

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

F1\_RE

**NTP Study Number:** C20523  
**Lock Date:** 06/04/2012  
**Cage Range:** ALL  
**Date Range:** ALL  
**Reasons For Removal:** ALL  
**Removal Date Range:** ALL  
**Treatment Groups:** Include ALL  
**Study Gender:** Both  
**TDMSE Version:** 3.0.2.2\_002  
**PWG Approval Date:** NONE

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**Species/Strain:** RATS/Wistar Han

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 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 1

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** Control

**DISP:** Terminal Sacrifice

**HISTO:** 60171

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lung
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Parathyroid Gland	* Preputial Gland	* Salivary Glands	* Seminal Vesicle
* Skin	* Spleen	* Stomach, Forestomach	* Trachea
* Urinary Bladder			

**MISSING**

\* Mammary Gland

**OBSERVATIONS**

* Adrenal Cortex		Necrosis	Mild
		Vacuolization Cytoplasmic	Mild
* Heart		Cardiomyopathy	Minimal
* Intestine Large, Cecum	Artery	Inflammation	Minimal
* Intestine Small, Duodenum	Artery	Inflammation	Minimal
* Kidney		Nephropathy	Marked
	[ Nephropathy TGLs = 1-7+16 ]		
* Liver		Basophilic Focus	
		Clear Cell Focus	
* Nose	Transit Epithe	Hyperplasia	Minimal
* Pancreas	Acinus	Atrophy	Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Mild
* Prostate		Inflammation	Mild
* Stomach, Glandular	Artery	Inflammation	Minimal
* Testes	Artery	Inflammation	Chronic, Mild
* Thymus		Atrophy	Mild
* Thyroid Gland	C Cell	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
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 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
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 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 2

TRT#: 1

SEX: Male

DAY ON TEST: 729

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 60172

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lymph Node, Bronchial	* Lymph Node, Mandibular
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Trachea	* Urinary Bladder	

MISSING

\* Mammary Gland

OBSERVATIONS

* Heart		Cardiomyopathy	Minimal
* Kidney		Nephropathy	Minimal
* Liver		Clear Cell Focus	
* Lung	Alveolar Epith	Hyperplasia	Mild
	Alv/Bron Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
* Preputial Gland		Inflammation	Minimal
* Thymus		Atrophy	Mild
* Thyroid Gland	C Cell	Hyperplasia	Minimal

**Experiment Number:** 20523 - 03  
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**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
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**CAS Number:** TRIMVX

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**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 3

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** Control

**DISP:** Terminal Sacrifice

**HISTO:** 60173

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Liver	* Lung
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Nose	* Pancreas	* Parathyroid Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Thymus	* Trachea	* Urinary Bladder	

**MISSING**

\* Mammary Gland

**OBSERVATIONS**

* Heart		Cardiomyopathy	Mild
* Kidney		Nephropathy	Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
* Thyroid Gland	C Cell	Hyperplasia	Minimal

**Experiment Number:** 20523 - 03  
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**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
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**CAS Number:** TRIMVX

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**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 4

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** Control

**DISP:** Terminal Sacrifice

**HISTO:** 60174

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Larynx	* Liver
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Pancreas
* Pituitary Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Thyroid Gland	* Trachea	* Urinary Bladder

**MISSING**

* Lymph Node, Bronchial	* Mammary Gland	* Parathyroid Gland
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**OBSERVATIONS**

* Adrenal Cortex		Hypertrophy	Minimal
		Vacuolization Cytoplasmic	Minimal
* Lung	Alv/Bron Epith	Hyperplasia	Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
		Inflammation	Suppurative, Minimal
* Preputial Gland		Inflammation	Mild
	[ Inflammation TGLs = 1-9 ]		
* Thymus		Atrophy	Minimal

\* PROTOCOL REQUIRED TISSUE

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Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
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CAS Number: TRIMVX

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First Dose M/F: 07/20/09 / 07/20/09  
Lab: BNW

ANIMAL ID: 5

TRT#: 1

SEX: Male

DAY ON TEST: 730

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 60175

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Larynx	* Lung
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Nose	* Pancreas	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Mammary Gland	* Parathyroid Gland
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OBSERVATIONS

* Heart		Cardiomyopathy	Minimal
* Liver		Clear Cell Focus	
	[ Clear Cell Focus TGLs = 1-6 ]		
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
* Preputial Gland		Inflammation	Minimal
* Thymus		Atrophy	Mild

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
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**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
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**CAS Number:** TRIMVX

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**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 6

