

Experiment Number: 05083-01
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL
Test Compound: Wollastonite calcium silicates
CAS Number: 13983-17-0

Date Report Requested: 10/23/2014
Time Report Requested: 12:34:28
First Dose M/F: NA / NA
Lab: NORTHROP

C Number:	C55470B
Lock Date:	Not Entered.
Cage Range:	All
Date Range:	All
Reasons For Removal:	All
Removal Date Range:	All
Treatment Groups:	All
Study Gender:	Male
PWG Approval Date	NONE

Experiment Number: 05083-01

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Date Report Requested: 10/23/2014

Test Type: CHRONIC

Test Compound: Wollastonite calcium silicates

Time Report Requested: 12:34:29

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 13983-17-0

First Dose M/F: NA / NA

Species/Strain: Rat/F 344/N

Lab: NORTHROP

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	0	0	0	0	0	0	0	0	0		
ANIMAL ID	7	6	7	4	7	7	7	6	7	3	7	7	0	7	5	7	7	6	7	6	6	5	0	3	5	7	0	3	0	7	
	3	3	8	6	3	8	2	8	2	7	1	8	9	1	6	2	7	3	5	2	8	0	3	9	7	4	3	9	7	0	
	7	5	7	6	8	7	9	1	2	3	0	7	3	6	5	4	3	4	4	6	8	0	4	3	3	9	2	3	3	8	
	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	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	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	
	1	2	3	4	5	6	7	8	9	0	1	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
Heart	+	+	+	+	+	+	+		+	M	+	+		+	+		+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Atrium, Mineralization																															
Atrium, Thrombosis										X																					
Cardiomyopathy	2	3	4		3	3	3		2		2	4		3	2		2	3	3	2	1	3	2			3	3				
Mineralization												3											3								
Endocrine System																															
Adrenal Gland									+				+																		
Adrenal Gland, Cortex	+	+	+	+	+	+	+		+	+	+	+		+	+		+	M	+	+	+	+	+		+	+	+		+		
Hyperplasia, Focal																															
Vacuolization Cytoplasmic	1	3			2	2	1		2	2																		2	2		
Adrenal Gland, Medulla	+	+	+	+	+	+	+		+	+	+	+		+	+		+	M	+	+	+	+	+		+	+	+		+		
Hyperplasia																															
Necrosis																															
Islets, Pancreatic	+				+																										
Hyperplasia	1																														
Parathyroid Gland	M	+	M	+	M	+	+		+	M	+	+		+	+		+	+	+	+	+	+	+	+	+	+	M	+	+		M
Hyperplasia																															
Pituitary Gland	+	+	+	I	I	+	+		+	+	+	+		I	+		+	+	+	+	+	+	+	M		M	+	+		+	
Hyperplasia						2			2													2						2			
Thyroid Gland	+	+	+	+	M	+	+		+	M	+	+		A	+		+	+	+	+	+	+	+	+	+	M	+	+		M	
C Cell, Hyperplasia			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

A ..Autolysis precludes evaluation

BLANK ..Not examined microscopically

1-4 ..Lesion qualified as:

1) Minimal 3) Moderate

2) Mild 4) Marked

Experiment Number: 05083-01

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Date Report Requested: 10/23/2014

Test Type: CHRONIC

Test Compound: Wollastonite calcium silicates

Time Report Requested: 12:34:30

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 13983-17-0

First Dose M/F: NA / NA

Species/Strain: Rat/F 344/N

Lab: NORTHROP

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	0	0	0	0	0	0	0	0	0	
ANIMAL ID	7	6	7	4	7	7	7	6	7	3	7	7	0	7	5	7	7	6	7	6	6	5	0	3	5	7	0	3	0	7
	3	3	8	6	3	8	2	8	2	7	1	8	9	1	6	2	7	3	5	2	8	0	3	9	7	4	3	9	7	0
	7	5	7	6	8	7	9	1	2	3	0	7	3	6	5	4	3	4	4	6	8	0	4	3	3	9	2	3	3	8
	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	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	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2
	1	2	3	4	5	6	7	8	9	0	1	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9
Skin	+	+	+	+	+	+	M		+	+	+	+	M	+		+	M	M	M	+	+	M		+	M	+		+		
Parakeratosis				3																										
Tail, Hyperkeratosis							2					2																		
Tail, Necrosis, Acute				4																										
Tail, Ulcer				4								2																		
Musculoskeletal System																														
Bone	+	+	+	+	+	+	+		+	+	+	+		+	+		+	+	+	+	+	+	+		+	+	+		+	
Fibrous Osteodystrophy																														
Skeletal Muscle	+	M	+	+	+	M	M		M	M	M	+		+	+		+	M	M	M	+	M	M		+	+	+		+	
Nervous System																														
Brain	+	+	+		+	+	+		+	+	+	+		+	+		+	+	+	+	+	+	+		+	+	+		+	
Necrosis, Focal																														
Brain, Brain Stem				+																										
Respiratory System																														
Larynx	M	+	+	M	M	M	+		+	M	M	+		A	+		+	+	+	+	+	+	+		M	+	+		M	
Inflammation, Acute																														
Lung	M	+	+	+	M	+	+		+	M	+	+		+	+		+	+	+	+	+	+	+		M	+	+		M	
Alveolar Epith, Bronchiole, Hyperplasia																														
Alveolar Epith, Hyperplasia															2															
Alveolar Epith, Necrosis, Acute																														3
Alveolus, Inflammation, Acute																														3

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Species/Strain: Rat/F 344/N

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Test Compound: Wollastonite calcium silicates

CAS Number: 13983-17-0

Date Report Requested: 10/23/2014

Time Report Requested: 12:34:31

First Dose M/F: NA / NA

Lab: NORTHROP

F 344/N Rat Male CONTROL

DAY ON TEST ANIMAL ID

Table with 28 columns and 4 rows of numerical data representing animal IDs and test days.

Alimentary System

Table listing various anatomical parts of the alimentary system (Esophagus, Intestine, Liver, etc.) and their corresponding severity grades across the 28 animals.

* ..Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade
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Experiment Number: 05083-01

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Date Report Requested: 10/23/2014

Test Type: CHRONIC

Test Compound: Wollastonite calcium silicates

Time Report Requested: 12:34:32

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 13983-17-0

First Dose M/F: NA / NA

Species/Strain: Rat/F 344/N

Lab: NORTHROP

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	0	0	0	0	0	0	0	0	0			
	5	7	5	6	7	7	6	7	7	7	6	3	7	3	7	7	7	7	7	0	6	5	7	6	7	0	4	6	7	6		
ANIMAL ID	1	3	2	8	3	2	1	8	2	3	0	7	8	7	3	8	4	1	4	4	9	5	8	2	5	4	9	6	8	8	1	
	6	8	6	2	8	9	4	7	6	0	3	7	3	8	8	5	2	5	3	3	3	6	6	6	5	3	4	8	8	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	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	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
	3	3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4	4	4	5	5	5	5	5	5	5	5	5	5	5	5	
	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	
Mesentery																																
Pancreas	+	+	+	+			+	+			+	+	+	+	+	+	+	+			+	+	+	+			+	+	+	M		
Acinus, Fibrosis, Focal																																
Acinus, Hyperplasia											2																					
Artery, Polyarteritis											2																					
Atrophy															2					2												
Fibrosis															2																	
Perivascular, Inflammation, Chronic																																
Pigmentation, Hemosiderin																																
Polyarteritis																																
Salivary Glands	+	+	+	+	M	+	M	+	+	+	+	M	+	M	+	+	+	+	+			+	+	+	+	+			+	M	+	+
Duct, Metaplasia, Squamous																																
Stomach																																
Submucosa, Mineralization																																
Stomach, Forestomach	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Acanthosis, Focal											3																					
Ulcer	2																															
Stomach, Glandular	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Mineralization																																
Tongue																																
Necrosis																																
Cardiovascular System																																

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Test Type: CHRONIC

Test Compound: Wollastonite calcium silicates

Time Report Requested: 12:34:32

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 13983-17-0

First Dose M/F: NA / NA

Species/Strain: Rat/F 344/N

Lab: NORTHROP

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	0	0	0	0	0	0	0	0	0	
	5	7	5	6	7	7	6	7	7	7	6	3	7	3	7	7	7	7	7	0	6	5	7	6	7	0	4	6	7	6
ANIMAL ID	1	3	2	8	3	2	1	8	2	3	0	7	8	7	3	8	8	4	1	4	4	9	5	3	3	3	6	6	6	6
	6	8	6	2	8	9	4	7	6	0	3	7	3	8	8	5	2	5	3	3	3	6	6	6	3	3	4	8	8	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	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	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	3	3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4	4	5	5	5	5	5	5	5	5	5	5	5	5
	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	0
Heart	+	+	+	+	+	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Atrium, Mineralization				2																										
Atrium, Thrombosis																X	X											X		
Cardiomyopathy	1	3	2	3	4	3	3	3	2	2	2	2	1		3	3	2	3	4	3		3		3	2	2		3	3	3
Mineralization																														
Endocrine System																														
Adrenal Gland																														
Adrenal Gland, Cortex	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Hyperplasia, Focal					2																									
Vacuolization Cytoplasmic								3		3	2	3								2		2		2				3		2
Adrenal Gland, Medulla	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Hyperplasia		2				2							2		2	2									2					
Necrosis																														
Islets, Pancreatic					+			+																						
Hyperplasia																														
Parathyroid Gland	+	M	+	+	M	+	+	+	+	+	+	M	+	M	M	+	M	+	+	+	+	+	+	+	+	+	+	+	+	
Hyperplasia																														
Pituitary Gland	+	+	+	+	M	+	+	+	+	+	+	M	+	+	+	I	+	I	+	+	+	+	+	+	+	+	+	I	+	I
Hyperplasia		2	2								2																			
Thyroid Gland	+	M	+	+	M	+	+	+	+	+	+	M	+	M	M	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
C Cell, Hyperplasia																														

* ..Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade
 + ..Tissue examined microscopically
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CAS Number: 13983-17-0

First Dose M/F: NA / NA

Species/Strain: Rat/F 344/N

Lab: NORTHROP

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	0	0	0	0	0	0	0		
F 344/N Rat Male	5	7	5	6	7	7	6	7	7	7	6	3	7	3	7	7	7	7	7	0	6	5	7	6	7	0	4	6	7	6	
CONTROL	1	3	2	8	3	2	1	8	2	3	0	7	8	7	3	8	4	1	4	4	9	5	8	2	5	4	9	6	8	8	1
	6	8	6	2	8	9	4	7	6	0	0	3	7	3	8	8	5	2	5	3	3	6	6	6	3	3	4	8	8	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	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	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
	3	3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4	4	5	5	5	5	5	5	5	5	5	5	5	5	
	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2

Tissue NOS															+																				
Inflammation, Acute															+																				
Necrosis															2																				
Thrombosis																																			
Genital System																																			
Epididymis	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	A				
Hypospermia					2	2	2											2	2	2	2	2	2												
Preputial Gland	M	M	M	M	M	+	+	+	+	+	+	+	+	+	M	+	+	+	A	M	+	M	M	+											
Prostate	+	M	+	+	M	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	A				
Epithelium, Metaplasia, Squamous																																			
Hyperplasia, Focal							2																												
Inflammation, Acute																							2	2					3						
Inflammation, Chronic																																			
Inflammation, Chronic Active											3																								
Seminal Vesicle	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	A					
Inflammation, Acute																									3										
Inflammation, Chronic Active																																			
Testes	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	A					
Atrophy																																			
Atrophy, Diffuse																																			
Degeneration											3											2	2	2	2										
Hypospermia																																			

* ..Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade
+ ..Tissue examined microscopically M ..Missing tissue 1-4 ..Lesion qualified as:
X ..Lesion present A ..Autolysis precludes evaluation 1) Minimal 3) Moderate
I ..Insufficient tissue BLANK ..Not examined microscopically 2) Mild 4) Marked

Experiment Number: 05083-01

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Time Report Requested: 12:34:33

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 13983-17-0

First Dose M/F: NA / NA

Species/Strain: Rat/F 344/N

Lab: NORTHROP

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	0	0	0	0	0	0	0	0	0						
	5	7	5	6	7	7	6	7	7	7	6	3	7	3	7	7	7	7	7	0	6	5	7	6	7	0	4	6	7	6					
	1	3	2	8	3	2	1	8	2	3	0	7	8	7	3	8	4	1	4	4	9	5	8	2	5	4	9	6	8	8	1				
	6	8	6	2	8	9	4	7	6	0	0	3	7	3	8	8	5	2	5	3	3	3	6	6	6	3	3	4	8	8	0				
	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	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	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2				
		3	3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4	5	5	5	5	5	5	5	5	5	5	5	5	5				
		2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2			
Skin		+	+	M	+	+	+	+	+	+	M	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+				
Parakeratosis																																			
Tail, Hyperkeratosis																																			
Tail, Necrosis, Acute																																			
Tail, Ulcer																																			
Musculoskeletal System																																			
Bone		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
Fibrous Osteodystrophy																	X																		
Skeletal Muscle		+	+	M	+	M	+	M	+	+	M	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
Nervous System																																			
Brain		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Necrosis, Focal																																			2
Brain, Brain Stem																																			
Respiratory System																																			
Larynx		+	M	+	+	M	+	+	+	+	+	+	M	+	M	M	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Inflammation, Acute																																			
Lung		+	M	+	+	M	+	+	+	+	+	+	M	+	M	M	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Alveolar Epith, Bronchiole, Hyperplasia		2						3																											
Alveolar Epith, Hyperplasia																																			
Alveolar Epith, Necrosis, Acute																																			
Alveolus, Inflammation, Acute																																			

* ..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: 05083-01

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Date Report Requested: 10/23/2014

Test Type: CHRONIC

Test Compound: Wollastonite calcium silicates

Time Report Requested: 12:34:34

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 13983-17-0

First Dose M/F: NA / NA

Species/Strain: Rat/F 344/N

Lab: NORTHROP

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	0	0	0	0	0	0	0		
F 344/N Rat Male	5	7	5	6	7	7	6	7	7	7	6	3	7	3	7	7	7	7	7	0	6	5	7	6	7	0	4	6	7	6	
CONTROL	1	3	2	8	3	2	1	8	2	3	0	7	8	7	3	8	4	1	4	4	9	5	8	2	5	4	9	6	8	8	1
	6	8	6	2	8	9	4	7	6	0	0	3	7	3	8	8	5	2	5	3	3	6	6	6	3	3	4	8	8	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	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	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
	3	3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4	5	5	5	5	5	5	5	5	5	5	6	6	6	
	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2
Epithelium, Renal Tubule, Hyperplasia	2																														
Metaplasia, Osseous																															
Mineralization																															
Nephropathy	1	4	2	3	3	3	1	4	4	2	3	2	3	1		4	4	4	4	4		3	1	4	4	4		3	2	4	
Pelvis, Transit Epithe, Hyperplasia	3																														
Urinary Bladder	+	+	+	+	M	+	+	+	+	+	+	+	+	+	M	+	+	+	+	+		+	+	+	+	+		+	+	+	A
Calculus Micro Observation Only	X																														

* ..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: 05083-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Test Compound: Wollastonite calcium silicates

CAS Number: 13983-17-0

Date Report Requested: 10/23/2014

Time Report Requested: 12:34:34

First Dose M/F: NA / NA

Lab: NORTHROP

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

Alimentary System

Esophagus	+	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	61
Intestine Large, Cecum	+	A	+	+	+	+	+	A	+	+	+	A	+	+	A	A	58
Intestine Large, Colon	+	A	+	+	+	+	+	A	+	+	+	A	+	+	A	A	58
Intestine Large, Rectum	+	A	+	+	+	+	+	+	+	+	+	A	+	+	A	A	60
Intestine Small, Duodenum	+	A	+	+	+	+	+	+	+	+	+	A	+	+	A	A	60
Necrosis, Acute																	1 2.0
Intestine Small, Ileum	+	A	+	+	+	+	+	+	+	+	+	A	+	+	A	A	60
Intestine Small, Jejunum	+	A	+	+	+	+	+	+	+	+	+	A	+	+	A	A	60
Liver	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	68
Bile Duct, Hyperplasia	2				3	2	3	2							2		49 2.7
Bile Stasis																	1 3.0
Centrilobular, Necrosis												3					2 2.5
Degeneration, Cystic			2														8 2.0
Focal Cellular Change																	2 2.0
Granuloma, Focal	2																1 2.0
Hepatocyte, Hyperplasia																	1 2.0
Hepatocyte, Vacuolization Cytoplasmic																	1 2.0
Hepatocyte, Vacuolization Cytoplasmic, Diffuse																	1 3.0
Necrosis																	1 3.0
Necrosis, Focal													2				2 2.0

* ..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: 05083-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Test Compound: Wollastonite calcium silicates

CAS Number: 13983-17-0

Date Report Requested: 10/23/2014

Time Report Requested: 12:34:34

First Dose M/F: NA / NA

Lab: NORTHROP

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	
	7	6	6	5	6	7	7	5	3	5	7	4	6	6	6	6	
	3	0	7	5	7	0	6	8	7	6	5	9	2	5	8	9	
	7	0	3	1	4	5	1	2	3	8	4	9	5	3	1	8	
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	
	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
	6	6	6	6	6	6	6	7	7	7	7	7	7	7	7	7	
	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	*TOTALS
Mesentery																	1
Pancreas	+	+	+	+	M	+	+	+	+	+	+	A	+	+			58
Acinus, Fibrosis, Focal																	1 2.0
Acinus, Hyperplasia																	1 2.0
Artery, Polyarteritis																	1 2.0
Atrophy											3						4 2.3
Fibrosis							3			3							5 2.4
Perivascular, Inflammation, Chronic																	1 2.0
Pigmentation, Hemosiderin																	1 3.0
Polyarteritis																	1 2.0
Salivary Glands	+	+	+	M	+	+	+	+	M	+	+	+	M	M		M	55
Duct, Metaplasia, Squamous																	6 2.0
Stomach																	1
Submucosa, Mineralization																	1 2.0
Stomach, Forestomach	+	A	+	+	+	+	+	+	+	+	+	A	+	+		M	62
Acanthosis, Focal																	1 3.0
Ulcer															2		5 2.2
Stomach, Glandular	+	A	+	+	+	+	+	+	+	+	+	A	+	+		A	61
Mineralization								4									3 3.0
Tongue																	1
Necrosis								2									1 2.0

Cardiovascular 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

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BLANK ..Not examined microscopically

1-4 ..Lesion qualified as:

1) Minimal 3) Moderate

2) Mild 4) Marked

Experiment Number: 05083-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Test Compound: Wollastonite calcium silicates

