System

NONE

Genital System

Clitoral Gland	+	+	+	+	+	+	+	+	+	+	10
Ovary	+	+	+	+	+	+	+	+	+	+	10
Cyst	1										1 1.0
Uterus	+	+	+	+	+	+	+	+	+	+	10

Hematopoietic System

Bone Marrow	+	+	+	+	+	+	+	+	+	+	10
Lymph Node, Bronchial	+	+	+	+	+	+	+	+	+	+	10
Lymph Node, Mandibular	+	+	+	+	+	+	+	+	+	+	10
Lymph Node, Mediastinal	+	+	+	+	M	+	+	+	+	M	8
Congestion									2		1 2.0
Lymph Node, Mesenteric	+	+	+	+	+	+	+	+	+	+	10
Spleen	+	+	+	+	+	+	+	+	+	+	10
Thymus	+	+	+	+	+	+	+	+	+	+	10

Integumentary System

Mammary Gland	+	+	+	+	+	+	+	+	+	+	10
Skin	+	+	+	+	+	+	+	+	+	+	10

Musculoskeletal 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: 61427-03

Test Type: 90-DAY

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Test Compound: Vanadium pentoxide

CAS Number: 1314-62-1

Date Report Requested: 10/23/2014

Time Report Requested: 02:32:08

First Dose M/F: NA / NA

Lab: IIT

F 344/N Rat Female CONTROL

	DAY ON TEST												
	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			
	2	2	2	2	2	2	2	2	2	2			
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			
	1	1	1	1	1	1	1	1	1	2			
	1	2	3	4	5	6	7	8	9	0	*TOTALS		
Bone	+	+	+	+	+	+	+	+	+	+	10		
Nervous System													
Brain	+	+	+	+	+	+	+	+	+	+	10		
Respiratory System													
Larynx	+	+	+	+	+	+	+	+	+	+	10		
Lung	+	+	+	+	+	+	+	+	+	+	10		
Perivascular, Inflammation	1	1	1	1	2	1	1	1	1	1	10	1.1	
Nose	+	+	+	+	+	+	+	+	+	+	10		
Trachea	+	+	+	+	+	+	+	+	+	+	10		
Special Senses System													
NONE													
Urinary System													
Kidney	+	+	+	+	+	+	+	+	+	+	10		
Mineralization	1		1	1			1	1	1	1	7	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

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1-4 ..Lesion qualified as:

1) Minimal 3) Moderate

2) Mild 4) Marked

Experiment Number: 61427-03

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Date Report Requested: 10/23/2014

Test Type: 90-DAY

Test Compound: Vanadium pentoxide

Time Report Requested: 02:32:08

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 1314-62-1

First Dose M/F: NA / NA

Species/Strain: Rat/F 344/N

Lab: IIT

F 344/N Rat Female
1.00 MG/M3

DAY ON TEST	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
	2	2	2	2	2	2	2	2	2	2
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
	3	3	3	3	3	3	3	3	3	4
	1	2	3	4	5	6	7	8	9	0
	*TOTALS									

Alimentary System

Liver + 1

Cardiovascular System

NONE

Endocrine System

NONE

General Body System

NONE

Genital System

Ovary + 1
Cyst 1 1 1.0

Hematopoietic System

Lymph Node, Mandibular + 1
Lymph Node, Mediastinal + 1

Integumentary System

NONE

Musculoskeletal System

NONE

* ..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: 61427-03

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Date Report Requested: 10/23/2014

Test Type: 90-DAY

Test Compound: Vanadium pentoxide

Time Report Requested: 02:32:08

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 1314-62-1

First Dose M/F: NA / NA

Species/Strain: Rat/F 344/N

Lab: IIT

F 344/N Rat Female
1.00 MG/M3

DAY ON TEST	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
	2	2	2	2	2	2	2	2	2	2
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
	3	3	3	3	3	3	3	3	3	4
	1	2	3	4	5	6	7	8	9	0

*TOTALS

Nervous System

NONE

Respiratory System

Larynx	+	+	+	+	+	+	+	+	+	+	10
Lung	+	+	+	+	+	+	+	+	+	+	10
Perivascular, Inflammation	2	1	2	1	1	2	1	1	1	1	10 1.3
Nose	+	+	+	+	+	+	+	+	+	+	10

Special Senses System

NONE

Urinary System

NONE

* ..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: 61427-03

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Date Report Requested: 10/23/2014

Test Type: 90-DAY

Test Compound: Vanadium pentoxide

Time Report Requested: 02:32:08

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 1314-62-1

First Dose M/F: NA / NA

Species/Strain: Rat/F 344/N

Lab: IIT

F 344/N Rat Female 2.00 MG/M3	DAY ON TEST	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	
		2	2	2	2	2	2	2	2	2	2	
	ANIMAL ID	0	0	0	0	0	0	0	0	0	0	*TOTALS
	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	6		
	1	2	3	4	5	6	7	8	9	0		