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:** 731

**DOSE:** Control

**DISP:** Terminal Sacrifice

**HISTO:** 60176

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Liver	* Lung
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Nose	* Pancreas	* Preputial Gland
* Salivary Glands	* Seminal Vesicle	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Trachea	* Urinary Bladder	

**MISSING**

* Parathyroid Gland	* Thymus
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**OBSERVATIONS**

* Adrenal Cortex		Angiectasis	Minimal
		Hypertrophy	Mild
* Kidney	Pelvis	Inflammation	Minimal
* Pituitary Gland	Pars Distalis	Adenoma	
[ Adenoma TGLs = 3-10 ]			
* Prostate		Inflammation	Minimal
* Skin		Ulcer	Mild
[ Ulcer TGLs = 1,2-15+16 ]			
* Spleen		Hematopoietic Cell Proliferation	Minimal
* Thyroid Gland	Follicle	Hyperplasia	Minimal
	C Cell	Hyperplasia	Minimal

Experiment Number: 20523 - 03  
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 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

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 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 7

TRT#: 1

SEX: Male

DAY ON TEST: 730

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 60177

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Liver
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Parathyroid Gland	* Pituitary Gland	* Preputial Gland	* Prostate
* Salivary Glands	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Trachea	* Urinary Bladder	

MISSING

\* Mammary Gland

OBSERVATIONS

* Kidney		Nephropathy	Minimal
* Lung	Alveolar Epith	Hyperplasia	Minimal
		Inflammation	Chronic Active, Minimal
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
* Pancreas	Acinus	Atrophy	Minimal
* Seminal Vesicle		Fibrosis	Mild
* Testes		Edema	Mild
	[ Edema TGLs = 2-9 ]		
* Thymus		Thymoma Benign	
* Thyroid Gland	Follicle	Hyperplasia	Mild
	C Cell	Hyperplasia	Mild
	[ Hyperplasia TGLs = 1-3 ]		



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**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
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**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 8

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** Control

**DISP:** Terminal Sacrifice

**HISTO:** 60178

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Trachea	* Urinary Bladder		

**MISSING**

\* Mammary Gland

**OBSERVATIONS**

* Adrenal Cortex		Hypertrophy	Mild
		Vacuolization Cytoplasmic	Minimal
* Heart		Cardiomyopathy	Minimal
* Kidney	Pelvis	Inflammation	Minimal
* Liver		Basophilic Focus	
* Lung	Alv/Bron Epith	Hyperplasia	Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
	Transit Epithe	Hyperplasia	Minimal
	Transit Epithe	Metaplasia	Squamous, Minimal
* Preputial Gland		Inflammation	Minimal
* Thymus		Atrophy	Mild
* Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

**ANIMAL ID:** 9

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:** 731

**DOSE:** Control

**DISP:** Terminal Sacrifice

**HISTO:** 60179

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lung	* Lymph Node, Bronchial	* Lymph Node, Mandibular
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Nose	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Trachea	* Urinary Bladder	

**MISSING**

\* Mammary Gland

**OBSERVATIONS**

* Adrenal Cortex		Vacuolization Cytoplasmic	Minimal
* Heart		Cardiomyopathy	Minimal
* Kidney	Pelvis	Inflammation	Minimal
* Liver		Clear Cell Focus	
	Bile Duct	Dilatation	Marked
	[ Clear Cell Focus TGLs = 3-6 ]		
	[ Dilatation TGLs = 5-15 ]		
Lymph Node	Lumbar	Hyperplasia	Plasma Cell, Mild
	[ Hyperplasia TGLs = 4-16 ]		
* Preputial Gland		Inflammation	Minimal
* Skin	Subcut Tiss	Fibroma	
		Ulcer	Mild
	[ Fibroma TGLs = 2-17 ]		
	[ Ulcer TGLs = 1-16 ]		
* Thymus		Atrophy	Mild
* Thyroid Gland	C Cell	Hyperplasia	Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
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**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
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**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 10

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:** 529

**DOSE:** Control

**DISP:** Moribund Sacrifice

**HISTO:** 60180

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Epididymis	* Esophagus	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Liver	* Lymph Node, Bronchial	* Lymph Node, Mandibular
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Nose	* Pancreas
* Parathyroid Gland	* Salivary Glands	* Seminal Vesicle	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Testes	* Trachea
* Urinary Bladder			

**MISSING**

\* Mammary Gland

**OBSERVATIONS**

* Brain		Compression	Mild
		Hydrocephalus	Mild
* Eye	Retina	Atrophy	Mild
* Kidney		Nephropathy	Minimal
* Lung		Infiltration Cellular	Histiocyte, Minimal
	[ Infiltration Cellular TGLs = 4-16 ]		
* Pituitary Gland	Pars Distalis	Adenoma	
	[ Adenoma TGLs = 2-10 ]		
* Preputial Gland		Inflammation	Mild
* Prostate		Inflammation	Mild
* Spleen	Lymph Follic	Atrophy	Minimal
* Thymus		Atrophy	Mild
* Thyroid Gland	C Cell	Hyperplasia	Minimal