CAS Number: 13983-17-0

Date Report Requested: 10/23/2014

Time Report Requested: 12:34:34

First Dose M/F: NA / NA

Lab: NORTHROP

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	
	7	6	6	5	6	7	7	5	3	5	7	4	6	6	6	6	
	3	0	7	5	7	0	6	8	7	6	5	9	2	5	8	9	
	7	0	3	1	4	5	1	2	3	8	4	9	5	3	1	8	
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	
	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
	6	6	6	6	6	6	6	7	7	7	7	7	7	7	7	7	
	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	*TOTALS
Heart	+	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	63
Atrium, Mineralization																	1 2.0
Atrium, Thrombosis		X									X						7
Cardiomyopathy	3	3			3	3	4	2		3	1			1			56 2.6
Mineralization							2										4 2.5
Endocrine System																	
Adrenal Gland																	2
Adrenal Gland, Cortex	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	67
Hyperplasia, Focal																	1 2.0
Vacuolization Cytoplasmic																	19 2.2
Adrenal Gland, Medulla	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	67
Hyperplasia																	6 2.0
Necrosis																	1 2.0
Islets, Pancreatic																+	7
Hyperplasia																	2 1.5
Parathyroid Gland	M	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	54
Hyperplasia																	1 2.0
Pituitary Gland	+	+	+	+	+	+	+	A	M	I	M	M	+	+	+	+	50
Hyperplasia				2			2										10 2.0
Thyroid Gland	M	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	56
C Cell, Hyperplasia																	2 2.0
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: 05083-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Test Compound: Wollastonite calcium silicates

CAS Number: 13983-17-0

Date Report Requested: 10/23/2014

Time Report Requested: 12:34:34

First Dose M/F: NA / NA

Lab: NORTHROP

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

Tissue NOS	+															7		
Inflammation, Acute																1	2.0	
Necrosis																2	2.0	
Thrombosis																1		
Genital System																		
Epididymis	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	67	
Hypospermia																2	2.0	
Preputial Gland	+	+	+	M	+	+	+	+	+	+	+	M	M	+	+	+	45	
Prostate	+	+	+	+	+	+	+	+	+	+	+	M	+	+	+	+	62	
Epithelium, Metaplasia, Squamous																1	2.0	
Hyperplasia, Focal																1	2.0	
Inflammation, Acute																5	2.4	
Inflammation, Chronic																2	2.0	
Inflammation, Chronic Active																1	3.0	
Seminal Vesicle	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	66	
Inflammation, Acute																3	2.0	
Inflammation, Chronic Active																1	4.0	
Testes	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	66	
Atrophy																1	4.0	
Atrophy, Diffuse																1	4.0	
Degeneration																2	2.1	
Hypospermia																1	2.0	

* ..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: 05083-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Test Compound: Wollastonite calcium silicates

CAS Number: 13983-17-0

Date Report Requested: 10/23/2014

Time Report Requested: 12:34:35

First Dose M/F: NA / NA

Lab: NORTHROP

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

Interstit Cell, Hyperplasia																	1	2.0
Polyarteritis																	1	2.0
Seminif Tub, Degeneration																	1	2.0
Hematopoietic System																		
Bone Marrow	+	+	+	+	+	+	+	+	M	+	+	+	+	+	+	66		
Hyperplasia							2					2				9	2.0	
Necrosis																1	3.0	
Lymph Node	M	+	+	+	+	+	+	+	M	+	+	M	+	+	+	59		
Bronchial, Depletion Cellular																1	2.0	
Pancreatic, Pigmentation																1	2.0	
Lymph Node, Mandibular Congestion	+	+	+	M	M	+	+	+	M	+	+	M	M	M	M	52		
Lymph Node, Mesenteric	M	+	+	+	+	+	+	+	+	+	+	+	+	+	+	54		
Spleen	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	67		
Fibrosis																2	2.0	
Infarct																1	2.0	
Necrosis																1	4.0	
Thymus	M	+	+	M	M	+	+	M	M	M	+	+	+	+	+	46		
Integumentary System																		
Mammary Gland	+	M	+	+	M	+	M	+	M	M	+	+	M	+	M	29		
Cyst																6		
Hyperplasia																1	2.0	

* ..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: 05083-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Test Compound: Wollastonite calcium silicates

CAS Number: 13983-17-0

Date Report Requested: 10/23/2014

Time Report Requested: 12:34:35

First Dose M/F: NA / NA

Lab: NORTHROP

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	
	7	6	6	5	6	7	7	5	3	5	7	4	6	6	6	6	
	3	0	7	5	7	0	6	8	7	6	5	9	2	5	8	9	
	7	0	3	1	4	5	1	2	3	8	4	9	5	3	1	8	
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	
	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
	6	6	6	6	6	6	6	7	7	7	7	7	7	7	7	7	
	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	*TOTALS
Skin	+	+	+	+	+	+	+	+	M	+	+	+	M	+	+	+	56
Parakeratosis																	1 3.0
Tail, Hyperkeratosis																	2 2.0
Tail, Necrosis, Acute																	1 4.0
Tail, Ulcer																	2 3.0
Musculoskeletal System																	
Bone	+	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	67
Fibrous Osteodystrophy																	2
Skeletal Muscle	+	+	+	+	+	+	+	+	M	M	+	M	M	+	+	+	48
Nervous System																	
Brain	+	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	66
Necrosis, Focal																	1 2.0
Brain, Brain Stem																	1
Respiratory System																	
Larynx	M	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	52
Inflammation, Acute								2									1 2.0
Lung	M	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	56
Alveolar Epith, Bronchiole, Hyperplasia																	3 2.3
Alveolar Epith, Hyperplasia																	1 2.0
Alveolar Epith, Necrosis, Acute																	1 3.0
Alveolus, Inflammation, Acute																	1 3.0

* ..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: 05083-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Test Compound: Wollastonite calcium silicates

CAS Number: 13983-17-0

Date Report Requested: 10/23/2014

Time Report Requested: 12:34:35

First Dose M/F: NA / NA

Lab: NORTHROP

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	
	7	6	6	5	6	7	7	5	3	5	7	4	6	6	6	6	
	3	0	7	5	7	0	6	8	7	6	5	9	2	5	8	9	
	7	0	3	1	4	5	1	2	3	8	4	9	5	3	1	8	
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	
	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
	6	6	6	6	6	6	6	7	7	7	7	7	7	7	7	7	
	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	*TOTALS
Fibrosis							2										1 2.0
Fibrosis, Focal																	2 2.0
Hyperplasia, Focal																	1 2.0
Mineralization																	1 2.0
Venule, Mineralization, Focal																	1 2.0
Nose		+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	63
Glands, Inflammation, Acute																	1 1.0
Inflammation, Acute						2											8 2.0
Lumen, Foreign Body																	2 2.0
Lumen, Inflammation, Acute																	1 1.0
Metaplasia, Focal																	1 1.0
Trachea		M	+	+	+	+	+	+	M	+	+	+	+	+	+	+	56
Special Senses System																	
Eye		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	66
Antr Chamber, Inflammation, Acute																	1 3.0
Cornea, Necrosis																	1 3.0
Lens, Degeneration																	1 1.0
Harderian Gland		M	+	M	+	+	M	+	M	M	M	+	+	M	+	+	39
Lacrimal Gland		+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	63
Inflammation, Acute																	2 2.0
Urinary System																	
Kidney		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	65

* ..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: 05083-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Test Compound: Wollastonite calcium silicates

CAS Number: 13983-17-0

Date Report Requested: 10/23/2014

Time Report Requested: 12:34:35

First Dose M/F: NA / NA

Lab: NORTHROP

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	*TOTALS
	7	6	6	5	6	7	7	5	3	5	7	4	6	6	6	6	
	3	0	7	5	7	0	6	8	7	6	5	9	2	5	8	9	
	7	0	3	1	4	5	1	2	3	8	4	9	5	3	1	8	
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	
	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
	6	6	6	6	6	6	6	7	7	7	7	7	7	7	7	7	
	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	
Epithelium, Renal Tubule, Hyperplasia																	1 2.0
Metaplasia, Osseous													2				1 2.0
Mineralization																	1 3.0
Nephropathy		4	3	1			2	4			3	4	2		3	3	58 3.0
Pelvis, Transit Epithe, Hyperplasia																	7 2.3
Urinary Bladder		+	+	+	+	I	+	+	+	+	+	+	M	+	+	+	62
Calculus Micro Observation Only																	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

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1-4 ..Lesion qualified as:

1) Minimal 3) Moderate

2) Mild 4) Marked

Experiment Number: 05083-01

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Date Report Requested: 10/23/2014

Test Type: CHRONIC

Test Compound: Wollastonite calcium silicates

Time Report Requested: 12:34:37

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 13983-17-0

First Dose M/F: NA / NA

Species/Strain: Rat/F 344/N

Lab: NORTHROP

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	0	0	0	0	0	0	0		
F 344/N Rat Male	4	7	7	0	4	7	7	7	7	6	7	4	6	0	5	6	5	6	7	3	3	7	7	7	4	0	7	7	3	6	6
10 MG/M3 24 MO	2	3	8	9	7	3	8	3	8	2	3	3	4	9	1	6	2	1	0	7	7	2	3	2	2	9	0	3	7	2	4
	2	7	8	4	9	7	7	7	7	8	7	1	9	4	5	9	7	7	3	4	4	6	7	6	2	4	0	7	4	3	6

Ulcer																												3		
Ulcer, Focal																												2		
Stomach, Glandular Submucosa, Inflammation, Chronic Active	+	+	+		+	+	+	+	+	+	+	+	+	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+
Cardiovascular System																														
Heart	+	+	+		+	+	+	+	+	+	+	+	+	+	+	+	+	+	M	M	+	+	+	+	+	+	+	+	+	+
Atrium Lft, Valve, Thrombosis																														
Atrium, Thrombosis																												X		
Cardiomyopathy	2	3	1		2	3	3	4	3	2	4	2	3		2	3	3	1	3			2	2	3	3		3		2	2
Endocrine System																														
Adrenal Gland, Cortex Degeneration	+	+	+		+	+	M	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Degeneration, Cystic, Focal Hyperplasia																														
Hyperplasia, Focal																												2		
Vacuolization Cytoplasmic Zona Reticul, Necrosis	1		2		1			2			2		1		2					1									1	1
Adrenal Gland, Medulla Cyst, Multiple	+	+	+		+	+	M	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Hyperplasia																												1		
Islets, Pancreatic Hyperplasia																												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
A ..Autolysis precludes evaluation
BLANK ..Not examined microscopically
1-4 ..Lesion qualified as:
1) Minimal 3) Moderate
2) Mild 4) Marked

Experiment Number: 05083-01

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Date Report Requested: 10/23/2014

Test Type: CHRONIC

Test Compound: Wollastonite calcium silicates

Time Report Requested: 12:34:38

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 13983-17-0

First Dose M/F: NA / NA

Species/Strain: Rat/F 344/N

Lab: NORTHROP

F 344/N Rat Male 10 MG/M3 24 MO	DAY ON TEST																															
	0 4 2 2	0 7 3 7	0 7 8 8	0 0 9 4	0 4 7 9	0 7 3 7	0 7 8 7	0 7 3 7	0 7 8 7	0 7 3 7	0 6 2 8	0 7 3 7	0 4 3 1	0 6 0 4	0 5 1 5	0 6 2 9	0 5 2 7	0 6 1 7	0 7 3 4	0 3 7 4	0 3 7 7	0 7 2 6	0 7 3 2	0 7 2 6	0 4 2 4	0 0 9 0	0 7 3 7	0 3 7 4	0 6 2 3	0 7 4 6		
ANIMAL ID	0 0 1 0 1	0 0 1 0 2	0 0 1 0 3	0 0 1 0 4	0 0 1 0 5	0 0 1 0 6	0 0 1 0 7	0 0 1 0 8	0 0 1 0 9	0 0 1 0 0	0 0 1 0 1	0 0 1 0 2	0 0 1 0 3	0 0 1 0 4	0 0 1 0 5	0 0 1 0 6	0 0 1 0 7	0 0 1 0 8	0 0 1 0 9	0 0 1 0 0	0 0 1 0 1	0 0 1 0 2	0 0 1 0 3	0 0 1 0 4	0 0 1 0 5	0 0 1 0 6	0 0 1 0 7	0 0 1 0 8	0 0 1 0 9	0 0 1 0 0	0 0 1 0 1	
Inflammation, Chronic Active											3																		2			
Seminal Vesicle	+		+		+	+	+	+		+	+	+		+	+	A	+	+	+	+	+	+	+	+	+	A		+	+	+	+	+
Testes	+	+			+	+	+	+	+		+	+	+		+	+	+	+	+	+	+	+	+	+	+	+		+	+	+	+	+
Atrophy																												4				3
Degeneration																																
Hematopoietic System																																
Bone Marrow	+	+	+		+	+	+			+	+				+				+	+				+	+			+	+	+		
Hypercellularity																																
Lymph Node	+	+	M		M	M	M	+	M	M	M	+			+	+	+	+	+	M	+	+	+	+	+		+	+	+	+	+	
Lymph Node, Mandibular	M	+	+		+	+	+	+	M	+	M	+	+		+	+	+	+	+	+	M	+	+	+	+		+	+	+	+	+	
Hyperplasia																																
Lymph Node, Mesenteric	M	M	M	+	M	M	M	+	+	+	+	M		+	M	M	M	M	M	+	M	M	M		M	+	+	M	M	M	M	
Hyperplasia																																
Spleen	+	+	+		+	+	+	+	M	+	+	+	+		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Fibrosis																																
Fibrosis, Focal																																
Thymus	+	+	+		+		+	M	+	+	+	+	+		+	+	+	M	M	M	M	M	M	+	+		M	+	M	M	M	
Cyst, Multiple																																2
Integumentary System																																
Mammary Gland	M	M	+		+	+	M	+		M	M	M			M	+	M	M	M	M	M	M	+	+	M		M	+	M	M	+	
Cyst																																
Cyst, Multiple																																

* ..Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade
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BLANK ..Not examined microscopically
1-4 ..Lesion qualified as:
1) Minimal 3) Moderate
2) Mild 4) Marked

Experiment Number: 05083-01

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Date Report Requested: 10/23/2014

Test Type: CHRONIC

Test Compound: Wollastonite calcium silicates

Time Report Requested: 12:34:38

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 13983-17-0

First Dose M/F: NA / NA

Species/Strain: Rat/F 344/N

Lab: NORTHROP

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	0	0	0	0	0	0	0		
F 344/N Rat Male	4	7	7	0	4	7	7	7	7	6	7	4	6	0	5	6	5	6	7	3	3	7	7	7	4	0	7	7	3	6	6
10 MG/M3 24 MO	2	3	8	9	7	3	8	3	8	2	3	3	4	9	1	6	2	1	0	7	7	2	3	2	2	9	0	3	7	2	4
	2	7	8	4	9	7	7	7	7	8	7	1	9	4	5	9	7	7	3	4	4	6	7	6	2	4	0	7	4	3	6
	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	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	1	1	1	1	1	1	1	1	1	1	1	1
	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	3	3	3
	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1

Hyperplasia, Cystic																																
Skin		+	+		+	+	+	+	+		+	+		+	+	+		+	+	+	+	+	+	+		+	+	+	+	+	+	
Cyst Epithelial Inclusion																																
Dermis, Tail, Cyst, Multiple																																
Dermis, Tail, Inflammation, Acute																																
Epidermis, Tail, Cyst, Multiple																																
Hair Follicle, Atrophy																																
Sebacous GI, Hyperplasia																																
Tail, Cyst Dermoid																																
Tail, Cyst Epithelial Inclusion, Multiple																																
Tail, Hyperkeratosis																																
Musculoskeletal System																																
Bone		+	+	+		+	+	+	+	+	+		+	+	+		+	+	+	+	+	+	+		+	+	+	+	+	+	+	
Skeletal Muscle		+	M	+		M	+	+	+	+	M	M	+		M	+	M	+	M	+	M	+	+	+	+		M	+	+	+	+	
Nervous System																																
Brain		+	+	+		+	+	+	+	+	+	+	+	+	+	+	+	M	+	+	+	+	+		+	+	+	+	+	+	+	
Gliosis, Focal																																
Medulla, Hemorrhage																																
Brain, Cerebrum																																
Respiratory System																																
Larynx		+	+	+		+	M	+	M	+	+		+	+		+	+	+	+	+	M	M	+	M	+	+		M	+	M	+	+

* ..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: 05083-01

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Date Report Requested: 10/23/2014

Test Type: CHRONIC

Test Compound: Wollastonite calcium silicates

Time Report Requested: 12:34:39

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 13983-17-0

First Dose M/F: NA / NA

Species/Strain: Rat/F 344/N

Lab: NORTHROP

F 344/N Rat Male 10 MG/M3 24 MO	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	0		
ANIMAL ID	4	7	7	0	4	7	7	7	7	6	7	4	6	0	5	6	5	6	7	3	3	7	7	7	4	0	7	7	3	6	6
	2	3	8	9	7	3	8	3	8	2	3	3	4	9	1	6	2	1	0	7	7	2	3	2	2	9	0	3	7	2	4
	2	7	8	4	9	7	7	7	7	8	7	1	9	4	5	9	7	7	3	4	4	6	7	6	2	4	0	7	4	3	6
Harderian Gland	M		+			M	+	M	M	M	M	+			M	M				+	+	M			+				+	M	M
Lacrimal Gland	+	+			+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	M	+	+	+	+		+	+	+	+	+	+
Urinary System																															
Kidney	+	+	+		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Epithelium, Papilla, Pelvis, Hyperplasia		1	1																												
Epithelium, Pelvis, Hyperplasia										3									2												
Inflammation, Acute																															
Mineralization										2									1												
Nephropathy	2	4	4		4	2	4	4		4	1	2		2	1		1			1	4	3	2	1			4	4	2	3	
Papilla, Necrosis, Acute										2																					
Urethra		+					+																								
Urinary Bladder	+		+		+	+	+	+	+	+	+	+		+	+	+	+	M	+	+	+	+		+		+	M	+	+	+	
Mucosa, Hyperplasia, Diffuse										2																					
Mucosa, Inflammation, Acute										2																					
Submucosa, Inflammation, Chronic										2																					
Transit Epithe, Hyperplasia																															

* ..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: 05083-01

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Date Report Requested: 10/23/2014

Test Type: CHRONIC

Test Compound: Wollastonite calcium silicates

Time Report Requested: 12:34:39

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 13983-17-0

First Dose M/F: NA / NA

Species/Strain: Rat/F 344/N

Lab: NORTHROP

F 344/N Rat Male 10 MG/M3 24 MO	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		
		6	6	4	6	7	7	7	6	3	6	7	7	0	6	7	0	6	2	0	6	5	7	6	3	7	7	7	7	4	
		0	5	2	6	5	8	3	2	7	8	1	8	1	9	2	8	9	4	2	9	1	6	3	4	7	8	3	6	8	7
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	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	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
3	3	3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4	4	5	5	5	5	5	5	5	5	5	6	6	6	6
2	3	4	5	6	7	8	9	0	2	3	4	5	6	7	8	9	0	1	2	3	5	6	7	8	9	0	1	2	3	4	

Alimentary System

Esophagus	+	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	
Intestine Large																															
Intestine Large, Cecum	A	+	+	+	A	+	I	A	+	A	+	+	+	A	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	
Submucosa, Necrosis, Acute, Focal																															
Intestine Large, Colon	A	+	+	+	A	+	I	A	+	A	+	+	+	A	+	+	A	A	+	+	+	+	+	+	+	+	+	+	+	+	
Ulcer, Focal																															
Intestine Large, Rectum	+	+	+	+	A	+	I	A	+	A	+	+	+	A	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	
Intestine Small																															
Intestine Small, Duodenum	A	+	+	+	A	+	I	A	+	+	+	+	+	A	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	
Intestine Small, Ileum	A	+	A	+	A	+	I	A	+	A	+	+	+	A	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	
Intestine Small, Jejunum	A	+	+	+	A	+	I	A	+	A	+	+	+	A	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	
Liver	+	+	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Basophilic Focus																															
Bile Duct, Hyperplasia	2		3		2	3				3				3		3	1		3	2	2	2	2	2	3		2	3			
Bile Stasis																															
Degeneration, Cystic			2																			2			2						
Degeneration, Cystic, Focal																															
Hepatocyte, Necrosis, Acute, Focal																															
Hepatocyte, Necrosis, Focal																															
Hepatocyte, Vacuolization Cytoplasmic																															
Hepatodiaphragmatic Nodule																															