Alimentary System

Liver			+	+			2	
Hepatodiaphragmatic Nodule			1	1		2	1.0	
Pancreas	+					1		
Ectopic Tissue	1					1	1.0	

Cardiovascular System

NONE

Endocrine System

NONE

General Body System

NONE

Genital System

NONE

Hematopoietic System

Lymph Node, Mandibular						+	1	
Lymph Node, Mediastinal			+			+	2	

Integumentary System

NONE

* ..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: 61427-03

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Date Report Requested: 10/23/2014

Test Type: 90-DAY

Test Compound: Vanadium pentoxide

Time Report Requested: 02:32:08

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 1314-62-1

First Dose M/F: NA / NA

Species/Strain: Rat/F 344/N

Lab: IIT

F 344/N Rat Female
2.00 MG/M3

DAY ON TEST	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
	2	2	2	2	2	2	2	2	2	2
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
	5	5	5	5	5	5	5	5	5	6
	1	2	3	4	5	6	7	8	9	0

*TOTALS

Musculoskeletal System

NONE

Nervous System

NONE

Respiratory System

Larynx	+	+	+	+	+	+	+	+	+	+	10	
Lung	+	+	+	+	+	+	+	+	+	+	10	
Epithelium, Hyperplasia	2	1	1	1	1	1	1	1	2	2	10	1.3
Perivascular, Inflammation	1	1	1	1	1	2	1		1		8	1.1
Nose	+	+	+	+	+	+	+	+	+	+	10	

Special Senses System

NONE

Urinary System

NONE

* ..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: 61427-03

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Date Report Requested: 10/23/2014

Test Type: 90-DAY

Test Compound: Vanadium pentoxide

Time Report Requested: 02:32:08

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 1314-62-1

First Dose M/F: NA / NA

Species/Strain: Rat/F 344/N

Lab: IIT

F 344/N Rat Female
4.00 MG/M3

DAY ON TEST	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	
	2	2	2	2	2	2	2	2	2	2	
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	
	7	7	7	7	7	7	7	7	7	8	
	1	2	3	4	5	6	7	8	9	0	*TOTALS

Alimentary System

Liver + 1
 Hepatodiaphragmatic Nodule 1 1 1.0

Cardiovascular System

NONE

Endocrine System

NONE

General Body System

NONE

Genital System

NONE

Hematopoietic System

Lymph Node, Mandibular + 1

Integumentary System

NONE

Musculoskeletal System

NONE

Nervous 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: 61427-03

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Date Report Requested: 10/23/2014

Test Type: 90-DAY

Test Compound: Vanadium pentoxide

Time Report Requested: 02:32:08

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 1314-62-1

First Dose M/F: NA / NA

Species/Strain: Rat/F 344/N

Lab: IIT

F 344/N Rat Female 4.00 MG/M3	DAY ON TEST	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	
		2	2	2	2	2	2	2	2	2	2	
	ANIMAL ID	0	0	0	0	0	0	0	0	0	0	*TOTALS
	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	8		
	1	2	3	4	5	6	7	8	9	0		

NONE												
Respiratory System												
Larynx	+	+	+	+	+	+	+	+	+	+	+	10
Lung	+	+	+	+	+	+	+	+	+	+	+	10
Epithelium, Hyperplasia	3	3	3	3	3	3	3	3	2	3		10 2.9
Fibrosis	1	1	2	1	1	1	1	1	1	1		10 1.1
Inflammation	1	1	1	1	1	1	1	1	1	1		10 1.0
Nose	+	+	+	+	+	+	+	+	+	+		10
Respirat Epith, Hyperplasia	1	1	1	1	1	1	1	1	1	1		10 1.0
Respirat Epith, Metaplasia	1	1	1		1	1	1	1	1			8 1.0

Special Senses System

NONE
Urinary System
NONE

* ..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: 61427-03

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Date Report Requested: 10/23/2014

Test Type: 90-DAY

Test Compound: Vanadium pentoxide

Time Report Requested: 02:32:08

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 1314-62-1

First Dose M/F: NA / NA

Species/Strain: Rat/F 344/N

Lab: IIT

F 344/N Rat Female 8.00 MG/M3	DAY ON TEST	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	
		2	2	2	2	2	2	2	2	2	2	
	ANIMAL ID	0	0	0	0	0	0	0	0	0	0	*TOTALS
	0	0	0	0	0	0	0	0	0	0		
	0	0	0	0	0	0	0	0	0	1		
	9	9	9	9	9	9	9	9	9	0		
	1	2	3	4	5	6	7	8	9	0		