**PRIMARY CAUSE OF DEATH** - Pituitary Gland Pars Distalis Adenoma

\* PROTOCOL REQUIRED TISSUE

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**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
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**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 11

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:** 731

**DOSE:** Control

**DISP:** Terminal Sacrifice

**HISTO:** 60181

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Kidney	* Larynx	* Liver	* Lung
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Parathyroid Gland	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Trachea	* Urinary Bladder	

**MISSING**

\* Mammary Gland

**OBSERVATIONS**

* Adrenal Cortex		Hypertrophy	Mild
		Vacuolization Cytoplasmic	
* Heart		Cardiomyopathy	Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
* Pancreas	Acinus	Atrophy	Mild
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
	[ Hyperplasia TGLs = 1-10 ]		
* Testes	Interstit Cell	Hyperplasia	Mild
* Thymus		Atrophy	Mild
* Thyroid Gland	C Cell	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 12

TRT#: 1

SEX: Male

DAY ON TEST: 626

DOSE: Control

DISP: Moribund Sacrifice

HISTO: 60182

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Liver	* Lymph Node, Bronchial
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Trachea	* Urinary Bladder		

MISSING

\* Mammary Gland

OBSERVATIONS

* Adrenal Cortex		Vacuolization Cytoplasmic	Minimal
* Kidney	Pelvis	Inflammation	Minimal
		Nephropathy	Minimal
* Lung		Infiltration Cellular	Histiocyte, Minimal
Lymph Node	Lumbar	Hemangioma	
[ Hemangioma TGLs = 3-7 ]			
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
* Preputial Gland		Inflammation	Mild
* Skin		Ulcer	Mild
[ Ulcer TGLs = 1,2-15+16 ]			
* Spleen		Hematopoietic Cell Proliferation	Minimal
* Thymus		Atrophy	Mild
* Thyroid Gland	C Cell	Hyperplasia	Minimal

PRIMARY CAUSE OF DEATH - Skin Ulcer

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
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 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 13

TRT#: 1

SEX: Male

DAY ON TEST: 662

DOSE: Control

DISP: Natural Death

HISTO: 60183

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Larynx	* Liver	* Lung	* Lymph Node, Mandibular
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Nose	* Pancreas
* Parathyroid Gland	* Preputial Gland	* Salivary Glands	* Skin
* Stomach, Glandular	* Testes	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Lymph Node, Bronchial	* Mammary Gland
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OBSERVATIONS

* Heart		Cardiomyopathy	Minimal
* Islets, Pancreatic		Adenoma	
[ Adenoma TGLs = 2-7 ]			
* Kidney	Pelvis	Inflammation	Mild
		Nephropathy	Minimal
* Pituitary Gland	Pars Distalis	Adenoma	
[ Adenoma TGLs = 1-10 ]			
* Prostate		Inflammation	Mild
* Seminal Vesicle		Inflammation	Mild
* Spleen	Lymph Follic	Atrophy	Mild
* Stomach, Forestomach		Inflammation	Mild

PRIMARY CAUSE OF DEATH - Pituitary Gland Pars Distalis Adenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
Test Type: CHRONIC  
Route: RESPIRATORY EXPOSURE WHOLE BODY  
Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Metal working fluids (Trim VX)  
CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
Time Report Requested: 09:56:24  
First Dose M/F: 07/20/09 / 07/20/09  
Lab: BNW

ANIMAL ID: 14

TRT#: 1

SEX: Male

DAY ON TEST: 730

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 60184

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Liver	* Lung
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Pancreas
* Pituitary Gland	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Mammary Gland	* Parathyroid Gland
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INSUFFICIENT TISSUE

\* Lymph Node, Mediastinal

OBSERVATIONS

* Adrenal Cortex		Vacuolization Cytoplasmic	Mild
* Kidney	Pelvis	Inflammation	Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal
* Thymus		Atrophy	Mild

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 15

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** Control

**DISP:** Terminal Sacrifice

**HISTO:** 60185

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lung	* Lymph Node, Bronchial	* Lymph Node, Mandibular
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Trachea	* Urinary Bladder		