* ..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: 05083-01

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Date Report Requested: 10/23/2014

Test Type: CHRONIC

Test Compound: Wollastonite calcium silicates

Time Report Requested: 12:34:40

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 13983-17-0

First Dose M/F: NA / NA

Species/Strain: Rat/F 344/N

Lab: NORTHROP

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	0	0	0	0	0	0	0	
F 344/N Rat Male	6	6	4	6	7	7	7	6	3	6	7	7	7	0	6	7	0	6	2	0	6	5	7	6	3	7	7	7	7	4
10 MG/M3 24 MO	0	5	2	6	5	8	3	2	7	8	1	8	1	9	2	8	9	4	2	9	1	6	3	4	7	8	3	6	8	7
	3	5	2	8	1	7	6	7	4	1	6	8	5	4	3	7	4	9	3	4	2	9	7	9	4	8	7	5	7	9

Necrosis																														
Necrosis, Coagulative, Focal																														
Necrosis, Focal																														
Necrosis, Multifocal																														
Periportal, Necrosis																														
Vacuolization Cytoplasmic																														
Mesentery																														
Fat, Necrosis, Acute																														
Pancreas	+	+	+	+	A		+	M	+	+	+	+	+		+		+	A		+	+	+	+	+	+	+	+	+	+	+
Acinus, Fibrosis, Focal																														
Atrophy																														
Duct, Inflammation, Chronic																														
Fibrosis																														
Fibrosis, Focal	1	2																												
Salivary Glands	+	+	+	+	A	+	+	M	M	+		+	+		A	+		+	+		+	+	+	+	+	+	+	+	+	
Duct, Metaplasia, Squamous																														
Stomach, Forestomach	+	+	+	+	A	+	I	A	+		+	+		A	+		+	A		+	+	+	+	+	+	+	+	+	+	
Acanthosis																														
Edema																														
Epithelium, Hyperplasia																														
Hyperkeratosis																														
Inflammation, Acute																														
Submucosa, Inflammation, Acute																														

* ..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: 05083-01

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Date Report Requested: 10/23/2014

Test Type: CHRONIC

Test Compound: Wollastonite calcium silicates

Time Report Requested: 12:34:40

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 13983-17-0

First Dose M/F: NA / NA

Species/Strain: Rat/F 344/N

Lab: NORTHROP

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	0	0	0	0	0	0	0	
F 344/N Rat Male	6	6	4	6	7	7	7	6	3	6	7	7	7	0	6	7	0	6	2	0	6	5	7	6	3	7	7	7	7	4
10 MG/M3 24 MO	0	5	2	6	5	8	3	2	7	8	1	8	1	9	2	8	9	4	2	9	1	6	3	4	7	8	3	6	8	7
	3	5	2	8	1	7	6	7	4	1	6	8	5	4	3	7	4	9	3	4	2	9	7	9	4	8	7	5	7	9

Ulcer																											2	2			
Ulcer, Focal																															
Stomach, Glandular Submucosa, Inflammation, Chronic Active	+	+	+	+	A	+	I	A	+	+	+	+	+	A	+	+	A	+	+	+	+	+	+	+	+	+	+	M	+		
Cardiovascular System																															
Heart	+	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	+	+	+	+	+	+	M	+	+	+	+	+	+		
Atrium Lft, Valve, Thrombosis	X																														
Atrium, Thrombosis																											2				
Cardiomyopathy	3	2	3		3	2	3	2		3	3	2	2		3	3		2	2		1	2	2	2		3	3		3	2	3
Endocrine System																															
Adrenal Gland, Cortex Degeneration	+	+	+	+		+		A	+	+	+	+	+		A	+		+	+		+	+	+	+	+	+	+	+	+	+	
Degeneration, Cystic, Focal																											2				
Hyperplasia																												2			
Hyperplasia, Focal																															
Vacuolization Cytoplasmic	2	2	2						2				3		2						2	1	2		2		2	2	1		
Zona Reticul, Necrosis																															
Adrenal Gland, Medulla Cyst, Multiple	+	+	+	+	+	+	+	A	+	+	+		+		A	+		+	+		+	+	+	M	+	+	+	+	+	+	
Hyperplasia																												2			
Islets, Pancreatic																												+			
Hyperplasia																												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
A ..Autolysis precludes evaluation
BLANK ..Not examined microscopically
1-4 ..Lesion qualified as:
1) Minimal 3) Moderate
2) Mild 4) Marked

Experiment Number: 05083-01

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Date Report Requested: 10/23/2014

Test Type: CHRONIC

Test Compound: Wollastonite calcium silicates

Time Report Requested: 12:34:40

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 13983-17-0

First Dose M/F: NA / NA

Species/Strain: Rat/F 344/N

Lab: NORTHROP

F 344/N Rat Male 10 MG/M3 24 MO	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	0		
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		
Inflammation, Chronic Active	6	6	4	6	7	7	7	6	3	6	7	7	7	0	6	7	0	6	2	0	6	5	7	6	3	7	7	7	7	4	
Seminal Vesicle	0	5	2	6	5	8	3	2	7	8	1	8	1	9	2	8	9	4	2	9	1	6	3	4	7	8	3	6	8	7	
Testes	3	5	2	8	1	7	3	7	4	1	6	8	5	4	3	7	4	9	3	4	2	9	7	9	4	8	7	5	7	9	
Atrophy	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	
Degeneration	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Hematopoietic System	3	3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4	5	5	5	5	5	5	5	5	5	5	6	6	6	6
Bone Marrow	2	3	4	5	6	7	8	9	0	2	3	4	5	6	7	8	9	0	1	2	3	5	6	7	8	9	0	1	2	3	4
Hypercellularity																															
Lymph Node																															
Lymph Node, Mandibular																															
Hyperplasia																															
Lymph Node, Mesenteric																															
Hyperplasia																															
Spleen																															
Fibrosis																															
Fibrosis, Focal																															
Thymus																															
Cyst, Multiple																															
Integumentary System																															
Mammary Gland																															
Cyst																															
Cyst, Multiple																															

* ..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: 05083-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Test Compound: Wollastonite calcium silicates

CAS Number: 13983-17-0

Date Report Requested: 10/23/2014

Time Report Requested: 12:34:41

First Dose M/F: NA / NA

Lab: NORTHROP

F 344/N Rat Male 10 MG/M3 24 MO	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	0										
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										
Hyperplasia, Cystic	6	6	4	6	7	7	7	6	3	6	7	7	0	6	7	0	6	2	0	6	5	7	6	3	7	7	7	7	4										
Skin	0	5	2	6	5	8	3	2	7	8	1	8	1	9	2	8	9	4	2	9	1	6	3	4	7	8	3	6	8	7									
Cyst Epithelial Inclusion	3	5	2	8	1	7	6	7	4	1	6	8	5	4	3	7	4	9	3	4	2	9	7	9	4	8	7	5	7	9									
Dermis, Tail, Cyst, Multiple	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									
Dermis, Tail, Inflammation, Acute	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1									
Epidermis, Tail, Cyst, Multiple	3	3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4	4	5	5	5	5	5	5	5	5	5	5	5	5									
Hair Follicle, Atrophy	2	3	4	5	6	7	8	9	0	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4							
Sebacaceous GI, Hyperplasia																																							
Tail, Cyst Dermoid																																							
Tail, Cyst Epithelial Inclusion, Multiple																																							
Tail, Hyperkeratosis																																							
Musculoskeletal System																																							
Bone																																							
Skeletal Muscle																																							
Nervous System																																							
Brain																																							
Gliososis, Focal																																							
Medulla, Hemorrhage																																							
Brain, Cerebrum																																							
Respiratory System																																							
Larynx																																							

* ..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: 05083-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Test Compound: Wollastonite calcium silicates

CAS Number: 13983-17-0

Date Report Requested: 10/23/2014

Time Report Requested: 12:34:42

First Dose M/F: NA / NA

Lab: NORTHROP

F 344/N Rat Male 10 MG/M3 24 MO	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				
	6	6	4	6	7	7	7	6	3	6	7	7	7	0	6	7	0	6	2	0	6	5	7	6	3	7	7	7	4			
	0	5	2	6	5	8	3	2	7	8	1	8	1	9	2	8	9	4	2	9	1	6	3	4	7	8	3	6	8	8	7	
	3	5	2	8	1	7	6	7	4	1	6	8	5	4	3	7	4	9	3	4	2	9	7	9	4	8	7	5	7	9		
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	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	1	1	1	1	1	1	1	1	1	1	1		
	3	3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4	5	5	5	5	5	5	5	5	5	5	5	5	5		
	2	3	4	5	6	7	8	9	0	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2		
Harderian Gland	+	M	+		M	M	M	M							M	+			M						M	M	+	M	M	M	+	+
Lacrimal Gland	+	+	+	+		+	+	+	+	+	+	+			+		+	+		+	+	+	+	+	+	+	+	+	+	+	+	+
Urinary System																																
Kidney		+	+	+	+	+	+	A	+	+		+	+		A	+		+			+	+	+	+	+	+	+	+	+	+	+	
Epithelium, Papilla, Pelvis, Hyperplasia																																
Epithelium, Pelvis, Hyperplasia																																
Inflammation, Acute																																
Mineralization																																
Nephropathy			2	4		3	3	2		1	2		3	4		4		1				2	4	2	2	4	4	4	4	3	4	
Papilla, Necrosis, Acute																																
Urethra																																
Urinary Bladder		+	+	+	+	+	+	+	A	+	+		+		A	+		+			+	+	+	+	+		+	+	+	+	+	
Mucosa, Hyperplasia, Diffuse																																
Mucosa, Inflammation, Acute																																
Submucosa, Inflammation, Chronic																																
Transit Epithe, Hyperplasia																																

* ..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: 05083-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Test Compound: Wollastonite calcium silicates

CAS Number: 13983-17-0

Date Report Requested: 10/23/2014

Time Report Requested: 12:34:42

First Dose M/F: NA / NA

Lab: NORTHROP

F 344/N Rat Male
10 MG/M3 24 MO

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

Alimentary System

Esophagus	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	+	63
Intestine Large																	1
Intestine Large, Cecum	+	+	+	+	+	A	+	+	+	+	+	+	A	M	+	+	57
Submucosa, Necrosis, Acute, Focal																	1 2.0
Intestine Large, Colon	+	+	+	+	+	A	+	+	+	+	+	+	A	M	+	+	54
Ulcer, Focal				1													1 1.0
Intestine Large, Rectum	+	+	+	+	+	A	+	+	+	+	+	+	A	M	+	+	58
Intestine Small																	1
Intestine Small, Duodenum	+	+	+	+	+	A	+	+	+	+	+	+	A	M	+	+	58
Intestine Small, Ileum	+	+	+	+	+	A	+	+	+	+	+	+	A	M	+	+	54
Intestine Small, Jejunum	+	+	+	+	+	A	+	+	+	+	+	+	A	M	+	+	55
Liver	+	+	+	+	+	+	+	+	+	+	+	+		+	+	+	69
Basophilic Focus																	2 2.0
Bile Duct, Hyperplasia			3	3	2	2	3	2	1	2	3	3		2	3	3	53 2.4
Bile Stasis																	1 1.0
Degeneration, Cystic																	4 1.8
Degeneration, Cystic, Focal																	1 2.0
Hepatocyte, Necrosis, Acute, Focal																	1 2.0
Hepatocyte, Necrosis, Focal																	1 1.0
Hepatocyte, Vacuolization Cytoplasmic																	2 2.5
Hepatodiaphragmatic Nodule										X							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

A ..Autolysis precludes evaluation

BLANK ..Not examined microscopically

1-4 ..Lesion qualified as:

1) Minimal 3) Moderate

2) Mild 4) Marked

Experiment Number: 05083-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Test Compound: Wollastonite calcium silicates

CAS Number: 13983-17-0

Date Report Requested: 10/23/2014

Time Report Requested: 12:34:42

First Dose M/F: NA / NA

Lab: NORTHROP

F 344/N Rat Male
10 MG/M3 24 MO

DAY ON TEST	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	6	6	6	7	6	7	5	3	7	6	7	6	5	4	5	7		
	5	2	8	8	6	2	7	7	8	8	8	0	6	2	6	6		
	5	7	3	7	9	4	4	4	7	2	7	8	1	2	6	4		
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	1	1	1	1	1	1	1	4	4		
	6	6	6	6	6	7	7	7	7	7	7	7	7	7	1	1		
	5	6	7	8	9	0	1	2	3	4	5	6	7	8	1	2	*TOTALS	
Necrosis																	1 3.0	
Necrosis, Coagulative, Focal																	1 2.0	
Necrosis, Focal								1									1 1.0	
Necrosis, Multifocal																	1 2.0	
Periportal, Necrosis																	1 2.0	
Vacuolization Cytoplasmic																	1 2.0	
Mesentery																	1	
Fat, Necrosis, Acute																	1 3.0	
Pancreas		+	+	+	+	+	A	+	+	+	+	+	+	+	M	+	+	60
Acinus, Fibrosis, Focal																		1 1.0
Atrophy						2												7 2.1
Duct, Inflammation, Chronic																		1 2.0
Fibrosis						2												10 2.3
Fibrosis, Focal																		3 1.3
Salivary Glands		+	+	+	+	+	+	+	+	+	+	+	+	+	M	+	+	58
Duct, Metaplasia, Squamous																		6 1.7
Stomach, Forestomach		+	+	+	+	+	A	+	+	+		+	+	+	M	+	+	61
Acanthosis																		1 2.0
Edema																		1 2.0
Epithelium, Hyperplasia																		1 3.0
Hyperkeratosis																		5 3.0
Inflammation, Acute																		1 3.0
Submucosa, Inflammation, Acute																		2 3.0

* ..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: 05083-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Test Compound: Wollastonite calcium silicates

CAS Number: 13983-17-0

Date Report Requested: 10/23/2014

Time Report Requested: 12:34:42

First Dose M/F: NA / NA

Lab: NORTHROP

F 344/N Rat Male 10 MG/M3 24 MO	DAY ON TEST																*TOTALS
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
ANIMAL ID	6	6	6	7	6	7	5	3	7	6	7	6	5	4	5	7	
	5	2	8	8	6	2	7	7	8	8	8	0	6	2	6	6	
	5	7	3	7	9	4	4	4	7	2	7	8	1	2	6	4	
	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	1	1	1	1	1	1	1	4	4	
	6	6	6	6	6	7	7	7	7	7	7	7	7	7	1	1	
	5	6	7	8	9	0	1	2	3	4	5	6	7	8	1	2	
Ulcer																	
Ulcer, Focal																	
Stomach, Glandular	+	+	+	+	+	A	+	+	+	+	+	+	A	M	+	+	
Submucosa, Inflammation, Chronic Active																	
Cardiovascular System																	
Heart	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	+	
Atrium Lft, Valve, Thrombosis																	
Atrium, Thrombosis																	
Cardiomyopathy	1	2	3	2	2	3	2		3	2	3	2	2	2	3		
Endocrine System																	
Adrenal Gland, Cortex	+	+	+	+	+	+	+	+	+	+	+	+	+	M	+	+	
Degeneration																	
Degeneration, Cystic, Focal																	
Hyperplasia																	
Hyperplasia, Focal																	
Vacuolization Cytoplasmic				1	2	2	2			2		2					
Zona Reticul, Necrosis																	
Adrenal Gland, Medulla	+	+	+	+	+	+	M	M	+	+	+	+	+	M			
Cyst, Multiple																	
Hyperplasia																	
Islets, Pancreatic	+			+								+					
Hyperplasia	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
A ..Autolysis precludes evaluation
BLANK ..Not examined microscopically
1-4 ..Lesion qualified as:
1) Minimal 3) Moderate
2) Mild 4) Marked

Experiment Number: 05083-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Test Compound: Wollastonite calcium silicates

CAS Number: 13983-17-0

Date Report Requested: 10/23/2014

Time Report Requested: 12:34:43

First Dose M/F: NA / NA

Lab: NORTHROP

F 344/N Rat Male
10 MG/M3 24 MO

	DAY ON TEST																		
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	6	6	6	7	6	7	5	3	7	6	7	6	5	4	5	7			
	5	2	8	8	6	2	7	7	8	8	8	0	6	2	6	6			
	5	7	3	7	9	4	4	4	7	2	7	8	1	2	6	4			
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	1	1	1	1	1	1	1	4	4			
	6	6	6	6	6	7	7	7	7	7	7	7	7	7	1	1			
	5	6	7	8	9	0	1	2	3	4	5	6	7	8	1	2			
																	*TOTALS		
Parathyroid Gland	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	+	55		
Hyperplasia																		1	2.0
Pituitary Gland	+	+	+	+	+	+	M	M	+	I	M	+	+	I	+	M	53		
Cyst, Multiple																		2	1.0
Hyperplasia	2							2										7	2.0
Thyroid Gland	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	+	56		
Cyst, Multiple																		3	1.5
General Body System																			
Tissue NOS																			9
Fat, Necrosis, Acute																		1	2.0
Genital System																			
Epididymis	+	+	+	+	+	+	+	+	+	+	+	+	+	+	M	+	67		
Hypospermia																		16	2.3
Penis																			2
Preputial Gland																			31
Prostate	+	M	+	+	+	A	+	+	+	+	+	+	+	M	+	+	64		
Hemorrhage																			2 2.0
Hyperplasia																			1 2.0
Hyperplasia, Focal	2																		1 2.0
Inflammation, Acute																			6 2.3
Inflammation, Acute, Diffuse																			1 4.0
Inflammation, Chronic																			1 2.0

* ..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: 05083-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Test Compound: Wollastonite calcium silicates

CAS Number: 13983-17-0

Date Report Requested: 10/23/2014

Time Report Requested: 12:34:43

First Dose M/F: NA / NA

Lab: NORTHROP

F 344/N Rat Male
10 MG/M3 24 MO

DAY ON TEST	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	6	6	6	7	6	7	5	3	7	6	7	6	5	4	5	7	
	5	2	8	8	6	2	7	7	8	8	8	0	6	2	6	6	
	5	7	3	7	9	4	4	4	7	2	7	8	1	2	6	4	
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	1	1	1	1	1	1	1	4	4	
	6	6	6	6	6	7	7	7	7	7	7	7	7	7	1	1	
	5	6	7	8	9	0	1	2	3	4	5	6	7	8	1	2	*TOTALS
Inflammation, Chronic Active									3								3 2.7
Seminal Vesicle	+	+	+	+		A	+	+	+	+	+	+	M		+		59
Testes	+	+	+	+	+	+	+	+	+	+	+	+	+	M	+	+	65
Atrophy																	2 3.5
Degeneration																	3 2.7
Hematopoietic System																	
Bone Marrow	+	+			+		+	+	+	+			+	M	+	+	44
Hypercellularity	2																3 2.3
Lymph Node	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	+	57
Lymph Node, Mandibular	+	+	+	+	+	+	+	+	+	+	+	+	+	M	+	+	64
Hyperplasia																	2 2.0
Lymph Node, Mesenteric	+	M	M	+	M	+	M	+	+	+		M		M	+	+	27
Hyperplasia																	1 2.0
Spleen	+	+	+	+	+	+	+	+	+	+	+	+	+	M	+	+	67
Fibrosis					2												2 2.0
Fibrosis, Focal										2							1 2.0
Thymus	M	M	+	+	M	M	+	M	+	+	+	+	+	M	M	+	37
Cyst, Multiple				X													2 2.0
Integumentary System																	
Mammary Gland	M	+	+	+		M	M	M		M	+	+	+	M	+	+	29
Cyst																	2 2.0
Cyst, Multiple																	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: 05083-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Test Compound: Wollastonite calcium silicates