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
Hepatodiaphragmatic Nodule					1	1	2				3 1.3
Inflammation	1										1 1.0
Pancreas	+	+	+	+	+	+	+	+	+	+	10
Salivary Glands	+	+	+	+	+	+	+	+	+	+	10

Cardiovascular System

Heart	+	+	+	+	+	+	+	+	+	+	10
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Endocrine System

Adrenal Cortex	+	+	+	+	+	+	+	+	+	+	10
Adrenal Medulla	+	+	+	+	+	+	+	+	+	+	10
Parathyroid Gland	M	M	M	+	M	M	M	M	+	M	2
Pituitary Gland	+	+	+	+	+	+	+	+	+	+	10
Thyroid Gland	+	+	+	+	+	+	+	+	+	+	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: 61427-03

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Date Report Requested: 10/23/2014

Test Type: 90-DAY

Test Compound: Vanadium pentoxide

Time Report Requested: 02:32:08

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 1314-62-1

First Dose M/F: NA / NA

Species/Strain: Rat/F 344/N

Lab: IIT

F 344/N Rat Female
8.00 MG/M3

DAY ON TEST	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
	2	2	2	2	2	2	2	2	2	2
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	1
	9	9	9	9	9	9	9	9	9	0
	1	2	3	4	5	6	7	8	9	0
	*TOTALS									

General Body System

NONE

Genital System

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

Hematopoietic System

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

Integumentary System

Mammary Gland	+	+	+	+	+	+	+	+	+	+	10
Skin	+	+	+	+	+	+	+	+	+	+	10

Musculoskeletal System

Bone	+	+	+	+	+	+	+	+	+	+	10
Metaphysis, Atrophy					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

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1-4 ..Lesion qualified as:

1) Minimal 3) Moderate

2) Mild 4) Marked

Experiment Number: 61427-03

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Date Report Requested: 10/23/2014

Test Type: 90-DAY

Test Compound: Vanadium pentoxide

Time Report Requested: 02:32:08

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 1314-62-1

First Dose M/F: NA / NA

Species/Strain: Rat/F 344/N

Lab: IIT

F 344/N Rat Female
8.00 MG/M3

DAY ON TEST	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
	2	2	2	2	2	2	2	2	2	2
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	1
	9	9	9	9	9	9	9	9	9	0
	1	2	3	4	5	6	7	8	9	0
	*TOTALS									

Nervous System

Brain + + + + + + + + + + 10

Respiratory System

Larynx + + + | + + + + + 9

Lung + + + + + + + + + + 10

Bronchiole, Exudate 1 1 1 1 1 1 1 1 1 1 10 1.0

Epithelium, Hyperplasia 4 4 4 3 3 3 4 4 3 3 10 3.5

Fibrosis 3 2 3 2 3 3 3 4 3 3 10 2.9

Inflammation 3 2 2 2 1 2 2 2 1 2 10 1.9

Nose + + + + + + + + + + 10

Inflammation 1 1 1.0

Respirat Epith, Hyperplasia 2 2 1 2 2 1 2 2 2 2 10 1.8

Respirat Epith, Metaplasia 2 2 1 2 2 1 2 2 2 2 10 1.8

Trachea + + + + + + + + + + 10

Special Senses System

NONE

Urinary System

Kidney + + + + + + + + + + 10

Inflammation 1 1 1.0

Mineralization 1 1 1 1 1 1 6 1.0

Urinary Bladder + + + + + + + M M M 7

* ..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: 61427-03

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Date Report Requested: 10/23/2014

Test Type: 90-DAY

Test Compound: Vanadium pentoxide

Time Report Requested: 02:32:08

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 1314-62-1

First Dose M/F: NA / NA

Species/Strain: Rat/F 344/N

Lab: IIT

F 344/N Rat Female 16.00 MG/M3	DAY ON TEST	0	0	0	0	0	0	0	0	0	0	*TOTALS
		0	0	0	0	0	0	0	0	0	0	
		9	9	9	9	6	9	9	8	9	9	
		2	1	2	2	2	2	2	0	2	2	
	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		
	1	1	1	1	1	1	1	1	1	2		
	1	2	3	4	5	6	7	8	9	0		

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

Cardiovascular System

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

Endocrine System

Adrenal Cortex	+	+	+	+	+	+	+	+	+	+	10
Adrenal Medulla	+	+	+	+	+	+	+	+	+	+	10
Parathyroid Gland	+	M	+	+	+	+	+	+	+	+	9
Pituitary Gland	+	M	+	+	+	+	+	+	+	+	9
Thyroid Gland	+	+	+	+	+	+	+	+	+	+	10

General Body System

NONE

* ..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: 61427-03

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Date Report Requested: 10/23/2014