**MISSING**

\* Mammary Gland

**OBSERVATIONS**

* Adrenal Cortex		Necrosis	Mild
* Heart		Cardiomyopathy	Minimal
* Kidney	Renal Tubule	Carcinoma	
		Nephropathy	Marked
	[ Carcinoma TGLs = 3-16+17 ]		
	[ Nephropathy TGLs = 2-7 ]		
* Liver		Basophilic Focus	
		Clear Cell Focus	
	Lymph Node	Hyperplasia	Plasma Cell, Moderate
	[ Hyperplasia TGLs = 4-18 ]		
* Nose		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Adenoma	Multiple
	[ Adenoma TGLs = 1-10 ]		
* Testes	Germinal Epith	Atrophy	Mild
	Artery	Inflammation	Chronic, Moderate
* Thymus		Atrophy	Mild
* Thyroid Gland	C Cell	Hyperplasia	Mild

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 16

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** Control

**DISP:** Terminal Sacrifice

**HISTO:** 60186

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Kidney	* Larynx	* Lung	* Lymph Node, Bronchial
* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Prostate	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Thymus	* Trachea	* Urinary Bladder	

**MISSING**

* Lymph Node, Mediastinal	* Mammary Gland
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**OBSERVATIONS**

* Adrenal Cortex		Vacuolization Cytoplasmic	Minimal
* Islets, Pancreatic		Adenoma	
[ Adenoma TGLs = 2-6 ]			
* Liver		Clear Cell Focus	
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal
* Preputial Gland		Inflammation	Minimal
* Seminal Vesicle		Inflammation	Minimal
[ Inflammation TGLs = 1-10 ]			
* Thyroid Gland	C Cell	Hyperplasia	Minimal

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 17

TRT#: 1

SEX: Male

DAY ON TEST: 675

DOSE: Control

DISP: Moribund Sacrifice

HISTO: 60187

ORGAN AND ACCOUNTABLE SITE STATUS

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Larynx
* Lymph Node, Bronchial	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Nose
* Pancreas	* Parathyroid Gland	Peripheral Nerve	* Pituitary Gland
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
Skeletal Muscle	Spinal Cord	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Trachea	* Urinary Bladder

**MISSING**

* Lymph Node, Mandibular	* Mammary Gland
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**OBSERVATIONS**

* Liver		Clear Cell Focus	
	Bile Duct	Hyperplasia	Minimal
* Lung	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Minimal
Lymph Node	Lumbar	Hyperplasia	Plasma Cell, Moderate
[ Hyperplasia TGLs = 2-16 ]			
Mesentery	Fat	Necrosis	Minimal
[ Necrosis TGLs = 1-15 ]			
* Skin		Inflammation	Mild
		Ulcer	Mild
[ Inflammation TGLs = 3-17 ]			
[ Ulcer TGLs = 4-18 ]			
* Thymus		Atrophy	Mild
* Thyroid Gland	C Cell	Hyperplasia	Minimal

PRIMARY CAUSE OF DEATH	- Skin	Ulcer
CONTRIBUTORY CAUSE OF DEATH	- Skin	Inflammation

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
Test Type: CHRONIC  
Route: RESPIRATORY EXPOSURE WHOLE BODY  
Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Metal working fluids (Trim VX)  
CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
Time Report Requested: 09:56:24  
First Dose M/F: 07/20/09 / 07/20/09  
Lab: BNW

ANIMAL ID: 18

TRT#: 1

SEX: Male

DAY ON TEST: 730

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 60188

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Larynx
* Liver	* Lung	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Nose	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Preputial Gland	* Salivary Glands	* Seminal Vesicle
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Lymph Node, Bronchial	* Mammary Gland
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OBSERVATIONS

* Prostate	Inflammation	Minimal
* Skin	Ulcer	Mild
[ Ulcer TGLs = 1-15 ]		
* Testes	Interstit Cell	Mild
* Thymus	Hyperplasia	Mild
	Atrophy	Mild

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 19

TRT#: 1

SEX: Male

DAY ON TEST: 716

DOSE: Control

DISP: Moribund Sacrifice

HISTO: 60189

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Liver	* Lung
* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Pituitary Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Trachea	* Urinary Bladder

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mediastinal	* Mammary Gland	* Parathyroid Gland
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OBSERVATIONS

* Heart		Cardiomyopathy	Mild
* Kidney		Nephropathy	Moderate
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Respirat Epith	Hyperplasia	Minimal
	Goblet Cell	Hyperplasia	Mild
	Transit Epithe	Hyperplasia	Mild
		Inflammation	Suppurative, Minimal
* Pancreas	Artery	Inflammation	Minimal
* Skin		Hyperkeratosis	Marked
		Ulcer	Mild
	[ Hyperkeratosis TGLs = 2-16 ]		
	[ Ulcer TGLs = 1-15 ]		
* Testes	Germinal Epith	Atrophy	Mild
* Thymus		Atrophy	Mild
* Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH - Skin Ulcer  
 CONTRIBUTORY CAUSE OF DEATH - Skin Hyperkeratosis