CAS Number: 13983-17-0

Date Report Requested: 10/23/2014

Time Report Requested: 12:34:43

First Dose M/F: NA / NA

Lab: NORTHROP

F 344/N Rat Male
10 MG/M3 24 MO

DAY ON TEST	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	6	6	6	7	6	7	5	3	7	6	7	6	5	4	5	7			
	5	2	8	8	6	2	7	7	8	8	8	0	6	2	6	6			
	5	7	3	7	9	4	4	4	7	2	7	8	1	2	6	4			
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	1	1	1	1	1	1	1	4	4			
	6	6	6	6	6	7	7	7	7	7	7	7	7	7	1	1			
	5	6	7	8	9	0	1	2	3	4	5	6	7	8	1	2	*TOTALS		
Hyperplasia, Cystic																	1	2.0	
Skin	+	+		+	+	+	+	+	+	+	+	+	+	M	+	+	66		
Cyst Epithelial Inclusion																	1		
Dermis, Tail, Cyst, Multiple				X													1		
Dermis, Tail, Inflammation, Acute									2								1	2.0	
Epidermis, Tail, Cyst, Multiple						X											1		
Hair Follicle, Atrophy																	1	2.0	
Sebaceous GI, Hyperplasia																	1	3.0	
Tail, Cyst Dermoid																	1		
Tail, Cyst Epithelial Inclusion, Multiple																	1		
Tail, Hyperkeratosis																	2	2.5	
Musculoskeletal System																			
Bone	+	+	+	+	+	+	+	+	+	+	+	+	+	+	M	+	+	67	
Skeletal Muscle	+	+		+	+	+	+	+	+	+	+	+	+	+	M	M	+	56	
Nervous System																			
Brain	+	+	+	+	+	+		+	+	+	+	+	+	+	+	+	68		
Gliosis, Focal				2													1	2.0	
Medulla, Hemorrhage																	1	2.0	
Brain, Cerebrum								+									1		
Respiratory System																			
Larynx	+	+	+	+	+	+	+	M	+	+	+	+	+	+	M	+	+	55	

* ..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: 05083-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Test Compound: Wollastonite calcium silicates

CAS Number: 13983-17-0

Date Report Requested: 10/23/2014

Time Report Requested: 12:34:43

First Dose M/F: NA / NA

Lab: NORTHROP

F 344/N Rat Male
10 MG/M3 24 MO

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

*TOTALS

Foreign Body																	1	2.0
Inflammation, Acute																	2	1.5
Metaplasia, Squamous																	1	2.0
Lung	+	+	+	+	+	+	+	M	+	+	+	+		+	+	+	54	
Alveolus, Hemorrhage, Multifocal																	1	2.0
Atelectasis, Focal																	1	2.0
Inflammation, Chronic, Focal	2																1	2.0
Inflammation, Granulomatous, Focal																	1	2.0
Interstitialium, Fibrosis																	1	1.0
Interstitialium, Fibrosis, Focal																	2	1.0
Metaplasia, Osseous																	1	1.0
Peribronchiolr, Inflammation, Chronic Active																	1	2.0
Nose	+	+	+	+	+	A	+	+	+	+	+	+	+	M	+	+	63	
Foreign Body																	3	2.0
Inflammation, Acute																	1	2.0
Lumen, Inflammation, Acute	2						2										2	2.0
Nasolacrim Dct, Metaplasia																	1	2.0
Septum, Inflammation, Acute																	1	2.0
Trachea	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	+	58	
Special Senses System																		
Eye	+	+	+	+	+	+	+	I	+	+	+	+	+	+	+	+	66	
Anterior, Synechia																	1	2.0

* ..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: 05083-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Test Compound: Wollastonite calcium silicates

CAS Number: 13983-17-0

Date Report Requested: 10/23/2014

Time Report Requested: 12:34:43

First Dose M/F: NA / NA

Lab: NORTHROP

**F 344/N Rat Male
10 MG/M3 24 MO**

DAY ON TEST	ANIMAL ID																*TOTALS
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	6	6	6	7	6	7	5	3	7	6	7	6	5	4	5	7	
	5	2	8	8	6	2	7	7	8	8	8	0	6	2	6	6	
	5	7	3	7	9	4	4	4	7	2	7	8	1	2	6	4	
	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	1	1	1	1	1	1	1	4	4	
	6	6	6	6	6	7	7	7	7	7	7	7	7	7	1	1	
	5	6	7	8	9	0	1	2	3	4	5	6	7	8	1	2	
Harderian Gland					M		M	+	+		M	M	M	+	M		16
Lacrimal Gland	+	+	+	+	+	+	+	+	+	+	+	+	+	M	+	+	67
Urinary System																	
Kidney	+	+	+	+	+	+	+	+	+	+	+	+	+	M	+	+	66
Epithelium, Papilla, Pelvis, Hyperplasia																	2 1.0
Epithelium, Pelvis, Hyperplasia				1													3 2.0
Inflammation, Acute			2														1 2.0
Mineralization																	2 1.5
Nephropathy		3	3	4	4	3	3	2	3	2	3	3	1		4	2	57 2.8
Papilla, Necrosis, Acute																	1 2.0
Urethra																	2
Urinary Bladder	+	+	+	+	+	+	+	+	+	+		+	+	M	+	+	60
Mucosa, Hyperplasia, Diffuse																	1 2.0
Mucosa, Inflammation, Acute																	1 2.0
Submucosa, Inflammation, Chronic																	1 2.0
Transit Epithe, Hyperplasia															2		1 2.0

* ..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: 05083-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Test Compound: Wollastonite calcium silicates

CAS Number: 13983-17-0

Date Report Requested: 10/23/2014

Time Report Requested: 12:34:44

First Dose M/F: NA / NA

Lab: NORTHROP

F 344/N Rat Male 10 MG/M3 12 MO	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				
		7	6	6	0	7	0	5	4	7	5	7	0	7	7	7	6	7	5	7	7	7	5	6	7	7	0	7	3	7	7	
	ANIMAL ID	2	2	8	9	3	9	8	2	2	6	4	9	5	4	8	9	7	0	6	3	4	2	7	9	8	4	9	3	7	4	2
	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	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	3	3	3	3	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	0	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	3	3	3	
	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	

Alimentary System

Esophagus	+	+	+		+		+		+	+	+	+	+	+	+	+	+	+						+	+	+					+	M	+	+
Hyperkeratosis						2																												
Hyperplasia						2																												
Intestine Large, Cecum	A	+	+		+		+		A	+		+	A	+	M	+	+	A	+	+	A		M	+	+		+	+	+	+				
Intestine Large, Colon	A	+	+		+		+		A	+		+	A	+	M	+	+	A	+	+	A		M	+	+		+	+	+	+				
Necrosis						2																												
Ulcer, Focal						2																												
Intestine Large, Rectum	A	+	+		+		+		+	+		+	A	+	M	+	+	A	+	+	A		M	+	+		+	+	+	+				
Intestine Small, Duodenum	A	+	+		+		+		A	+		+	A	+	M	+	+	A	+	+	+		M	+	+		+	+	+	+				
Inflammation																																		
Ulcer																																		
Intestine Small, Ileum	A	+	+		+		+		A	+		+	A	+	M	+	+	A	+	+	A		M	+	+		+	+	+	+				
Hyperplasia, Focal						2																												
Mucosa, Dilatation						2																												
Intestine Small, Jejunum	A	+	+		+		+		A	+		+	A	+	M	+	+	A	+	+	A		M	+	+		+	+	+	+				
Lymphoid Tiss, Hyperplasia																																		
Liver	+	+	+		+		+		+	+		+	+	+	M	+	+	+	+	+	+		M	+	+		+	+	+	+				
Bile Duct, Hyperplasia	3					3				2					4						3	3	4	3			3	3						
Central Vein, Thrombosis																																		
Degeneration						2												3																
Degeneration, Cystic																																		

* ..Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade
+ ..Tissue examined microscopically M ..Missing tissue 1-4 ..Lesion qualified as:
X ..Lesion present A ..Autolysis precludes evaluation 1) Minimal 3) Moderate
I ..Insufficient tissue BLANK ..Not examined microscopically 2) Mild 4) Marked

Experiment Number: 05083-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Test Compound: Wollastonite calcium silicates

CAS Number: 13983-17-0

Date Report Requested: 10/23/2014

Time Report Requested: 12:34:45

First Dose M/F: NA / NA

Lab: NORTHROP

F 344/N Rat Male 10 MG/M3 12 MO	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	0	0	0	0
		7	6	6	0	7	0	5	4	7	5	7	0	7	7	7	6	7	5	7	7	7	7	5	6	7	7	0	7	3	7	7	
	ANIMAL ID	2	2	8	9	3	9	8	2	2	6	4	9	5	4	8	9	7	0	6	3	4	2	7	9	8	4	9	3	7	4	2	

Hepatocyte, Hypertrophy																																	
Hepatocyte, Vacuolization Cytoplasmic																																	
Hepatocyte, Vacuolization Cytoplasmic, Diffuse																																	
Hyperplasia																																	
Inflammation																																	
Necrosis																																	
Pancreas	A	+	+		+	+	+	+	+	+	A	+	M	+	+	A	+	+	+		M	+	+		+	+	+	+					
Acinus, Hyperplasia																																	
Atrophy																																	
Atrophy, Focal																																	
Fat, Necrosis																																	
Fibrosis																																	
Hyperplasia																																	
Salivary Glands	M	M	+	+	+		M	+	+	+	+	+	+	+	+	M	+	+		+	+	+		+	+	+		M	+	+			
Stomach, Forestomach	+	+	+	+	+	+	+	+	+	+	+	+	M	+	+	+	+	+		M	+	+		+	+	+		+	+	+	+		
Erosion																																	
Hyperkeratosis																																	
Hyperplasia																																	
Inflammation																																	
Inflammation, Acute																																	
Ulcer																																	
Stomach, Glandular	A		+	+	+	+	+	+	+	A	+	M	+	+	+	+	+	+		M	+	+		+	+	+		+	+	+	+		

* ..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: 05083-01

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Date Report Requested: 10/23/2014

Test Type: CHRONIC

Test Compound: Wollastonite calcium silicates

Time Report Requested: 12:34:45

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 13983-17-0

First Dose M/F: NA / NA

Species/Strain: Rat/F 344/N

Lab: NORTHROP

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	0	0	0	0	0	0	0		
F 344/N Rat Male	7	6	6	0	7	0	5	4	7	5	7	0	7	7	7	6	7	5	7	7	7	7	5	6	7	7	0	7	3	7	7
10 MG/M3 12 MO	2	2	8	9	3	9	8	2	2	6	4	9	5	4	8	9	7	0	6	3	4	2	7	9	8	4	9	3	7	4	2
	2	1	3	3	8	3	6	1	4	1	5	3	4	3	1	0	1	4	7	7	5	3	7	1	7	7	3	9	3	7	9
	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	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	3	3	3	3	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	0	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	3	3	3
	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	2	2	2	2	2	2	2	2	2
Mucosa, Mineralization																															
Tongue																															
Hyperplasia																															
Cardiovascular System																															
Heart																															
Atrium, Thrombosis	+	+	+		+		+		+		+		+	+	+	+	+	+	+	+	+		+	+	+		+	M	+	+	
Cardiomyopathy																															
Inflammation																															
Mineralization																															
Endocrine System																															
Adrenal Gland																															
Adrenal Gland, Cortex	A	+	+		+		+		+		+		+	+	+		+	+	+	+	+		+	+		+	+	+	+	+	
Hyperplasia																															
Vacuolization Cytoplasmic																															
Adrenal Gland, Medulla	A	+	+		+		M		+		+	+	+		+	+	+	+	+	+	+		+	+		+	+	+	+	+	
Hyperplasia																															
Mineralization																															
Islets, Pancreatic																															
Hyperplasia																															
Parathyroid Gland	+	+	+		M		+		+		+	+	+		M	+	+	+	M	+	+		+	+	+	+	+	+	+	+	
Hyperplasia																															
Pituitary Gland	M	+	+		+		+		+		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	

* ..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: 05083-01

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Date Report Requested: 10/23/2014

Test Type: CHRONIC

Test Compound: Wollastonite calcium silicates

Time Report Requested: 12:34:46

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 13983-17-0

First Dose M/F: NA / NA

Species/Strain: Rat/F 344/N

Lab: NORTHROP

F 344/N Rat Male 10 MG/M3 12 MO	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	0	0										
ANIMAL ID	7	6	6	0	7	0	5	4	7	5	7	0	7	7	7	6	7	5	7	7	7	5	6	7	7	0	7	3	7	7										
	2	2	8	9	3	9	8	2	2	6	4	9	5	4	8	9	7	0	6	3	4	2	7	9	8	4	9	3	7	4	2									
	2	1	3	3	8	3	6	1	4	1	4	3	3	4	3	1	0	1	4	7	7	5	3	7	1	7	7	3	9	3	7	9								
Hyperplasia, Focal Inflammation	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								
Seminal Vesicle Inflammation	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							
Testes Atrophy	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3							
Hyperplasia	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	3	3	3	3							
Hematopoietic System	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	1								
Hyperplasia, Focal Inflammation															3																			3						
Seminal Vesicle Inflammation	+	+	+		+		+		+		+		+	A	+	M	+	+	+	+	+	+	M		+	+	+		+	+	+									
Testes Atrophy	+	+	+		+		+		+		+		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+					
Hyperplasia			2																																					
Bone Marrow	+	M	+		+		+		+		+		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+					
Hypercellularity			3		4		4				2		3	3				3		2	4	3		4	2	2														
Hyperplasia																						2																		
Hypocellularity																						3																		
Lymph Node	+	+			+		+		+		+		+	+	+	+	+	+	+	+	+	+	+	M	+	+		+	+		+	+	+	+	+	+				
Bronchial, Angiectasis																																								
Bronchial, Ectasia			3																																					
Bronchial, Hyperplasia																																								
Congestion																																								
Ectasia			3																																					
Pancreatic, Mineralization																																								
Lymph Node, Mandibular	M	M	+		+		+		M		+		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
Bronchial, Ectasia			2																																					
Hyperplasia																																								

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+ ..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: 05083-01

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Date Report Requested: 10/23/2014

Test Type: CHRONIC

Test Compound: Wollastonite calcium silicates

Time Report Requested: 12:34:46

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 13983-17-0

First Dose M/F: NA / NA

Species/Strain: Rat/F 344/N

Lab: NORTHROP

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	0	0	0	0	0	0	0	0	
F 344/N Rat Male	7	6	6	0	7	0	5	4	7	5	7	0	7	7	7	6	7	5	7	7	7	7	5	6	7	7	0	7	3	7	7
10 MG/M3 12 MO	2	2	8	9	3	9	8	2	2	6	4	9	5	4	8	9	7	0	6	3	4	2	7	9	8	4	9	3	7	4	2
	2	1	3	3	8	3	6	1	4	1	5	3	4	3	1	0	1	4	7	7	5	3	7	1	7	7	3	9	3	7	9
	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	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	3	3	3	3	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	0	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	3	3	3
	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	0	0	0	0	0	0	0	0	0	0	0

Mesenteric, Hyperplasia	2																																
Necrosis																																	
Lymph Node, Mesenteric Congestion	M	M	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+			
Ectasia	3						3						2																				
Spleen	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+			
Ectasia												3																					
Fibrosis												3																					
Thymus	M	+	+	+	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+			
Atrophy	4						3																										
Integumentary System																																	
Mammary Gland	M	+	+	+	M	+	M	+	M	M	M	M	M	M	M	+	M	+	M	M	+	M	M	+	+	M	M	+	+	+			
Cyst																						X											
Cyst, Multiple																									X								
Hemorrhage				3																													
Inflammation																																	
Skin	M	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+			
Cyst Epithelial Inclusion												3																					
Epidermis, Cyst																									X								
Hyperkeratosis																									1								
Parakeratosis																									3								

* ..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: 05083-01

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Date Report Requested: 10/23/2014

Test Type: CHRONIC

Test Compound: Wollastonite calcium silicates

Time Report Requested: 12:34:47

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 13983-17-0

First Dose M/F: NA / NA

Species/Strain: Rat/F 344/N

Lab: NORTHROP

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	0	0	0	0	0	0	0		
F 344/N Rat Male	7	6	6	0	7	0	5	4	7	5	7	0	7	7	7	6	7	5	7	7	7	5	6	7	7	0	7	3	7	7	
10 MG/M3 12 MO	2	2	8	9	3	9	8	2	2	6	4	9	5	4	8	9	7	0	6	3	4	2	7	9	8	4	9	3	7	4	2
	2	1	3	3	8	3	6	1	4	1	5	3	4	3	1	0	1	4	7	7	5	3	7	1	7	7	3	9	3	7	9
Ulcer	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
Musculoskeletal System	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
Bone	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Hypertrophy	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
Skeletal Muscle	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	3	3	
Brain	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	3	3	
Inflammation	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	3	3	3	
Larynx	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
Inflammation	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
Lung	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
Alveolar Epith, Hyperplasia, Focal	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
Alveolus, Bronchiole, Hyperplasia, Focal	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
Alveolus, Hyperplasia	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
Alveolus, Hyperplasia, Focal	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
Atelectasis, Focal	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
Emphysema	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
Fibrosis	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
Hyperplasia	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
Inflammation	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

* ..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: 05083-01

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Date Report Requested: 10/23/2014

Test Type: CHRONIC

Test Compound: Wollastonite calcium silicates

Time Report Requested: 12:34:47

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 13983-17-0

First Dose M/F: NA / NA

Species/Strain: Rat/F 344/N

Lab: NORTHROP

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	0	0	0	0	0	0	0		
F 344/N Rat Male	7	6	6	0	7	0	5	4	7	5	7	0	7	7	7	6	7	5	7	7	7	5	6	7	7	0	7	3	7	7	
10 MG/M3 12 MO	2	2	8	9	3	9	8	2	2	6	4	9	5	4	8	9	7	0	6	3	4	2	7	9	8	4	9	3	7	4	2
	2	1	3	3	8	3	6	1	4	1	5	3	4	3	1	0	1	4	7	7	5	3	7	1	7	7	3	9	3	7	9
	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	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	3	3	3	3	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	0	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	3	3	3
	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1