Test Type: 90-DAY

Test Compound: Vanadium pentoxide

Time Report Requested: 02:32:08

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 1314-62-1

First Dose M/F: NA / NA

Species/Strain: Rat/F 344/N

Lab: IIT

F 344/N Rat Female 16.00 MG/M3	DAY ON TEST	0	0	0	0	0	0	0	0	0	0	*TOTALS
		0	0	0	0	0	0	0	0	0	0	
		9	9	9	9	6	9	9	8	9	9	
		2	1	2	2	2	2	2	0	2	2	
	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		
	1	1	1	1	1	1	1	1	1	2		
	1	2	3	4	5	6	7	8	9	0		

Genital System

Clitoral Gland	+	+	+	+	+	+	+	+	+	+	10
Ovary	+	+	+	+	+	+	+	+	+	+	10
Uterus	+	+	+	+	+	+	+	+	+	+	10
Atrophy	2	2	2	2		2			2	1	7 1.9

Hematopoietic System

Bone Marrow	+	+	+	+	+	+	+	+	+	+	10
Lymph Node, Bronchial	+	+	+	+	+	+	+	M	+	+	9
Depletion Lymphoid			2		2	2		1		2	5 1.8
Lymph Node, Mandibular	+	+	+	M	M	+	+	+	+	+	8
Depletion Lymphoid		1	2							2	3 1.7
Lymph Node, Mediastinal	+	M	+	+	M	+	+	+	+	M	7
Depletion Lymphoid				3		2		1			3 2.0
Lymph Node, Mesenteric	+	+	+	+	+	+	+	+	+	+	10
Depletion Lymphoid		2			3						2 2.5
Spleen	+	+	+	+	+	+	+	+	+	+	10
Depletion Lymphoid	1	3	1	2	4	1		4	1	2	9 2.1
Thymus	+	M	+	+	+	+	+	+	+	+	9
Depletion Lymphoid			2	3	4	3	4	3	2	4	8 3.1

Integumentary System

Mammary Gland	M	+	+	+	+	+	+	+	+	+	9
---------------	---	---	---	---	---	---	---	---	---	---	---

* ..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: 61427-03

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Date Report Requested: 10/23/2014

Test Type: 90-DAY

Test Compound: Vanadium pentoxide

Time Report Requested: 02:32:08

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 1314-62-1

First Dose M/F: NA / NA

Species/Strain: Rat/F 344/N

Lab: IIT

F 344/N Rat Female 16.00 MG/M3	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	*TOTALS	
	1	1	1	1	1	1	1	1	1	1		
Skin	+	+	+	+	+	+	+	+	+	+	10	
Musculoskeletal System												
Bone	+	+	+	+	+	+	+	+	+	+	10	
Metaphysis, Atrophy	1	1	1	1	2	2	3	3	2	3	10	1.9
Nervous System												
Brain	+	+	+	+	+	+	+	+	+	+	10	
Respiratory System												
Larynx	+	+	+	+	+	+	+	+	+	+	10	
Lung	+	+	+	+	+	+	+	+	+	+	10	
Bronchiole, Exudate	1	1		2	1	1	1	1		1	8	1.1
Epithelium, Hyperplasia	3	4	3	3	4	3	3	3	3	3	10	3.2
Epithelium, Metaplasia, Squamous		1									1	1.0
Fibrosis	3	4	4	3	4	3	2	3	3	3	10	3.2
Hemorrhage						2					1	2.0
Inflammation	1	2	1	1	1	1	2	1	1	1	10	1.2
Nose	+	+	+	+	+	+	+	+	+	+	10	
Inflammation	2	2	1	2		1	2	1	1	2	9	1.6
Respirat Epith, Hyperplasia	3	3	3	2	3	3	3	2	2	3	10	2.7
Respirat Epith, Metaplasia	3	3	3	2	3	3	3	3	2	3	10	2.8
Trachea	+	+	+	+	+	+	+	+	+	+	10	
Special Senses 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: 61427-03

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Date Report Requested: 10/23/2014

Test Type: 90-DAY

Test Compound: Vanadium pentoxide

Time Report Requested: 02:32:08

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 1314-62-1

First Dose M/F: NA / NA

Species/Strain: Rat/F 344/N

Lab: IIT

F 344/N Rat Female
16.00 MG/M3

DAY ON TEST	0	0	0	0	0	0	0	0	0	0	
	0	0	0	0	0	0	0	0	0	0	
	9	9	9	9	6	9	9	8	9	9	
	2	1	2	2	2	2	2	0	2	2	
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	
	1	1	1	1	1	1	1	1	1	2	
	1	2	3	4	5	6	7	8	9	0	*TOTALS

NONE

Urinary System

Kidney	+	+	+	+	+	+	+	+	+	+	10
Mineralization	1					1			1	1	4 1.0
Urinary Bladder	+	+	+	+	+	+	+	+	+	+	10

** END OF REPORT **

* ..Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade

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1-4 ..Lesion qualified as:

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