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
Test Type: CHRONIC  
Route: RESPIRATORY EXPOSURE WHOLE BODY  
Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Metal working fluids (Trim VX)

CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
Time Report Requested: 09:56:24  
First Dose M/F: 07/20/09 / 07/20/09  
Lab: BNW

ANIMAL ID: 20

TRT#: 1

SEX: Male

DAY ON TEST: 729

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 60190

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Larynx	* Lung
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Nose	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Trachea	* Urinary Bladder	

**MISSING**

* Mammary Gland	* Parathyroid Gland
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**OBSERVATIONS**

* Adrenal Cortex		Hypertrophy	Minimal
		Vacuolization Cytoplasmic	Minimal
* Liver		Angiectasis	Minimal
		Eosinophilic Focus	
Lymph Node	Renal	Hyperplasia	Plasma Cell, Mild
	Lumbar	Hyperplasia	Plasma Cell, Mild
			[ Hyperplasia TGLs = 3-15 ]
			[ Hyperplasia TGLs = 4-16 ]
* Pancreas	Acinus	Atrophy	Minimal
* Pituitary Gland	Pars Intermed	Adenoma	
* Skin		Ulcer	Mild
			[ Ulcer TGLs = 1-17 ]
* Testes	Germinal Epith	Atrophy	Mild
			[ Atrophy TGLs = 2-9 ]
* Thyroid Gland	C Cell	Hyperplasia	Mild

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 21

TRT#: 1

SEX: Male

DAY ON TEST: 729

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 60191

ORGAN AND ACCOUNTABLE SITE STATUS

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Liver	* Lymph Node, Bronchial	* Lymph Node, Mandibular
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Trachea	* Urinary Bladder	

**MISSING**

\* Mammary Gland

**OBSERVATIONS**

* Adrenal Cortex		Hypertrophy	Minimal
		Vacuolization Cytoplasmic	Minimal
* Eye	Retina	Atrophy	Mild
* Kidney	Pelvis	Inflammation	Minimal
* Lung		Fibrosis	Minimal
		Infiltration Cellular	Histiocyte, Minimal
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
* Preputial Gland		Inflammation	Minimal
* Thymus		Atrophy	Minimal
* Thyroid Gland	C Cell	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 22

TRT#: 1

SEX: Male

DAY ON TEST: 729

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 60192

ORGAN AND ACCOUNTABLE SITE STATUS

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lung	* Lymph Node, Mandibular
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Pancreas	* Parathyroid Gland	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Trachea	* Urinary Bladder

**MISSING**

\* Lymph Node, Bronchial

**OBSERVATIONS**

* Adrenal Cortex		Hypertrophy	Minimal
* Kidney	Pelvis	Inflammation	Minimal
		Nephropathy	Minimal
* Liver		Clear Cell Focus	
Lymph Node	Lumbar	Hyperplasia	Plasma Cell, Moderate
[ Hyperplasia TGLs = 3-15 ]			
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
* Skin	Epidermis	Keratoacanthoma	
		Ulcer	Mild
[ Keratoacanthoma TGLs = 2-16 ]			
[ Ulcer TGLs = 1-16 ]			
* Thymus		Atrophy	Mild
* Thyroid Gland	C Cell	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 23

TRT#: 1

SEX: Male

DAY ON TEST: 730

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 60193

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lymph Node, Bronchial	* Lymph Node, Mandibular
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Pancreas
* Preputial Gland	* Salivary Glands	* Skin	* Spleen
* Stomach, Glandular	* Thymus	* Trachea	* Urinary Bladder

OBSERVATIONS

* Heart		Cardiomyopathy	Mild
* Kidney		Nephropathy	Marked
	[ Nephropathy TGLs = 1-7+16 ]		
* Liver		Clear Cell Focus	
	Bile Duct	Hyperplasia	Minimal
* Lung	Alveolar Epith	Hyperplasia	Minimal
* Nose		Inflammation	Suppurative, Minimal
* Parathyroid Gland		Fibrosis	Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
* Prostate		Inflammation	Mild
* Seminal Vesicle		Inflammation	Moderate
* Stomach, Forestomach		Cyst	Mild
	[ Cyst TGLs = 2-18 ]		
* Testes	Artery	Inflammation	Chronic, Mild
* Thyroid Gland	C Cell	Hyperplasia	Minimal



Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 24

TRT#: 1

SEX: Male

DAY ON TEST: 729

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 60194

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Liver	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Nose	* Parathyroid Gland	* Pituitary Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Trachea	* Urinary Bladder

**MISSING**

* Lymph Node, Bronchial	* Mammary Gland
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**OBSERVATIONS**

* Adrenal Cortex		Angiectasis	Minimal
		Vacuolization Cytoplasmic	Minimal
* Eye	Retina	Atrophy	Mild
* Kidney	Pelvis	Inflammation	Minimal
		Nephropathy	Minimal
* Lung		Fibrosis	Minimal
		Infiltration Cellular	Histiocyte, Minimal
Lymph Node	Lumbar	Hyperplasia	Plasma Cell, Mild
[ Hyperplasia TGLs = 3-17 ]			
* Pancreas	Acinus	Atrophy	Minimal
* Preputial Gland		Inflammation	Minimal
* Skin		Ulcer	Mild
[ Ulcer TGLs = 1,2-15+16 ]			
* Spleen		Hematopoietic Cell Proliferation	Minimal
* Thymus		Atrophy	Mild
* Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 25

TRT#: 1

SEX: Male

DAY ON TEST: 694

DOSE: Control

DISP: Moribund Sacrifice

HISTO: 60195

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Epididymis	* Esophagus	* Eye	* Harderian Gland
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Liver	* Lymph Node, Bronchial
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	Peripheral Nerve
* Prostate	* Salivary Glands	* Seminal Vesicle	Skeletal Muscle
* Skin	Spinal Cord	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Trachea	* Urinary Bladder

MISSING

* Mammary Gland	* Parathyroid Gland
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OBSERVATIONS

* Adrenal Cortex		Hypertrophy	Minimal
* Brain		Carcinoma	Metastatic (Zymbal'S Gland)
* Heart		Cardiomyopathy	Minimal
* Islets, Pancreatic		Adenoma	
* Kidney	Pelvis	Inflammation	Minimal
		Nephropathy	Minimal
* Larynx	Epiglottis	Metaplasia	Squamous, Minimal
* Lung		Carcinoma	Metastatic (Zymbal'S Gland)
	Alveolar Epith	Hyperplasia	Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
* Pancreas		Inflammation	Minimal
* Pituitary Gland	Pars Distalis	Adenoma	
* Preputial Gland		Inflammation	Minimal
* Thymus		Atrophy	Mild
* Thyroid Gland	C Cell	Hyperplasia	Minimal
Zymbal's Gland		Carcinoma	

[ Carcinoma TGLs = 3-15 ]

PRIMARY CAUSE OF DEATH - Zymbal's Gland Carcinoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 26

TRT#: 1

SEX: Male

DAY ON TEST: 731

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 60196

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Lymph Node, Bronchial	* Lymph Node, Mandibular
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Trachea
* Urinary Bladder			

MISSING

\* Mammary Gland

OBSERVATIONS

* Kidney		Hydronephrosis	Mild
	Pelvis	Inflammation	Mild
		Nephropathy	Minimal
* Larynx	Epiglottis	Metaplasia	Squamous, Minimal
* Liver		Angiectasis	Minimal
	[ Angiectasis TGLs = 3-6 ]		
* Lung	Alveolar Epith	Hyperplasia	Minimal
	Lymph Node	Hyperplasia	Plasma Cell, Mild
	[ Hyperplasia TGLs = 4-16 ]		
* Nose	Transit Epithe	Hyperplasia	Mild
	Transit Epithe	Metaplasia	Squamous, Minimal
* Pituitary Gland		Cyst	Minimal
* Skin		Ulcer	Mild
	[ Ulcer TGLs = 1-16 ]		
* Testes		Edema	Mild
	[ Edema TGLs = 2-9 ]		
* Thymus		Atrophy	Mild
* Thyroid Gland	C Cell	Hyperplasia	Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 27

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** Control

**DISP:** Terminal Sacrifice

**HISTO:** 60197

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Medulla          | Blood Vessel              | * Bone                      | * Bone Marrow            |
| * Epididymis               | * Esophagus               | * Harderian Gland           | * Intestine Large, Cecum |
| * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic      | * Larynx                    | * Liver                  |
| * Lung                     | * Lymph Node, Bronchial   | * Lymph Node, Mandibular    | * Lymph Node, Mesenteric |
| * Nose                     | * Pancreas                | * Parathyroid Gland         | * Prostate               |
| * Salivary Glands          | * Seminal Vesicle         | * Skin                      | * Spleen                 |
| * Stomach, Forestomach     | * Stomach, Glandular      | * Testes                    | * Thyroid Gland          |
| * Trachea                  | * Urinary Bladder         |                             |                          |