Interstitialium, Fibrosis, Focal	1																													
Interstitialium, Fibrosis, Multifocal	2																													
Interstitialium, Hyperplasia																														
Interstitialium, Mineralization	2																													
Nose	+	+	+		+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Inflammation	3 2 2																													
Trachea	+		+	M	+	+	+	+	+	+	+	+	+	+	+	M	+	+		A	+	+		+	M	+	+	+	+	+
Special Senses System																														
Eye	+	+	+		+	+	+	+	+	M	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Cataract	4 3																													
Cornea, Necrosis																														
Degeneration	3 2 2																													
Inflammation																														
Harderian Gland	+	+	+	M	+	M	+	+	+	+	+	+	+	+	+	M	+	+		+	M	+		+	+	+	+	+	+	+
Lacrimal Gland	M	+	+		+	+	M	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Dilatation	3																													
Inflammation	3																													
Zymbal's Gland																														
Urinary System																														
Kidney	+	+	+		+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	+	+	+	+	+	M	+	+	+	+	+
Abscess	2																													
Epithelium, Pelvis, Hyperplasia	3 4																													

* ..Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade
+ ..Tissue examined microscopically
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1-4 ..Lesion qualified as:
1) Minimal 3) Moderate
2) Mild 4) Marked

Experiment Number: 05083-01

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Date Report Requested: 10/23/2014

Test Type: CHRONIC

Test Compound: Wollastonite calcium silicates

Time Report Requested: 12:34:48

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 13983-17-0

First Dose M/F: NA / NA

Species/Strain: Rat/F 344/N

Lab: NORTHROP

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	0	0	0	0	0	0	0			
F 344/N Rat Male	7	6	6	0	7	0	5	4	7	5	7	0	7	7	7	6	7	5	7	7	7	5	6	7	7	0	7	3	7	7		
10 MG/M3 12 MO	2	2	8	9	3	9	8	2	2	6	4	9	5	4	8	9	7	0	6	3	4	2	7	9	8	4	9	3	7	4	2	
	2	1	3	3	8	3	6	1	4	1	5	3	4	3	1	0	1	4	7	7	5	3	7	1	7	7	3	9	3	7	9	
	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	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	3	3	3	3	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	0	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	3	3	3	
	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	0	0	0	0	0	0	0	0	0	0	0	
Hyperplasia																					2		2									
Mineralization																																
Nephropathy	2	1	2		3		2		1		3		3	3	3		4	1	4	2	4	4		1	4		4		4	2		
Urinary Bladder	A	+	+		+		+		+		+		+	+	+	M	+	+	+	+	+	+		+	+	+		+	+	+	+	
Calculus Micro Observation Only																																
Hyperplasia																																
Inflammation																																
Mineralization																																

* ..Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade
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1-4 ..Lesion qualified as:
1) Minimal 3) Moderate
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Experiment Number: 05083-01

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Date Report Requested: 10/23/2014

Test Type: CHRONIC

Test Compound: Wollastonite calcium silicates

Time Report Requested: 12:34:48

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 13983-17-0

First Dose M/F: NA / NA

Species/Strain: Rat/F 344/N

Lab: NORTHROP

F 344/N Rat Male 10 MG/M3 12 MO	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			
	7	6	6	7	6	5	7	3	7	7	7	7	7	7	7	6	7	3	7	7	6	6	7	7	3	7	6	3	6	7	
	8	9	3	6	9	8	8	6	8	3	4	3	3	5	8	2	0	8	7	3	3	2	2	1	3	7	8	5	7	6	8
	7	6	4	6	0	6	8	1	7	9	5	3	8	4	7	6	7	8	3	8	7	5	7	2	8	3	8	2	3	8	0
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	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	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
	3	3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4	4	4	4	5	5	5	5	5	5	5	5	5	5	
	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2

Alimentary System

Esophagus	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
Hyperkeratosis																																					
Hyperplasia																																					
Intestine Large, Cecum	+	A	A	A	A	+	+	A	+	A	+	+	+	+	+	+	+	+	+	+	+	+	A	+	+	+	A	+	+	+	+	+	+	+	+		
Intestine Large, Colon	+	+	A	A	A	+	+	A	+	A	+	+	+	+	+	+	+	+	+	+	+	+	A	+	+	+	A	+	+	+	+	+	+	+	+		
Necrosis																																					
Ulcer, Focal																																					
Intestine Large, Rectum	+	+	A	A	A	+	+	A	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	A	+	+	+	A	+	+	+	+	+	+	+	+	
Intestine Small, Duodenum	+	+	A	A	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	A	+	+	+	A	+	+	+	+	+	+	+	+	+	
Inflammation																																					
Ulcer																																					
Intestine Small, Ileum	+	+	A	A	A	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	A	+	+	+	A	+	+	+	+	+	+	+	+	A	
Hyperplasia, Focal																																					
Mucosa, Dilatation																																					
Intestine Small, Jejunum	+	+	A	A	A	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	A	+	+	+	A	+	+	+	+	+	+	+	+	+	
Lymphoid Tiss, Hyperplasia																																					
Liver	+	+	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Bile Duct, Hyperplasia				3																																	
Central Vein, Thrombosis																																					
Degeneration								1		2	2	2			2	2											1		1	3			2	3			
Degeneration, Cystic																																					

* ..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: 05083-01

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Date Report Requested: 10/23/2014

Test Type: CHRONIC

Test Compound: Wollastonite calcium silicates

Time Report Requested: 12:34:48

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 13983-17-0

First Dose M/F: NA / NA

Species/Strain: Rat/F 344/N

Lab: NORTHROP

F 344/N Rat Male 10 MG/M3 12 MO	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	0					
	7	6	6	7	6	5	7	3	7	7	7	7	7	7	7	6	7	3	7	7	6	6	7	7	3	7	6	3	6	7				
	8	9	3	6	9	8	8	6	8	3	4	3	3	5	8	2	0	8	7	3	3	2	2	1	3	7	8	5	7	6	8			
	7	6	4	6	0	6	8	1	7	9	5	3	8	4	7	6	7	8	3	8	7	5	7	2	8	3	8	2	3	8	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	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	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3			
	3	3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4	4	4	5	5	5	5	5	5	5	5	5	5	5	5			
	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2			
Hepatocyte, Hypertrophy																																4		
Hepatocyte, Vacuolization Cytoplasmic																																		
Hepatocyte, Vacuolization Cytoplasmic, Diffuse																																	4	
Hyperplasia					3	3		2				2	4	3		3			3		3											4		
Inflammation																																		
Necrosis																																	4	
Pancreas		+	+	+	A	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	M	+	+	+
Acinus, Hyperplasia																																		
Atrophy													3		2					1														
Atrophy, Focal																																		
Fat, Necrosis																																		3
Fibrosis																																		
Hyperplasia						2			2						2																			2
Salivary Glands		+	+	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Stomach, Forestomach		+	+	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Erosion																																		2
Hyperkeratosis																																		
Hyperplasia																																		
Inflammation																																		
Inflammation, Acute																																		
Ulcer																																		
Stomach, Glandular		+	+	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	

* ..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: 05083-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Test Compound: Wollastonite calcium silicates

CAS Number: 13983-17-0

Date Report Requested: 10/23/2014

Time Report Requested: 12:34:48

First Dose M/F: NA / NA

Lab: NORTHROP

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	0	0	
F 344/N Rat Male	7	6	6	7	6	5	7	3	7	7	7	7	7	7	6	7	3	7	7	6	6	7	7	3	7	6	3	6	7		
10 MG/M3 12 MO	8	9	3	6	9	8	8	6	8	3	4	3	3	5	8	2	0	8	7	3	3	2	2	1	3	7	8	5	7	6	8
	7	6	4	6	0	6	8	1	7	9	5	3	8	4	7	6	7	8	3	8	7	5	7	2	8	3	8	2	3	8	0
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	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	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
	3	3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4	4	4	5	5	5	5	5	5	5	5	5	6	6	6
	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2

Mucosa, Mineralization

4

Tongue

Hyperplasia

Cardiovascular System

Heart

+ + + + + + A + + + + + + + + M + + + + + + + + + + + +

Atrium, Thrombosis

X X X

Cardiomyopathy

2 3 2 2 2 2 3 3 3 3 2 2 3 3 3 3 2 3 3 2 3 2 2 3 2 3 2 3 3

Inflammation

3

Mineralization

Endocrine System

Adrenal Gland

Adrenal Gland, Cortex

+ + + + + + A + + + + + + + + + + + + + + + + +

Hyperplasia

2

Vacuolization Cytoplasmic

3 1 2 2 2 1 4 2

Adrenal Gland, Medulla

+ + + + + + A + + + + + + + + + + M + + + + + +

Hyperplasia

2

Mineralization

2

Islets, Pancreatic

Hyperplasia

Parathyroid Gland

+ + + + + + A + M + + M + + + + M M M + + + M M + + M + +

Hyperplasia

4

Pituitary Gland

+ + I I + + + A + + + + + I + + + M + + + + + M + M A + +

* ..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: 05083-01

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Date Report Requested: 10/23/2014

Test Type: CHRONIC

Test Compound: Wollastonite calcium silicates

Time Report Requested: 12:34:49

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 13983-17-0

First Dose M/F: NA / NA

Species/Strain: Rat/F 344/N

Lab: NORTHROP

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	0	0	0	0	0	0	0		
F 344/N Rat Male	7	6	6	7	6	5	7	3	7	7	7	7	7	7	7	6	7	3	7	7	6	6	7	7	3	7	6	3	6	7	
10 MG/M3 12 MO	8	9	3	6	9	8	8	6	8	3	4	3	3	5	8	2	0	8	7	3	3	2	2	1	3	7	8	5	7	6	8
	7	6	4	6	0	6	8	1	7	9	5	3	8	4	7	6	7	8	3	8	7	5	7	2	8	3	8	2	3	8	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	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	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
	3	3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4	4	4	4	5	5	5	5	5	5	5	5	5	5	5
	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2
Angiectasis	2																														
Cyst, Multiple																															
Hyperplasia	2																														
Pars Distalis, Cyst																															
Pars Intermed, Hyperplasia																															
Thyroid Gland	+ + A + + + + A + + + + M + + + + M M M + + + M M + + M + +																														
Cyst																															
Cyst, Multiple	X X																														
General Body System																															
Tissue NOS	+																														
Abscess																															
Granuloma	2																														
Inflammation	4																														
Genital System																															
Epididymis	+ M +																														
Degeneration																															
Hypospermia	X X X X X X X X																														
Necrosis	4																														
Penis																															
Preputial Gland	+ M M + + + M + + + + M + + + M + M M M + +																														
Inflammation	2																														
Prostate	+ + + + + + + A + + + + + + + + + + + + + + M + + +																														

* ..Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade
+ ..Tissue examined microscopically M ..Missing tissue 1-4 ..Lesion qualified as:
X ..Lesion present A ..Autolysis precludes evaluation 1) Minimal 3) Moderate
I ..Insufficient tissue BLANK ..Not examined microscopically 2) Mild 4) Marked

Experiment Number: 05083-01
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL
 Test Compound: Wollastonite calcium silicates
 CAS Number: 13983-17-0

Date Report Requested: 10/23/2014
 Time Report Requested: 12:34:49
 First Dose M/F: NA / NA
 Lab: NORTHROP

F 344/N Rat Male 10 MG/M3 12 MO	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	0	0	
	ANIMAL ID	7	6	6	7	6	5	7	3	7	7	7	7	7	7	7	6	7	3	7	7	6	6	7	7	3	7	6	3	6	7	
		8	9	3	6	9	8	8	6	8	3	4	3	3	5	8	2	0	8	7	3	3	2	2	1	3	7	8	5	7	6	8
		7	6	4	6	0	6	8	1	7	9	5	3	8	4	7	6	7	8	3	8	7	5	7	2	8	3	8	2	3	8	0
Hyperplasia, Focal Inflammation																																
Seminal Vesicle Inflammation																																
Testes Atrophy																																
Hyperplasia																																
Hematopoietic System																																
Bone Marrow Hypercellularity																																
Hyperplasia																																
Hypocellularity																																
Lymph Node																																
Bronchial, Angiectasis																																
Bronchial, Ectasia																																
Bronchial, Hyperplasia																																
Congestion																																
Ectasia																																
Pancreatic, Mineralization																																
Lymph Node, Mandibular																																
Bronchial, Ectasia																																
Hyperplasia																																

* ..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: 05083-01

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Date Report Requested: 10/23/2014

Test Type: CHRONIC

Test Compound: Wollastonite calcium silicates

Time Report Requested: 12:34:50

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 13983-17-0

First Dose M/F: NA / NA

Species/Strain: Rat/F 344/N

Lab: NORTHROP

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	0	0	0	0	0	0	0		
F 344/N Rat Male	7	6	6	7	6	5	7	3	7	7	7	7	7	7	7	6	7	3	7	7	6	6	7	7	3	7	6	3	6	7	
10 MG/M3 12 MO	8	9	3	6	9	8	8	6	8	3	4	3	3	5	8	2	0	8	7	3	3	2	2	1	3	7	8	5	7	8	
	7	6	4	6	0	6	8	1	7	9	5	3	8	4	7	6	7	8	3	8	7	5	7	2	8	3	8	2	3	8	0

Mesenteric, Hyperplasia															2		2															
Necrosis															3																	
Lymph Node, Mesenteric Congestion	+	M	+	M	M		+	+		+	+	+	M	+	+		+	+	M	+	M	+	+	+	+	M	+	A	+	+	+	
Ectasia															2																	
Spleen	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	A	+	+	+
Thymus	+	M	M	M	M	M	+	A	M	+	+	+	M	M	M		+	+	M	M	M	+	+	+	M	M	+	M	M	+	+	
Integumentary System																																
Mammary Gland	+	+	+	M	+	+	+	+	+	+	M	M	+	M	+		+	+	M	M	M	M	M	M	+	M	+	M	M	+	M	
Cyst																																
Cyst, Multiple															X																	
Skin	+	+	+	+	+	M	+	+	+	+	M	M	+	M	+		+	+	+	+	+	M	M	+	+	+	+	M	+	+	+	
Epidermis, Cyst															X																	

* ..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: 05083-01

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Date Report Requested: 10/23/2014

Test Type: CHRONIC

Test Compound: Wollastonite calcium silicates

Time Report Requested: 12:34:50

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 13983-17-0

First Dose M/F: NA / NA

Species/Strain: Rat/F 344/N

Lab: NORTHROP

F 344/N Rat Male 10 MG/M3 12 MO	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			
		7	6	6	7	6	5	7	3	7	7	7	7	7	7	6	7	3	7	7	6	6	7	7	3	7	6	3	6	7		
		8	9	3	6	9	8	8	6	8	3	4	3	3	5	8	2	0	8	7	3	3	2	2	1	3	7	8	5	7	6	8
ANIMAL ID	7	6	4	6	0	6	8	8	1	7	9	5	3	8	4	7	6	7	8	3	8	7	2	2	8	3	8	2	3	8	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	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	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
	3	3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4	4	4	4	5	5	5	5	5	5	5	5	5	6	6	6
	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	

Ulcer

Musculoskeletal System

Bone	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	M	+	+	+	M	+	+	M	+	+	M	+	+		
Hypertrophy																																
Skeletal Muscle	+	+	+	+	+	+	+	+	+	M	M	+	M	+	+	+	+	+	+	M	M	+	+	+	+	+	+	+	+	+	+	

Nervous System

Brain	+	+	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	M	+	+	+	+	+	+	M	+	+	A	+	+		
Inflammation																						4										

Respiratory System

Larynx	+	+	+	+	+	+	+	A	+	+	+	+	M	+	+	+	+	+	+	M	M	M	+	+	+	M	M	+	+	M	+	+				
Inflammation																																				
Lung	+	+	+	+	+	+	+	A	+	+	+	+	M	+	+	+	+	+	+	+	M	M	M	+	+	+	M	M	+	+	M	+	+			
Alveolar Epith, Hyperplasia, Focal																																				
Alveolus, Bronchiole, Hyperplasia, Focal																																				
Alveolus, Hyperplasia																																				
Alveolus, Hyperplasia, Focal																																				
Atelectasis, Focal																																				
Emphysema																																				3
Fibrosis	1																																			
Hyperplasia																																			2	
Inflammation										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

A ..Autolysis precludes evaluation

BLANK ..Not examined microscopically

1-4 ..Lesion qualified as:

1) Minimal 3) Moderate

2) Mild 4) Marked

Experiment Number: 05083-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Test Compound: Wollastonite calcium silicates

CAS Number: 13983-17-0

Date Report Requested: 10/23/2014

Time Report Requested: 12:34:50

First Dose M/F: NA / NA

Lab: NORTHROP

	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	0	0	0	
F 344/N Rat Male		7	6	6	7	6	5	7	3	7	7	7	7	7	7	6	7	3	7	7	6	6	7	7	3	7	6	3	7	6	3	6	7
10 MG/M3 12 MO		8	9	3	6	9	8	8	6	8	3	4	3	3	5	8	2	0	8	7	3	3	2	2	1	3	7	8	5	7	6	8	
		7	6	4	6	0	6	8	1	7	9	5	3	8	4	7	6	7	8	3	8	7	5	7	2	8	3	8	2	3	8	0	
	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	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	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
		3	3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4	4	4	5	5	5	5	5	5	5	5	5	5	6	6	
		2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	

Interstitialium, Fibrosis, Focal																																
Interstitialium, Fibrosis, Multifocal																																
Interstitialium, Hyperplasia																																
Interstitialium, Mineralization																																
Nose		+	+	+	+	+	+	A	+	A	+	+	+	+	+		+	+	M	+	+	+	+	+	+	M	+	+	M	+	+	
Inflammation																																
Trachea		+	+	+	+	+	+	A	+	+	+	+	M	+	+		+	+	M	M	M	+	+	+	M	M	+	+	M	+	+	
Special Senses System																																
Eye		+	+	+	+	+	+	+	+	+	+	+	+	+	+		+	+	M	+	+	+	+	+	+	+	+	+	+	+	+	
Cataract					3	3				2	3	3		4	3		2		2	3	1	2	4	3			4				4	
Cornea, Necrosis			4																													
Degeneration																																
Inflammation																																
Harderian Gland		+	+	+	+	+	+	A	M	+	+	+	M	+	+		M	M	M	M	M	+	+	+	M	M	M	M	+	+	M	
Lacrimal Gland		+	+	+	+	+	+	+	+	+	+	+	M	+	+		+	+	M	+	+	+	+	+	+	M	+	+	M	+	+	
Dilatation																																
Inflammation																																
Zymbal's Gland			+																													
Urinary System																																
Kidney		+	+	+	+	+	+	A	+	+	+	+	+	+	+		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Abscess																																
Epithelium, Pelvis, Hyperplasia																																

* ..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: 05083-01

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Date Report Requested: 10/23/2014

Test Type: CHRONIC

Test Compound: Wollastonite calcium silicates

Time Report Requested: 12:34:51

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 13983-17-0

First Dose M/F: NA / NA

Species/Strain: Rat/F 344/N

Lab: NORTHROP

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	0	0	0	0	0	0	0	0					
F 344/N Rat Male	7	6	6	7	6	5	7	3	7	7	7	7	7	7	7	6	7	3	7	7	6	6	7	7	3	7	6	3	6	7					
10 MG/M3 12 MO	8	9	3	6	9	8	8	6	8	3	4	3	3	5	8	2	0	8	7	3	3	2	2	1	3	7	8	5	7	6	8				
	7	6	4	6	0	6	8	1	7	9	5	3	8	4	7	6	7	8	3	8	7	5	7	2	8	3	8	2	3	8	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	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	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3				
	3	3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4	4	4	5	5	5	5	5	5	5	5	5	5	5	5				
	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2				
Hyperplasia											3	2	3		3		4																		
Mineralization																	2					4													
Nephropathy	4	3	2	3	3	4	4		4	4		4	4	4	4		2	4	2	3	3	4	3	4	3	2	4			3	4				
Urinary Bladder	+	+	+	+	+	+	+	A	+	+	+	+	+	+	+		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+			
Calculus Micro Observation Only																																			
Hyperplasia																																			
Inflammation																																			2
Mineralization																																			3