**MISSING**

- \* Mammary Gland

**INSUFFICIENT TISSUE**

- \* Lymph Node, Mediastinal

**OBSERVATIONS**

- |                             |               |                           |         |
|-----------------------------|---------------|---------------------------|---------|
| * Adrenal Cortex            |               | Vacuolization Cytoplasmic | Minimal |
| * Brain                     | Meninges      | Inflammation              | Minimal |
| * Eye                       | Retina        | Atrophy                   | Mild    |
| * Heart                     |               | Cardiomyopathy            | Minimal |
| * Kidney                    |               | Nephropathy               | Minimal |
| * Pituitary Gland           |               | Angiectasis               | Minimal |
|                             | Pars Distalis | Hyperplasia               | Minimal |
| [ Angiectasis TGLs = 2-10 ] |               |                           |         |
| * Preputial Gland           |               | Inflammation              | Minimal |
| * Thymus                    |               | Atrophy                   | Mild    |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
Test Type: CHRONIC  
Route: RESPIRATORY EXPOSURE WHOLE BODY  
Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Metal working fluids (Trim VX)  
CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
Time Report Requested: 09:56:24  
First Dose M/F: 07/20/09 / 07/20/09  
Lab: BNW

ANIMAL ID: 28

TRT#: 1

SEX: Male

DAY ON TEST: 729

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 60198

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Larynx
* Liver	* Lung	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Nose	* Pancreas	* Pituitary Gland
* Preputial Gland	* Salivary Glands	* Seminal Vesicle	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Trachea	* Urinary Bladder		

MISSING

* Lymph Node, Bronchial	* Mammary Gland	* Parathyroid Gland
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OBSERVATIONS

* Prostate		Inflammation	Minimal
* Thymus		Atrophy	Mild
* Thyroid Gland	C Cell	Hyperplasia	Minimal

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 29

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:** 731

**DOSE:** Control

**DISP:** Terminal Sacrifice

**HISTO:** 60199

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland	* Preputial Gland
* Salivary Glands	* Seminal Vesicle	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Testes	* Thymus
* Trachea	* Urinary Bladder		

**MISSING**

\* Mammary Gland

**OBSERVATIONS**

* Adrenal Cortex		Hypertrophy	Minimal
		Vacuolization Cytoplasmic	Minimal
* Intestine Large, Cecum		Inflammation	Moderate
[ Inflammation TGLs = 2-16 ]			
* Kidney		Nephropathy	Minimal
* Liver		Basophilic Focus	
		Clear Cell Focus	
* Lung	Alv/Bron Epith	Hyperplasia	Minimal
* Nose		Foreign Body	
		Inflammation	Suppurative, Mild
* Pituitary Gland	Pars Distalis	Adenoma	
[ Adenoma TGLs = 1-10 ]			
* Prostate		Inflammation	Minimal
* Thyroid Gland	C Cell	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 30

TRT#: 1

SEX: Male

DAY ON TEST: 730

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 60200

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Epididymis	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lung	* Lymph Node, Bronchial	* Lymph Node, Mandibular
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Preputial Gland	* Salivary Glands	* Seminal Vesicle
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Trachea	* Urinary Bladder		

MISSING

\* Mammary Gland

OBSERVATIONS

* Adrenal Cortex		Hypertrophy	Mild
		Vacuolization Cytoplasmic	Minimal
* Brain		Degeneration	Mild
		Gliosis	Mild
		Hemorrhage	Mild
	[ Degeneration TGLs = 2-1 ]		
* Kidney		Nephropathy	Minimal
* Liver		Clear Cell Focus	
* Nose	Globlet Cell	Hyperplasia	Minimal
* Prostate		Inflammation	Minimal
* Skin		Inflammation	Mild
	[ Inflammation TGLs = 1-16 ]		
* Thymus		Atrophy	Mild
* Thyroid Gland	C Cell	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 31

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** Control

**DISP:** Terminal Sacrifice

**HISTO:** 60201

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Larynx	* Lung	* Lymph Node, Mandibular
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Salivary Glands	* Seminal Vesicle
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Trachea	* Urinary Bladder		

**MISSING**

* Lymph Node, Bronchial	* Mammary Gland	* Parathyroid Gland
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**OBSERVATIONS**