* ..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: 05083-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Test Compound: Wollastonite calcium silicates

CAS Number: 13983-17-0

Date Report Requested: 10/23/2014

Time Report Requested: 12:34:51

First Dose M/F: NA / NA

Lab: NORTHROP

F 344/N Rat Male
10 MG/M3 12 MO

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

*TOTALS

Alimentary System

Esophagus	M	+	+		+	+	+	+	+		+	+	+	+		60
Hyperkeratosis																1 2.0
Hyperplasia																1 2.0
Intestine Large, Cecum	+	+	+		+	+	M	+	+	+		+	+	+	+	51
Intestine Large, Colon	+	+	+		+	+	M	+	+	+		+	+	+	+	52
Necrosis																1 2.0
Ulcer, Focal																1 2.0
Intestine Large, Rectum	+	+	+		+	+	M	+	+	+		+	+	+	+	53
Intestine Small, Duodenum	+	+	+		+	+	M	+	+	+		+	+	+	+	55
Inflammation																1 2.0
Ulcer																1 2.0
Intestine Small, Ileum	+	+	+		+	+	M	+	+	+		+	+	+	+	52
Hyperplasia, Focal																1 2.0
Mucosa, Dilatation																1 2.0
Intestine Small, Jejunum	+	+	+		+	+	M	+	+	+		+	+	+	+	53
Lymphoid Tiss, Hyperplasia																1 2.0
Liver	+	+	+		+	+	M	+	+	+		+	+	+	+	63
Bile Duct, Hyperplasia																13 2.9
Central Vein, Thrombosis										X						1
Degeneration				2		2					3					17 2.1
Degeneration, Cystic																1 3.0

* ..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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BLANK ..Not examined microscopically

1-4 ..Lesion qualified as:

1) Minimal 3) Moderate

2) Mild 4) Marked

Experiment Number: 05083-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Test Compound: Wollastonite calcium silicates

CAS Number: 13983-17-0

Date Report Requested: 10/23/2014

Time Report Requested: 12:34:51

First Dose M/F: NA / NA

Lab: NORTHROP

F 344/N Rat Male
10 MG/M3 12 MO

DAY ON TEST	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3	5	7	0	7	7	7	6	7	6	3	5	6	7	0		
	7	1	8	9	8	8	1	4	9	5	7	9	4	8	9		
	3	4	7	3	7	8	6	3	1	4	4	3	1	1	8	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	
	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
	6	6	6	6	6	6	6	7	7	7	7	7	7	7	7	7	
	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	*TOTALS
Hepatocyte, Hypertrophy																	1 4.0
Hepatocyte, Vacuolization Cytoplasmic																	1 3.0
Hepatocyte, Vacuolization Cytoplasmic, Diffuse																	1 4.0
Hyperplasia					3	3											16 3.1
Inflammation		1															1 1.0
Necrosis																	2 4.0
Pancreas	+	+	+		+	+	M	+	+	+		+	+	+	+	58	
Acinus, Hyperplasia																	1 2.0
Atrophy	2							2	2	3							11 2.2
Atrophy, Focal																	1 2.0
Fat, Necrosis																	1 3.0
Fibrosis				2													1 2.0
Hyperplasia				2								3	3				10 2.2
Salivary Glands	M	+	+		+	+	M	M	+	+		M	+	M	+	51	
Stomach, Forestomach	+	+	+		+	+	M	+	+	+		+	+	+	+	63	
Erosion																	2 2.5
Hyperkeratosis																	2 2.5
Hyperplasia																	2 2.0
Inflammation				2													1 2.0
Inflammation, Acute																	1 2.0
Ulcer								2									2 2.0
Stomach, Glandular	+	+	+		+	+	M	+	+	+		+	+	+	+	60	

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

+ ..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: 05083-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Test Compound: Wollastonite calcium silicates

CAS Number: 13983-17-0

Date Report Requested: 10/23/2014

Time Report Requested: 12:34:51

First Dose M/F: NA / NA

Lab: NORTHROP

F 344/N Rat Male
10 MG/M3 12 MO

DAY ON TEST	ANIMAL ID																*TOTALS	
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	3	5	7	0	7	7	7	7	6	7	6	3	5	6	7	0		
	7	1	8	9	8	8	1	4	9	5	7	7	9	4	8	9		
	3	4	7	3	7	8	6	3	1	4	4	3	1	1	8	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		
	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3		
	6	6	6	6	6	6	6	7	7	7	7	7	7	7	7	7		
	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8		
Mucosa, Mineralization																	4	3.0
Tongue								+				+					4	
Hyperplasia																	1	2.0
Cardiovascular System																		
Heart	M	+	+		+	+	+	+	+			+	+	+	+	63		
Atrium, Thrombosis								X		X							8	1.5
Cardiomyopathy		2	3		3	3	3	3	3	3			2	2	2	60	2.6	
Inflammation																	1	3.0
Mineralization									2								1	2.0
Endocrine System																		
Adrenal Gland																	0	
Adrenal Gland, Cortex	+	+	+		+	+	+	+	+	+		+	+	+	+	63		
Hyperplasia																	2	2.0
Vacuolization Cytoplasmic		1							4								16	2.2
Adrenal Gland, Medulla	+		+		+	+	+	+	+	+		+	+	+	+	60		
Hyperplasia									2					2			16	2.1
Mineralization																	1	2.0
Islets, Pancreatic	+		+						+								8	
Hyperplasia	2																2	2.0
Parathyroid Gland	M	+	+		+	+	+	+	+	+		M	+	+	+	52		
Hyperplasia					2					2	2						7	2.9
Pituitary Gland	+	+	+		+	+	+	+	+	+		+	+	+	+	56		

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

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1-4 ..Lesion qualified as:

1) Minimal 3) Moderate

2) Mild 4) Marked

Experiment Number: 05083-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Test Compound: Wollastonite calcium silicates

CAS Number: 13983-17-0

Date Report Requested: 10/23/2014

Time Report Requested: 12:34:52

First Dose M/F: NA / NA

Lab: NORTHROP

F 344/N Rat Male
10 MG/M3 12 MO

DAY ON TEST	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3	5	7	0	7	7	7	7	6	7	6	3	5	6	7	0	
	7	1	8	9	8	8	1	4	9	5	7	7	9	4	8	9	
	3	4	7	3	7	8	6	3	1	4	4	3	1	1	8	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	
	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
	6	6	6	6	6	6	6	7	7	7	7	7	7	7	7	7	
	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	*TOTALS
Angiectasis																	1 2.0
Cyst, Multiple																	1
Hyperplasia				3						4							9 2.4
Pars Distalis, Cyst																	1
Pars Intermed, Hyperplasia																	1 2.0
Thyroid Gland		M	+	+		+	+	A	+	+	+		M	+	+	+	52
Cyst																	1 1.0
Cyst, Multiple										X				X			4
General Body System																	
Tissue NOS					+												7
Abscess																	1 3.0
Granuloma																	1 2.0
Inflammation																	1 4.0
Genital System																	
Epididymis		+	+	+		+	+	M	+	+	+		+	+	+	+	65
Degeneration																	1 3.0
Hypospermia					X		X	X			X	X			X		25 4.0
Necrosis																	1 4.0
Penis																	1
Preputial Gland		+	M	M		M	+	M	+	+	+		+	+	+	+	45
Inflammation																	1 2.0
Prostate		+	+	+		+	+	M	+	+	+		+	+	+	+	62

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+ ..Tissue examined microscopically

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1-4 ..Lesion qualified as:

1) Minimal 3) Moderate

2) Mild 4) Marked

Experiment Number: 05083-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Test Compound: Wollastonite calcium silicates

CAS Number: 13983-17-0

Date Report Requested: 10/23/2014

Time Report Requested: 12:34:52

First Dose M/F: NA / NA

Lab: NORTHROP

F 344/N Rat Male
10 MG/M3 12 MO

	DAY ON TEST																	
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	3	5	7	0	7	7	7	7	6	7	6	3	5	6	7	0		
	7	1	8	9	8	8	1	4	9	5	7	7	9	4	8	9		
	3	4	7	3	7	8	6	3	1	4	4	3	1	1	8	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		
	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3		
	6	6	6	6	6	6	6	7	7	7	7	7	7	7	7	7		
	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8		
																	*TOTALS	
Hyperplasia, Focal																	1	3.0
Inflammation																	11	2.8
Seminal Vesicle	+	+	+		+	+	M	+	+	+		+	+	+	+	61		
Inflammation																	1	2.0
Testes	+	+	+		+	+	M	+	+	+		+	+	+	+	65		
Atrophy																	2	3.5
Hyperplasia																	4	2.0
Hematopoietic System																		
Bone Marrow	+	+	+		+	+	+	+	+	+		+	+	+	+	59		
Hypercellularity																	14	3.0
Hyperplasia																	1	2.0
Hypocellularity																	1	3.0
Lymph Node	M	+	+		+	+	+	+	+	+		M	+	+	+	56		
Bronchial, Angiectasis																	2	3.5
Bronchial, Ectasia																	2	2.5
Bronchial, Hyperplasia																	2	2.0
Congestion																	1	2.0
Ectasia																	1	3.0
Pancreatic, Mineralization																	1	3.0
Lymph Node, Mandibular	M	+	+		+	+	+	M		+		M	+	M	+	52		
Bronchial, Ectasia																	1	2.0
Hyperplasia																	6	1.8

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+ ..Tissue examined microscopically

X ..Lesion present

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1-4 ..Lesion qualified as:

1) Minimal 3) Moderate

2) Mild 4) Marked

Experiment Number: 05083-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Test Compound: Wollastonite calcium silicates

CAS Number: 13983-17-0

Date Report Requested: 10/23/2014

Time Report Requested: 12:34:52

First Dose M/F: NA / NA

Lab: NORTHROP

F 344/N Rat Male
10 MG/M3 12 MO

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

Mesenteric, Hyperplasia																	3	2.0
Necrosis																	1	3.0
Lymph Node, Mesenteric Congestion	M	+	+		+	+	+	+		+		+	+	+	+	48		
Ectasia																	3	2.7
Hyperplasia					2												1	2.0
Spleen	+	+	+		+	+	+	+	+		+	+	+	+			64	
Ectasia																	1	3.0
Fibrosis																	1	3.0
Thymus	M	+	+		M	+	M	+	M	+		+	+	M	M	36		
Atrophy																	2	3.5
Integumentary System																		
Mammary Gland	M	+	+		+	+	M	M	+	M		+	+	+	+	36		
Cyst																	1	
Cyst, Multiple																	2	
Hemorrhage																	1	3.0
Inflammation									4								1	4.0
Skin	+	+	+		+	+	+	+	+	M		+	+	+	+	55		
Cyst Epithelial Inclusion																	1	3.0
Epidermis, Cyst																	2	
Hyperkeratosis																	1	1.0
Parakeratosis																	1	3.0

* ..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: 05083-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Test Compound: Wollastonite calcium silicates

CAS Number: 13983-17-0

Date Report Requested: 10/23/2014

Time Report Requested: 12:34:52

First Dose M/F: NA / NA

Lab: NORTHROP

F 344/N Rat Male
10 MG/M3 12 MO

DAY ON TEST	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3	5	7	0	7	7	7	7	6	7	6	3	5	6	7	0	
	7	1	8	9	8	8	1	4	9	5	7	7	9	4	8	9	
	3	4	7	3	7	8	6	3	1	4	4	3	1	1	8	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	
	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
	6	6	6	6	6	6	6	7	7	7	7	7	7	7	7	7	
	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	*TOTALS
Ulcer																	1 1.0
Musculoskeletal System																	
Bone		+	+	+		+	+	+	+	+		+	+	+	+		61
Hypertrophy																	1 3.0
Skeletal Muscle		+	+	+		+	+	+	+	+	M		+	+	+	+	55
Nervous System																	
Brain		M	+	+		+	+	+	+	+		+	+	+	+		61
Inflammation																	1 4.0
Respiratory System																	
Larynx		M	+	+		+	+	+	+	+		M	+	+	+		50
Inflammation																	1 2.0
Lung		M	+	+		+	+	+	+	+		M	+	+	+		54
Alveolar Epith, Hyperplasia, Focal																	1 2.0
Alveolus, Bronchiole, Hyperplasia, Focal																	1 2.0
Alveolus, Hyperplasia																	2 1.5
Alveolus, Hyperplasia, Focal																	1 2.0
Atelectasis, Focal																	2
Emphysema																	1 2.0
Fibrosis																	1 3.0
Fibrosis																	2 2.0
Fibrosis																	2 2.0
Hyperplasia																	4 2.0
Hyperplasia																	2 2.0
Hyperplasia																	5 2.0
Inflammation																	1 2.0

* ..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: 05083-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Test Compound: Wollastonite calcium silicates

CAS Number: 13983-17-0

Date Report Requested: 10/23/2014

Time Report Requested: 12:34:53

First Dose M/F: NA / NA

Lab: NORTHROP

F 344/N Rat Male
10 MG/M3 12 MO

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

*TOTALS

Interstitialium, Fibrosis, Focal																	1	1.0
Interstitialium, Fibrosis, Multifocal																	1	2.0
Interstitialium, Hyperplasia																	1	2.0
Interstitialium, Mineralization																	1	2.0
Nose	M	+	+		+	+	+	+	+	+		+	+	+	+	60		
Inflammation																	4	2.5
Trachea	M	+	+		+	+	+	+	+	+		M	+	+	+	52		
Special Senses System																		
Eye		+	+	+		+	+	+	+	+	+		+	+	+	+	65	
Cataract																	18	2.9
Cornea, Necrosis																	1	4.0
Degeneration																	3	2.3
Inflammation																	1	3.0
Harderian Gland	M	+	+		M	+	+	M	+	+		+	+	+	M	46		
Lacrimal Gland	M	+	+		+	+	+	+	+	+		+	+	+	+	60		
Dilatation																	1	3.0
Inflammation																	1	3.0
Zymbal's Gland																	1	
Urinary System																		
Kidney		+	+	+		+	+	M	+	+	+		+	+	+	+	62	
Abscess																	1	2.0
Epithelium, Pelvis, Hyperplasia																	2	3.5

* ..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: 05083-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Test Compound: Wollastonite calcium silicates

CAS Number: 13983-17-0

Date Report Requested: 10/23/2014

Time Report Requested: 12:34:53

First Dose M/F: NA / NA

Lab: NORTHROP

F 344/N Rat Male
10 MG/M3 12 MO

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

*TOTALS

Hyperplasia																	7	2.7
Mineralization																	2	3.0
Nephropathy			2	4		4	4		4	4	3		2	2	3	4	58	3.1
Urinary Bladder	+	+	+		+	+	M	+	+	+		+	+	+	+	63		
Calculus Micro Observation Only																	1	
Hyperplasia																	1	3.0
Inflammation									3								2	2.5
Mineralization																	1	3.0

* ..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: 05083-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Test Compound: Wollastonite calcium silicates

CAS Number: 13983-17-0

Date Report Requested: 10/23/2014

Time Report Requested: 12:34:53

First Dose M/F: NA / NA

Lab: NORTHROP

F 344/N Rat Male 10 MG/M3ASBESTOS	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	0			
	7	7	3	7	0	7	0	7	7	7	7	5	7	3	7	7	7	5	3	0	7	7	5	4	6	7	6	7	5	7	6	
	1	1	8	8	9	8	9	8	3	3	3	6	1	7	8	8	3	9	7	9	8	8	4	5	4	4	8	9	5	6		
	9	6	7	7	4	8	4	8	8	2	8	5	2	4	1	7	8	6	4	4	9	8	7	3	9	9	7	9	7	6	4	1
	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	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	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	3	3	3	
	1	2	3	4	5	6	7	8	9	0	1	2	3	4	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	

Alimentary System

Esophagus	+	+	+	+		+		+	+	+	M	+	M	M	+	+	M	+	+		+	+	+		+	+	+	+	+	+	+		
Intestine Large, Cecum	A	A	+	+		+		+	A	A	+	A	A	+	+	+	+	+	+		+	+	+		A	+	+	+	+	+	+		
Intestine Large, Colon	+	A	+	+		+		+	A	A	+	A	A	+	+	+	+	+	+		+	+	+		A	+	+	+	A	+	+		
Mucosa, Submucosa, Inflammation																																	
Intestine Large, Rectum	A	A	+	+		+		+	A	A	+	A	A	+	+	+	+	+	+		+	+	+		A	+	+	+	+	+	+		
Intestine Small, Duodenum	A	A	+	+		+		+	A	+	+	A	A	+	+	+	+	+	+		+	+	+		A	+	+	+	+	+	+		
Intestine Small, Ileum	A	A	+	+		+		+	+	+	+	A	A	+	+	+	+	+	M		+	+	+		A	+	+	+	+	+	+		
Intestine Small, Jejunum	A	A	+	+		+		+	A	+	+	A	A	+	+	+	+	+	M		+	+	+		A	+	+	+	A	+	+		
Liver	+	+	+	+		+		+	+	+	+	A	+	+	+	+	+	+	M		+	+	+		+	+	+	+	+	+	+		
Bile Duct, Hyperplasia	3	4				3		3	2	3			3			2					2	2			2	2	2	3	2	2			
Bile Duct, Inflammation																																	
Bile Duct, Proliferation														2																			
Centrilobular, Necrosis	3	3											3																				
Clear Cell Focus																																	
Degeneration, Cystic						2						2													2								
Degeneration, Cystic, Focal																																	
Hepatocyte, Vacuolization Cytoplasmic																																	
Hepatodiaphragmatic Nodule																																	
Necrosis, Focal																																	
Necrosis, Multifocal																																	
Vein, Thrombosis																																	

* ..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: 05083-01

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Date Report Requested: 10/23/2014

Test Type: CHRONIC

Test Compound: Wollastonite calcium silicates

Time Report Requested: 12:34:54

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 13983-17-0

First Dose M/F: NA / NA

Species/Strain: Rat/F 344/N

Lab: NORTHROP

F 344/N Rat Male 10 MG/M3ASBESTOS	DAY ON TEST																												
	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	
ANIMAL ID	00401	00402	00403	00404	00405	00406	00407	00408	00409	00410	00411	00412	00413	00414	00415	00416	00417	00418	00419	00420	00421	00422	00423	00424	00425	00426	00427	00428	
Pancreas	+	+	+	+	+	+	+	+	+	+	M	A	+	+	+	+	M	+	+	+	A	+	+	+	+	+	+	+	
Acinus, Atrophy		2														2	4												
Acinus, Atrophy, Focal											2																		
Acinus, Hyperplasia					2																2								
Fibrosis, Focal																													
Salivary Glands	+	+	+	+	+	+	M	+	+	+	+	M	+	+	+	+	M	+	+	+	+	+	M	+	+	+	+		
Stomach, Forestomach	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Epithelium, Hyperplasia																													
Mucosa, Ulcer																													
Submucosa, Inflammation																												2	
Submucosa, Mineralization											4																	4	
Ulcer, Focal		2										2																2	
Stomach, Glandular	+	A	+	+	+	+	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Mineralization																													
Necrosis, Focal																													
Submucosa, Mineralization											4																	4	
Cardiovascular System																													
Heart	+	+	+	+	+	+	+	+	+	+	+	+	M	+	+	+	+	M	+	+	+	+	+	+	+	+	+	+	
Atrium, Thrombosis	X	X										X															X		
Cardiomyopathy	2	3	2	3	3	2	3	4	3	3			3	2	2	3			3	4	2		2	2	3	3	2	3	2
Mineralization											3																	3	
Endocrine 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: 05083-01

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Date Report Requested: 10/23/2014

Test Type: CHRONIC

Test Compound: Wollastonite calcium silicates

Time Report Requested: 12:34:54

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 13983-17-0

First Dose M/F: NA / NA

Species/Strain: Rat/F 344/N

Lab: NORTHROP

F 344/N Rat Male 10 MG/M3ASBESTOS	DAY ON TEST																														
	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719		
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	
Adrenal Gland, Cortex	+	+	+	+		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
Hyperplasia, Focal					2																										
Vacuolization Cytoplasmic	2	2		3				2					2								2										
Adrenal Gland, Medulla	+	+	+	M	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
Hyperplasia		2						2	2				2											2						2	
Necrosis																					2										
Islets, Pancreatic		+						+					+																	+	
Parathyroid Gland	+	+	+	+	+	+	+	+	M	+	M	M	+	+	M	+	M			+	+	+		+	+	+	+	M	+	+	
Bilateral, Hyperplasia																					2		2							2	
Hyperplasia									2														2							2	
Pituitary Gland	+	+	I	+	+	+	+	I	+	+	+	+	M	+	+	+	+	M			+	+	+		M	+	+	+	+	+	
Hyperplasia	2																						2	2							
Thyroid Gland	+	+	+	+	+	+	+	A	+	M	+	M	M	+	+	M	+	M			+	+	+		+	+	+	+	A	+	+
C Cell, Hyperplasia																															
General Body System																															
Tissue NOS																															
Fat, Necrosis																															
Necrosis																															
Genital System																															
Epididymis	+	+	+	+	+	+	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Hypospermia																															
Necrosis																															

* ..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: 05083-01

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Date Report Requested: 10/23/2014

Test Type: CHRONIC

Test Compound: Wollastonite calcium silicates

Time Report Requested: 12:34:55

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 13983-17-0

First Dose M/F: NA / NA

Species/Strain: Rat/F 344/N

Lab: NORTHROP

F 344/N Rat Male 10 MG/M3ASBESTOS	DAY ON TEST																												
	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719
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
Preputial Gland	M	+	M	M	M	+	+	+	+	+	M	+	+	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	
Hyperplasia											2																		
Inflammation, Acute										3	2																		
Prostate	+	+	+	+	+	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Hyperplasia, Focal																													
Inflammation, Acute											2				2														
Inflammation, Acute, Focal																													
Inflammation, Chronic																													
Seminal Vesicle	+	+	+	+	+	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Inflammation, Acute																													
Testes	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Degeneration															2														
Interstitial Cell, Hyperplasia											2																		
Mineralization																													
Hematopoietic System																													
Bone Marrow	+	+	+	+	+	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Fibrous Osteodystrophy																													
Hyperplasia																													
Lymph Node	+	+	+	+	+	+	+	+	+	+	M	+	+	M	+	+	M	+	M	+	+	+	+	+	+	+	+	+	+
Bronchial, Ectasia																													
Bronchial, Hemorrhage																													
Pancreatic, Hyperplasia	2																												

* ..Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade
+ ..Tissue examined microscopically M ..Missing tissue 1-4 ..Lesion qualified as:
X ..Lesion present A ..Autolysis precludes evaluation 1) Minimal 3) Moderate
I ..Insufficient tissue BLANK ..Not examined microscopically 2) Mild 4) Marked

Experiment Number: 05083-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Test Compound: Wollastonite calcium silicates

CAS Number: 13983-17-0

Date Report Requested: 10/23/2014

Time Report Requested: 12:34:55

First Dose M/F: NA / NA

Lab: NORTHROP

F 344/N Rat Male 10 MG/M3ASBESTOS	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	0							
	7	7	3	7	0	7	0	7	7	7	7	5	7	3	7	7	7	5	3	0	7	7	5	4	6	7	6	7	5	7	6					
ANIMAL ID	1	1	8	8	9	8	9	8	3	3	3	6	1	7	8	8	3	9	7	9	8	8	4	5	4	4	8	9	5	7	6					
	9	6	7	7	4	8	4	8	8	2	8	5	2	4	1	7	8	6	4	4	9	7	3	9	9	7	9	7	6	4	1					
	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	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	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4				
	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	3	3	3	3				
	1	2	3	4	5	6	7	8	9	0	1	2	3	4	6	7	8	9	0	1	2	2	2	3	4	5	6	7	8	9	0	1	2			
Lymph Node, Mandibular Hyperplasia	+	+	+	+						+	M	+	+	+	+	M	+	+	+	M																
Lymph Node, Mesenteric Ectasia	M	M	M	+						+	+	+	M	+	M	M	M	+	+	M	M															
Hemorrhage Hyperplasia																																				
Spleen Necrosis	+	+	+	+						+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Thymus Necrosis	M	+	+	+						+	+	M	M	M	M	M	+	M	M	+	M															
Integumentary System																																				
Mammary Gland Cyst	M	M	M	M						M	+	M	M	+	+	M	M	M	+	+	M	+														
Skin Acanthosis, Focal Cyst Epithelial Inclusion	+	+	+	+						+	+	M	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Musculoskeletal System																																				
Bone Fibrous Osteodystrophy, Focal	+	+	+	+						+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Skeletal Muscle Degeneration Necrosis	+	+	+	+						+	+	M	+	+	+	+	M	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+

* ..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: 05083-01

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Date Report Requested: 10/23/2014

Test Type: CHRONIC

Test Compound: Wollastonite calcium silicates

Time Report Requested: 12:34:55

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 13983-17-0

First Dose M/F: NA / NA

Species/Strain: Rat/F 344/N

Lab: NORTHROP

DAY ON TEST	ANIMAL ID																														
	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719		
F 344/N Rat Male 10 MG/M3ASBESTOS	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	3	7	0	7	0	7	7	7	7	5	7	3	7	7	7	5	3	0	7	7	5	4	6	7	6	7	5	7	6
	1	1	8	8	9	8	9	8	3	3	3	6	1	7	8	8	3	9	7	9	8	8	4	5	4	4	8	9	5	6	
	9	6	7	7	4	8	4	8	8	2	8	5	2	4	1	7	8	6	4	4	9	7	3	9	9	7	9	7	6	4	1
	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	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	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	3	3	3	
	1	2	3	4	5	6	7	8	9	0	1	2	3	4	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2

Nervous System

Brain	+	+	+	+		+		+	+	+	+	+	+	+	+	+	+		+	+	+		+	+	+	+	+	+	+	+	
Hemorrhage																															
Necrosis, Multifocal																															

Respiratory System

Larynx	+	+	+	+		+		+	+	+	M	+	M	M	+	+	M	+	M		+	+	+		+	+	+	+	+	+	+	
Lung	+	+	+	+		+		+	+	+	M	+	+	M	+	+	M	+	M		+	+	+		+	+	+	+	+	+	+	
Alveolar Epith, Bronchiole, Hyperplasia	2					2				3	2					2					2				2	2	2	2	2	2		
Alveolar Epith, Hyperplasia										3																						
Alveolus, Mineralization												3																				
Bronchus, Epithelium, Hyperplasia, Focal	3																															
Inflammation, Suppurative, Acute																																
Interstitial, Fibrosis	3	3	4	3		2		3	3	3		2	2		3	2		2			2	3	2		3	3	2	3	3	2	2	
Interstitial, Mineralization																																
Metaplasia, Osseous, Focal																																
Mineralization																																2
Nose	A	+	+	+		+		+	+	+	+	+	+	M	+	+	+	+	M		+	+	+		+	+	+	+	+	+	+	
Foreign Body																																
Hemorrhage																																
Inflammation, Acute																																2
Mucosa, Hyperplasia																																2
Trachea	+	+	+	+		+		+	+	+	M	+	+	M	+	+	M	+	M		+	+	+		+	+	+	+	+	+	+	

* ..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: 05083-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Test Compound: Wollastonite calcium silicates

CAS Number: 13983-17-0

Date Report Requested: 10/23/2014

Time Report Requested: 12:34:56

First Dose M/F: NA / NA

Lab: NORTHROP

DAY ON TEST	ANIMAL ID																															
	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719	0719			
F 344/N Rat Male	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			
10 MG/M3ASBESTOS	7	7	3	7	0	7	0	7	7	7	7	5	7	3	7	7	7	5	3	0	7	7	5	4	6	7	6	7	5	7	6	
	1	1	8	8	9	8	9	8	3	3	3	6	1	7	8	8	3	9	7	9	8	8	4	5	4	4	8	9	5	7	6	
	9	6	7	7	4	8	4	8	8	2	8	5	2	4	1	7	8	6	4	4	9	7	3	9	9	7	9	7	6	4	1	
	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	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	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	3	3	3	3	
	1	2	3	4	5	6	7	8	9	0	1	2	3	4	6	7	8	9	0	1	2	2	3	4	5	6	7	8	9	0	1	2

Special Senses System

Eye	A	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Cornea, Inflammation				2																												
Harderian Gland	+	+	M	M	+	+	M	M	M	M	+	+	+	M	M	M	M	+	M	M	M	M	M	M	M	M	M	M	+	+	+	
Lacrimal Gland	+	+	+	+	+	+	+	+	+	+	+	M	+	+	+	+	M	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+

Urinary System

Kidney	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Cortex, Cyst											2																					
Nephropathy	4	3	2	4	4	4	4	4	4	3	4	2	4	4	4	3	2	4	4	2	3	2	4	4	4	4	4	4	4	4	4	
Pelvis, Inflammation, Acute																	2															
Pelvis, Transit Epithe, Hyperplasia									2				2			2				2												
Vein, Infarct																																
Vein, Thrombosis																																
Urinary Bladder	+	+	+	+	+	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	

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Experiment Number: 05083-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Test Compound: Wollastonite calcium silicates

CAS Number: 13983-17-0

Date Report Requested: 10/23/2014

Time Report Requested: 12:34:56

First Dose M/F: NA / NA

Lab: NORTHROP

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	0	0	0	0	0	0	0		
F 344/N Rat Male	6	7	7	7	6	7	6	7	6	7	7	7	6	7	5	6	5	6	6	6	4	7	7	7	7	7	0	6	7	7	6
10 MG/M3ASBESTOS	2	3	8	3	5	4	5	3	0	8	4	2	0	8	6	9	6	2	0	4	7	4	8	3	8	8	5	8	0	3	1
	8	8	9	9	6	3	6	7	0	7	3	6	4	7	5	1	5	8	7	6	7	7	8	7	8	7	0	2	5	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	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	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
	3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4	4	5	5	5	5	5	5	5	5	5	6	6	6	6	6
	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	2	3	4	5	6	7	8	9	0	1	2	3	4

Alimentary System

Esophagus	+	+	+	+	+	+	+	M	+	+	M	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
Intestine Large, Cecum	+	+	+	+	+	A	+	+	+	+	M	+	+	+	+	A	+	+	M	A	+	+	+	+	+	+	+	+	+	+	+	+	A		
Intestine Large, Colon	+	+	+	+	+	+	+	+	+	+	M	+	+	+	+	A	+	+	M	A	+	+	+	+	+	+	+	+	+	+	+	+	A		
Mucosa, Submucosa, Inflammation												4																							
Intestine Large, Rectum	+	+	+	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	+	+	+	+	+	+	A		
Intestine Small, Duodenum	+	+	+	+	+	+	+	+	+	+	M	+	+	+	+	A	+	+	M	A	+	+	+	+	+	+	+	+	+	+	+	+	+		
Intestine Small, Ileum	+	+	+	+	+	+	+	+	+	+	M	+	+	+	+	A	+	+	M	A	+	+	+	+	+	+	+	+	+	+	+	+	+		
Intestine Small, Jejunum	+	+	+	+	+	+	+	+	+	+	M	+	+	+	+	A	+	+	M	A	+	+	+	+	+	+	+	+	+	+	+	+	+		
Liver	+	+	+	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
Bile Duct, Hyperplasia	2		2						2			2		2	2	2					2	2		2											
Bile Duct, Inflammation																																			
Bile Duct, Proliferation		3																																	
Centrilobular, Necrosis																																			
Clear Cell Focus																																			
Degeneration, Cystic				2								2		2	2																				
Degeneration, Cystic, Focal																																			
Hepatocyte, Vacuolization Cytoplasmic							2						2																						
Hepatodiaphragmatic Nodule																		X									X	X							
Necrosis, Focal																																			
Necrosis, Multifocal																																			
Vein, Thrombosis															X																				

* ..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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Experiment Number: 05083-01

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Date Report Requested: 10/23/2014

Test Type: CHRONIC

Test Compound: Wollastonite calcium silicates

Time Report Requested: 12:34:56

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 13983-17-0

First Dose M/F: NA / NA

Species/Strain: Rat/F 344/N

Lab: NORTHROP

F 344/N Rat Male 10 MG/M3ASBESTOS	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	0			
ANIMAL ID	6	7	7	7	6	7	6	7	6	7	7	7	6	7	5	6	5	6	6	6	4	7	7	7	7	7	0	6	7	7	6	
	2	3	8	3	5	4	5	3	0	8	4	2	0	8	6	9	6	2	0	4	7	4	8	3	8	8	5	8	0	3	1	
	8	8	9	9	6	3	6	7	0	7	3	6	4	7	5	1	5	8	7	6	7	7	8	7	8	7	0	2	5	0	0	
Pancreas	+	+	+	+	+	+	+	+	+	M	+	+	+	M	+	+	+	M	+	+	+	+	+	+	+	+	+	+	+	A		
Acinus, Atrophy																																
Acinus, Atrophy, Focal				2																												
Acinus, Hyperplasia																																
Fibrosis, Focal																																
Salivary Glands	+	+	+	+	+	+	M	+	+	+	+	+	+	M	+	M	+	M	M	+	M	+	+	+	+	M	+	+				
Stomach, Forestomach	+	+	+	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	M	A	+	+	+	+	+	+	+	+	+	+		
Epithelium, Hyperplasia																																
Mucosa, Ulcer																																
Submucosa, Inflammation																																
Submucosa, Mineralization																																
Ulcer, Focal																																
Stomach, Glandular	+	+	+	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	M	A	+	+	+	+	+	+	+	+	+	+		
Mineralization																																
Necrosis, Focal																																
Submucosa, Mineralization																																
Cardiovascular System																																
Heart	+	+	+	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	+	+	+	+		
Atrium, Thrombosis																																
Cardiomyopathy	2	2	3	2	1	2	3	3	2	3		2	2	3	3	3	2	3														
Mineralization																																
Endocrine System																																

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Date Report Requested: 10/23/2014

Test Type: CHRONIC

Test Compound: Wollastonite calcium silicates

Time Report Requested: 12:34:56

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 13983-17-0

First Dose M/F: NA / NA

Species/Strain: Rat/F 344/N

Lab: NORTHROP

F 344/N Rat Male 10 MG/M3ASBESTOS	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	0			
ANIMAL ID	6	7	7	7	6	7	6	7	6	7	7	7	6	7	5	6	5	6	6	6	4	7	7	7	7	7	0	6	7	7	6	
	2	3	8	3	5	4	5	3	0	8	4	2	0	8	6	9	6	2	0	4	7	4	8	3	8	8	5	8	0	3	1	
	8	8	9	9	6	3	6	7	0	7	3	6	4	7	5	1	5	8	7	6	7	7	8	7	8	7	0	2	5	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	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	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
	3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4	4	5	5	5	5	5	5	5	5	5	6	6	6	6	6	
	3	4	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	2	3	4	5	6	7	8	9	0	1	2	3	4
Adrenal Gland, Cortex	+	+	+	+	+	+	+	+	+	+	M	+	+	+	+	+	+	M	M	+	+	+	+	+	+	+	+	+	+	+	+	
Hyperplasia, Focal																																
Vacuolization Cytoplasmic													2		2	2	2															
Adrenal Gland, Medulla	+	+	+	+	+	+	+	+	+	+	M	+	+	+	+	+	+	M	M	+	+	+	+	+	+	+	+	+	+	+	+	
Hyperplasia					2		2	2	2		2			2			2							2	2	2					2	
Necrosis																																
Islets, Pancreatic											+																					
Parathyroid Gland	+	M	+	+	+	+	+	+	+	+	M	+	+	+	I	+	+	+	M	M	+	M	+	+	+	+	+	+	+	+	+	
Bilateral, Hyperplasia																																
Hyperplasia				2			2	2						2																		
Pituitary Gland	+	I	+	+	+	+	+	+	+	+	M	+	+	M	M	+	I	I	M	M	+	+	+	+	+	+	+	+	+	+	+	
Hyperplasia					2																											
Thyroid Gland	+	M	+	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	M	M	+	M	+	+	+	+	+	+	+	+	+	
C Cell, Hyperplasia																																
General Body System																																
Tissue NOS																																
Fat, Necrosis																																
Necrosis																																
Genital System																																
Epididymis	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	M	M	+	+	+	+	+	+	+	+	+	+	+	
Hypospermia					2		2		2	2		2		2	2		2	2														
Necrosis																																

* ..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: 05083-01

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Date Report Requested: 10/23/2014

Test Type: CHRONIC

Test Compound: Wollastonite calcium silicates

Time Report Requested: 12:34:57

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 13983-17-0

First Dose M/F: NA / NA

Species/Strain: Rat/F 344/N

Lab: NORTHROP

F 344/N Rat Male 10 MG/M3ASBESTOS	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	0			
ANIMAL ID	6	7	7	7	6	7	6	7	6	7	7	7	6	7	5	6	5	6	6	6	4	7	7	7	7	7	0	6	7	7	6	
	2	3	8	3	5	4	5	3	0	8	4	2	0	8	6	9	6	2	0	4	7	4	8	3	8	8	5	8	0	3	1	
	8	8	9	9	6	3	6	7	0	7	3	6	4	7	5	1	5	8	7	6	7	7	8	7	8	7	0	2	5	0	0	
Preputial Gland	+	+	+	M	+	+	+	+	+	M	M	+	M	M	+	M	M	M		M		+	M	M	M	+			+	+	M	
Hyperplasia																																
Inflammation, Acute													2																			
Prostate	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		M		+	+	+	+	+			+	+	+	
Hyperplasia, Focal						2					2																					
Inflammation, Acute	2											2												2	2							
Inflammation, Acute, Focal							2																									
Inflammation, Chronic																																
Seminal Vesicle	+	+	+	+	+	+	+	+	+	+	+	+	+	M	+	+	+	+		M		+	+	+	+	+			+	+	+	
Inflammation, Acute												2																				
Testes	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		M		+	+	+	+	+			A	+	+	
Degeneration											2	2		2				2	2													
Interstitial Cell, Hyperplasia																																
Mineralization													2																			
Hematopoietic System																																
Bone Marrow	+	+	+	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+		M		+	+	+	+	+			+	+	+	
Fibrous Osteodystrophy				X																												
Hyperplasia																																
Lymph Node	+	+	+	+	M	+	+	M	+	+	M	+	+	+	+	+	+	+		M		+	+	+	+	+			+	M	+	
Bronchial, Ectasia																																
Bronchial, Hemorrhage																																
Pancreatic, Hyperplasia																																

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

Experiment Number: 05083-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Test Compound: Wollastonite calcium silicates

CAS Number: 13983-17-0

Date Report Requested: 10/23/2014

Time Report Requested: 12:34:57

First Dose M/F: NA / NA

Lab: NORTHROP

F 344/N Rat Male 10 MG/M3ASBESTOS	DAY ON TEST																																				
	0 6 2 8	0 7 3 8	0 7 8 9	0 7 3 9	0 6 5 6	0 7 4 3	0 6 5 6	0 7 3 7	0 6 0 7	0 7 8 4	0 7 2 3	0 7 4 6	0 6 0 7	0 7 8 5	0 6 6 1	0 5 6 5	0 6 2 8	0 6 0 7	0 6 4 6	0 7 7 7	0 7 4 8	0 7 3 8	0 7 8 8	0 7 8 7	0 0 5 8	0 6 8 2	0 7 0 5	0 7 3 0	0 6 3 0								
ANIMAL ID	0 0 4 3 3	0 0 4 3 4	0 0 4 3 5	0 0 4 3 6	0 0 4 3 7	0 0 4 3 8	0 0 4 3 9	0 0 4 4 0	0 0 4 4 1	0 0 4 4 2	0 0 4 4 3	0 0 4 4 4	0 0 4 4 5	0 0 4 4 6	0 0 4 4 7	0 0 4 4 8	0 0 4 5 9	0 0 4 5 0	0 0 4 5 1	0 0 4 5 2	0 0 4 5 3	0 0 4 5 4	0 0 4 5 5	0 0 4 5 6	0 0 4 6 7	0 0 4 6 8	0 0 4 6 9	0 0 4 6 0	0 0 4 6 1	0 0 4 6 2							
Lymph Node, Mandibular Hyperplasia	+	+	+	+	+	+	M	+	+	+	M	+	+	+	M	+	M	+	M	M	+	+	+	+	+	M	M	+	+	+	+	M	+	+			
Lymph Node, Mesenteric Ectasia	M	+	M	M	M	M	+	+	+	+	M	M	M	+	+	+	+	+	M	+	M	+	+	+	+	+	+	+	+	+	+	+	+	M	M		
Hemorrhage Hyperplasia																																					
Spleen Necrosis	+	+	+	+	+	+	+	+	+	+	M	+	M	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
Thymus Necrosis	M	+	M	+	+	+	+	M	+	+	M	M	+	M	M	+	M	+	M	M	M	M	+	M	+	M	+	M	+	M	+	M	+	+			
Integumentary System																																					
Mammary Gland Cyst	M	M	+	M	+	M	M	M	M	M	M	M	M	+	M	+	+	M	M	M	M	+	M	M	+	M	M	+	M	M	+	M	+	+	M		
Skin Acanthosis, Focal	M	+	M	+	+	M	+	+	+	+	M	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	M	
Cyst Epithelial Inclusion																																					
Musculoskeletal System																																					
Bone Fibrous Osteodystrophy, Focal	+	+	+	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Skeletal Muscle Degeneration	M	+	+	+	+	M	+	+	+	+	M	+	+	+	M	+	+	M	M	M	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	M	
Necrosis																																					

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Experiment Number: 05083-01

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Date Report Requested: 10/23/2014

Test Type: CHRONIC

Test Compound: Wollastonite calcium silicates

Time Report Requested: 12:34:57

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 13983-17-0

First Dose M/F: NA / NA

Species/Strain: Rat/F 344/N

Lab: NORTHROP

F 344/N Rat Male 10 MG/M3ASBESTOS	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	0		
	6	7	7	7	6	7	6	7	6	7	7	7	6	7	5	6	5	6	6	6	4	7	7	7	7	7	0	6	7	7	6
	2	3	8	3	5	4	5	3	0	8	4	2	0	8	6	9	6	2	0	4	7	4	8	3	8	8	5	8	0	3	1
	8	8	9	9	6	3	6	7	0	7	3	6	4	7	5	1	5	8	7	6	7	7	8	7	8	7	0	2	5	0	0
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	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	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
	3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4	4	5	5	5	5	5	5	5	5	5	6	6	6	6	
	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	2	3	4	5	6	7	8	9	0	1	2	3	4

Nervous System

Brain	+	+	+	+	+	+	+	+	+	+	M	+	+	M	+	+	+	+	M	+	+	+	+	+	+	+	+	+	+	+	
Hemorrhage																															
Necrosis, Multifocal																															

Respiratory System

Larynx	+	M	+	+	+	+	+	M	+	+	M	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	+	+	+	+	
Lung	+	M	+	+	+	+	+	M	+	+	M	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	+	+	+	+	
Alveolar Epith, Bronchiole, Hyperplasia	2		2	2		2	2		2	2		3	3	3			2														
Alveolar Epith, Hyperplasia																															
Alveolus, Mineralization																															
Bronchus, Epithelium, Hyperplasia, Focal																															
Inflammation, Suppurative, Acute																															
Interstitial, Fibrosis	2		2		3	2	2		2	2		2	3	3	3	3	2	2													
Interstitial, Mineralization																															
Metaplasia, Osseous, Focal																															
Mineralization																															
Nose	+	+	+	+	+	+	+	+	+	+	M	+	+	+	+	A	+	+	M	+	+	+	+	+	+	+	+	+	+	+	
Foreign Body																															
Hemorrhage																															
Inflammation, Acute			2																												
Mucosa, Hyperplasia																															
Trachea	+	M	+	+	+	+	+	M	+	+	M	+	+	+	+	+	+	+	M	+	+	M	+	+	+	+	+	+	+	+	

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Experiment Number: 05083-01

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Date Report Requested: 10/23/2014

Test Type: CHRONIC

Test Compound: Wollastonite calcium silicates

Time Report Requested: 12:34:58

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 13983-17-0

First Dose M/F: NA / NA

Species/Strain: Rat/F 344/N

Lab: NORTHROP

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	0	0	0	0	0	0	0	0	
F 344/N Rat Male	6	7	7	7	6	7	6	7	6	7	7	7	6	7	5	6	5	6	6	6	4	7	7	7	7	7	0	6	7	7	6
10 MG/M3ASBESTOS	2	3	8	3	5	4	5	3	0	8	4	2	0	8	6	9	6	2	0	4	7	4	8	3	8	8	5	8	0	3	1
	8	8	9	9	6	3	6	7	0	7	3	6	4	7	5	1	5	8	7	6	7	7	8	7	8	7	0	2	5	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	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	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
	3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4	5	5	5	5	5	5	5	5	5	5	6	6	6	6	6
	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	2	3	4	5	6	7	8	9	0	1	2	3	4

Special Senses System

Eye	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	+	+	+	+	+	
Cornea, Inflammation																																
Harderian Gland	+	M	M	M	+	+	+	M	+	M	M	+	M	M	+	+	+	+	M	+	+	+	M	M	+	+	+	+	+	+	+	
Lacrimal Gland	+	+	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	+	+	+	+	+	

Urinary System

Kidney	+	+	+	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	+	+	+	+	+	
Cortex, Cyst																																
Nephropathy	3	3	4	4	4	4	4	4	3	4		4	4	4	1	4	4	2		3	4	4	3	4								
Pelvis, Inflammation, Acute																																
Pelvis, Transit Epithe, Hyperplasia							2							2										3								
Vein, Infarct							2																									
Vein, Thrombosis							X																									
Urinary Bladder	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	+	+	+	+	+	

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+ ..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:

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2) Mild 4) Marked

Experiment Number: 05083-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Test Compound: Wollastonite calcium silicates

CAS Number: 13983-17-0

Date Report Requested: 10/23/2014

Time Report Requested: 12:34:58

First Dose M/F: NA / NA

Lab: NORTHROP

F 344/N Rat Male 10 MG/M3ASBESTOS	DAY ON TEST	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		6	7	0	6	3	3	0	3	7	7	3	6	7	7	0	3
		4	3	9	0	7	7	9	7	1	0	7	3	3	2	9	8
		9	0	4	7	4	4	4	4	9	1	4	5	8	9	4	7
	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	4	4	
		4	4	4	4	4	4	4	4	4	4	4	4	4	1	1	
		6	6	6	6	6	7	7	7	7	7	7	7	7	5	5	
		5	6	7	8	9	0	1	2	3	4	5	6	7	8	1	2
		*TOTALS															

Alimentary System

Esophagus	+	+			+	M	M			M	+			M	+	+	+	+	+	56
Intestine Large, Cecum	+	+			+	+	+			+	+			+	+	+	A	+	+	53
Intestine Large, Colon	+	+			+	+	+			+	+			+	+	+	A	+	+	54
Mucosa, Submucosa, Inflammation																				1 4.0
Intestine Large, Rectum	+	+			+	+	+			+	+			+	+	+	A	+	+	56
Intestine Small, Duodenum	+	+			+	+	+			+	+			+	+	+	A	+	+	56
Intestine Small, Ileum	+	+			+	+	+			+	+			+	+	+	A	A	+	55
Intestine Small, Jejunum	+	+			+	+	+			+	+			+	+	+	A	A	+	53
Liver	+	+			+	+	+			+	+			+	+	+	+	+	+	63
Bile Duct, Hyperplasia										2				3	2	3				30 2.3
Bile Duct, Inflammation										2										1 2.0
Bile Duct, Proliferation																				2 2.5
Centrilobular, Necrosis																				3 3.0
Clear Cell Focus																			X	1
Degeneration, Cystic			2													2				9 2.0
Degeneration, Cystic, Focal																				1 2.0
Hepatocyte, Vacuolization Cytoplasmic			2																	4 2.3
Hepatodiaphragmatic Nodule														X						5
Necrosis, Focal					2	2		2												3 2.0
Necrosis, Multifocal																				1 2.0
Vein, Thrombosis																				1

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+ ..Tissue examined microscopically

X ..Lesion present

I ..Insufficient tissue

M ..Missing tissue

A ..Autolysis precludes evaluation

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1-4 ..Lesion qualified as:

1) Minimal 3) Moderate

2) Mild 4) Marked

Experiment Number: 05083-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Test Compound: Wollastonite calcium silicates

CAS Number: 13983-17-0

Date Report Requested: 10/23/2014

Time Report Requested: 12:34:58

First Dose M/F: NA / NA

Lab: NORTHROP

F 344/N Rat Male 10 MG/M3ASBESTOS	DAY ON TEST																*TOTALS
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
ANIMAL ID	6	7	0	6	3	3	0	3	7	7	3	6	7	7	0	3	
	4	3	9	0	7	7	9	7	1	0	7	3	3	2	9	8	
	9	0	4	7	4	4	4	4	9	1	4	5	8	9	4	7	
	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	4	4	4	4	4	4	4	1	1	
	6	6	6	6	6	7	7	7	7	7	7	7	7	7	5	5	
	5	6	7	8	9	0	1	2	3	4	5	6	7	8	1	2	
Pancreas	+	+		+	+	+		A	+		+	+	+		+	+	
Acinus, Atrophy												2				2	
Acinus, Atrophy, Focal																	
Acinus, Hyperplasia			2														
Fibrosis, Focal													2				
Salivary Glands	M	+		M	M	M		M	+		M	+	+	+	M	+	
Stomach, Forestomach	+	+		+	+	+		+	+		+	+	+	A	+	+	
Epithelium, Hyperplasia																	
Mucosa, Ulcer																	
Submucosa, Inflammation																	
Submucosa, Mineralization																	
Ulcer, Focal									2								
Stomach, Glandular	+	+		+	+	+		+	+		+	+	+	A	+	+	
Mineralization									2								
Necrosis, Focal																	
Submucosa, Mineralization																	
Cardiovascular System																	
Heart	+	+		+	M	M		+	+		M	+	+	+	+	+	
Atrium, Thrombosis									X								
Cardiomyopathy	3	2		3								3	3	3	3	3	
Mineralization									4								
Endocrine System																	

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+ ..Tissue examined microscopically

X ..Lesion present

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1-4 ..Lesion qualified as:

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Experiment Number: 05083-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Test Compound: Wollastonite calcium silicates

CAS Number: 13983-17-0

Date Report Requested: 10/23/2014

Time Report Requested: 12:34:58

First Dose M/F: NA / NA

Lab: NORTHROP

F 344/N Rat Male 10 MG/M3ASBESTOS	DAY ON TEST																*TOTALS
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
ANIMAL ID	6	7	0	6	3	3	0	3	7	7	3	6	7	7	0	3	
	4	3	9	0	7	7	9	7	1	0	7	3	3	2	9	8	
	9	0	4	7	4	4	4	4	9	1	4	5	8	9	4	7	
	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	4	4	4	4	4	4	4	1	1	
	6	6	6	6	6	7	7	7	7	7	7	7	7	7	5	5	
	5	6	7	8	9	0	1	2	3	4	5	6	7	8	1	2	
Adrenal Gland, Cortex	+	+		+	+	+		+	+		+	+	+	+	M	+	
Hyperplasia, Focal																	
Vacuolization Cytoplasmic			2									2	2				
Adrenal Gland, Medulla	+	+		+	M	+		+	+		+	+	+	+	M	+	
Hyperplasia																2	
Necrosis																1	
Islets, Pancreatic			+									+		+			
Parathyroid Gland	+	+		+	M	M		M	+		M	+	M	+	+	+	
Bilateral, Hyperplasia																3	
Hyperplasia			2						2					2		10	
Pituitary Gland	+	+		+	M	A		+	+		+	+	+	+	M	+	
Hyperplasia																6	
Thyroid Gland	+	+		+	M	M		M	+		M	+	M	+	+	+	
C Cell, Hyperplasia																1	
General Body System																	
Tissue NOS																3	
Fat, Necrosis																1	
Necrosis																1	
Genital System																	
Epididymis	+	+		+	+	+		+	+		+	+	+	+	+	+	
Hypospermia				2					2							25	
Necrosis																1	

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1) Minimal 3) Moderate
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Experiment Number: 05083-01

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: Rat/F 344/N

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL

Test Compound: Wollastonite calcium silicates

CAS Number: 13983-17-0

Date Report Requested: 10/23/2014

Time Report Requested: 12:34:58

First Dose M/F: NA / NA

Lab: NORTHROP

F 344/N Rat Male
10 MG/M3ASBESTOS

Table with columns for DAY ON TEST (0-16) and ANIMAL ID (0-16). Rows list various tissues and lesions such as Preputial Gland, Prostate, Seminal Vesicle, Testes, Bone Marrow, and Lymph Node, with associated counts and severity grades.

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F 344/N Rat Male 10 MG/M3ASBESTOS	DAY ON TEST																*TOTALS		
	0 6 4 9	0 7 3 0	0 0 9 4	0 6 0 7	0 3 7 4	0 3 7 4	0 0 9 4	0 3 7 4	0 7 1 9	0 7 0 1	0 3 7 4	0 6 3 5	0 7 3 8	0 7 2 9	0 0 9 4	0 3 8 7			
ANIMAL ID	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Lymph Node, Mandibular Hyperplasia	M	+		M	M	M		M	+		M	+	+	+	M	+	45	2	2.0
Lymph Node, Mesenteric Ectasia	+	+		+	+	+		+	+		+	+	+	+	+	+	43	1	2.0
Hemorrhage Hyperplasia																	2	2	2.0
Spleen Necrosis	+	+		+	+	+		+	+		+	+	+	+	+	+	65	1	2.0
Thymus Necrosis	+	+		+	M	M		M	M		M	+	M	+	+	+	35	1	2.0
Integumentary System																			
Mammary Gland Cyst	M	M		M	+	M		+	M		M	+	M	+	M	M	22		
Skin Acanthosis, Focal												X		X			11		
Skin Cyst Epithelial Inclusion	+	+		+	+	+		+	+		+	+	+	+	+	+	59	1	2.0
																X	1		
Musculoskeletal System																			
Bone Fibrous Osteodystrophy, Focal	+	+		+	+	+		+	+		+	+	+	+	+	+	64	1	
Skeletal Muscle Degeneration	+	+		+	+	+		+	+		+	+	+	+	+	+	56	1	2.0
Necrosis																	1	2.0	

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F 344/N Rat Male 10 MG/M3ASBESTOS	DAY ON TEST	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		6	7	0	6	3	3	0	3	7	7	3	6	7	7	0	3
		4	3	9	0	7	7	9	7	1	0	7	3	3	2	9	8
		9	0	4	7	4	4	4	4	9	1	4	5	8	9	4	7
	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	4	4	
		4	4	4	4	4	4	4	4	4	4	4	4	4	1	1	
		6	6	6	6	6	7	7	7	7	7	7	7	7	5	5	
		5	6	7	8	9	0	1	2	3	4	5	6	7	8	1	2
		*TOTALS															

Nervous System

Brain	+	+		+	A	+		+	+		+	+	+	+	+	+	63
Hemorrhage																	1 3.0
Necrosis, Multifocal																	1 2.0

Respiratory System

Larynx	+	+		+	M	M		M	+		M	+	M	+	+	+	53
Lung	+	+		+	M	M		M	+		M	+	M	+	+	+	54
Alveolar Epith, Bronchiole, Hyperplasia				2	2												30 2.2
Alveolar Epith, Hyperplasia																	1 3.0
Alveolus, Mineralization																	2 2.5
Bronchus, Epithelium, Hyperplasia, Focal																	1 3.0
Inflammation, Suppurative, Acute													3				1 3.0
Interstitial, Fibrosis	2	2		3				2			3				3	2	50 2.5
Interstitial, Mineralization																	1 2.0
Metaplasia, Osseous, Focal																	1 2.0
Mineralization									3								2 2.5
Nose	+	+		+	M	+		M	+		+	+	+	A	+	+	58
Foreign Body																	1 2.0
Hemorrhage																	1 2.0
Inflammation, Acute				2													9 2.1
Mucosa, Hyperplasia																	1 2.0
Trachea	+	+		+	M	M		M	+		M	+	M	+	+	+	53

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

Special Senses System

Eye	+	+		+	+	+		+	M		+	+	+	+	+	+	62
Cornea, Inflammation																	1 2.0
Harderian Gland	+	+		M	M	+		M	M		+	+	M	+	+	+	34
Lacrimal Gland	+	+		+	M	+		M	+		+	+	+	+	+	+	61

Urinary System

Kidney	+	+		+	+	+		+	+		+	+	+	+	+	+	65
Cortex, Cyst																	1 2.0
Nephropathy	4	4		3				4			4	4	4		2		60 3.5
Pelvis, Inflammation, Acute																	1 2.0
Pelvis, Transit Epithe, Hyperplasia			2										2				9 2.1
Vein, Infarct																	1 2.0
Vein, Thrombosis																	1
Urinary Bladder	+	+		+	+	+		+	+		+	+	+	+	+	+	65

END OF MALE DATA

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