* Islets, Pancreatic		Adenoma	
[ Adenoma TGLs = 5-15 ]			
* Kidney		Nephropathy	Minimal
* Liver		Angiectasis	Minimal
		Hepatocellular Adenoma	
[ Hepatocellular Adenoma TGLs = 3-16 ]			
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
* Pancreas	Acinus	Adenoma	
* Pituitary Gland	Pars Distalis	Adenoma	
[ Adenoma TGLs = 2-10 ]			
* Preputial Gland		Inflammation	Minimal
[ Inflammation TGLs = 4-9 ]			
* Prostate		Inflammation	Minimal
* Skin	Sebaceous GI	Adenoma	
[ Adenoma TGLs = 1-17 ]			
* Thymus		Atrophy	Mild
* Thyroid Gland	Follicle	Hyperplasia	Mild

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 32

TRT#: 1

SEX: Male

DAY ON TEST: 729

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 60202

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Medulla         | Blood Vessel                | * Bone                   | * Bone Marrow              |
| * Brain                   | * Epididymis                | * Esophagus              | * Eye                      |
| * Harderian Gland         | * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic      | * Larynx                    | * Lymph Node, Bronchial  | * Lymph Node, Mandibular   |
| * Lymph Node, Mesenteric  | * Nose                      | * Pancreas               | * Parathyroid Gland        |
| * Pituitary Gland         | * Preputial Gland           | * Prostate               | * Salivary Glands          |
| * Seminal Vesicle         | * Skin                      | * Spleen                 | * Stomach, Forestomach     |
| * Stomach, Glandular      | * Testes                    | * Thyroid Gland          | * Trachea                  |
| * Urinary Bladder         |                             |                          |                            |

MISSING

- |                           |                 |
|---------------------------|-----------------|
| * Lymph Node, Mediastinal | * Mammary Gland |
|---------------------------|-----------------|

OBSERVATIONS

- |                                  |                |                           |                         |
|----------------------------------|----------------|---------------------------|-------------------------|
| * Adrenal Cortex                 |                | Vacuolization Cytoplasmic | Minimal                 |
| * Kidney                         | Pelvis         | Inflammation              | Minimal                 |
| Lacrimal Gland                   |                | Atrophy                   | Mild                    |
| [ Atrophy TGLs = 1-15 ]          |                |                           |                         |
| * Liver                          |                | Clear Cell Focus          |                         |
| [ Clear Cell Focus TGLs = 2-16 ] |                |                           |                         |
| * Lung                           | Alveolar Epith | Fibrosis                  | Minimal                 |
|                                  |                | Hyperplasia               | Minimal                 |
|                                  |                | Infiltration Cellular     | Histiocyte, Minimal     |
|                                  |                | Inflammation              | Chronic Active, Minimal |
| * Thymus                         |                | Atrophy                   | Minimal                 |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 33

TRT#: 1

SEX: Male

DAY ON TEST: 722

DOSE: Control

DISP: Moribund Sacrifice

HISTO: 60203

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex          | * Adrenal Medulla           | Blood Vessel             | * Bone                     |
| * Bone Marrow             | * Epididymis                | * Esophagus              | * Eye                      |
| * Harderian Gland         | * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic      | * Liver                     | * Lymph Node, Bronchial  | * Lymph Node, Mediastinal  |
| * Lymph Node, Mesenteric  | * Pancreas                  | * Salivary Glands        | * Seminal Vesicle          |
| * Skin                    | * Stomach, Forestomach      | * Stomach, Glandular     | * Testes                   |
| * Trachea                 | * Urinary Bladder           |                          |                            |

**MISSING**

- |                          |                 |                     |
|--------------------------|-----------------|---------------------|
| * Lymph Node, Mandibular | * Mammary Gland | * Parathyroid Gland |
|--------------------------|-----------------|---------------------|

**OBSERVATIONS**

- |                   |                                       |                       |                      |
|-------------------|---------------------------------------|-----------------------|----------------------|
| * Brain           |                                       | Compression           | Moderate             |
|                   |                                       | Hydrocephalus         | Moderate             |
| * Kidney          | Pelvis                                | Inflammation          | Minimal              |
|                   |                                       | Nephropathy           | Minimal              |
| * Larynx          |                                       | Infiltration Cellular | Mixed Cell, Minimal  |
| * Lung            |                                       | Infiltration Cellular | Histiocyte, Minimal  |
|                   | [ Infiltration Cellular TGLs = 2-15 ] |                       |                      |
| * Nose            |                                       | Inflammation          | Suppurative, Minimal |
| * Pituitary Gland | Pars Distalis                         | Adenoma               |                      |
|                   | [ Adenoma TGLs = 1-10 ]               |                       |                      |
| * Preputial Gland |                                       | Inflammation          | Mild                 |
| * Prostate        |                                       | Inflammation          | Minimal              |
| * Spleen          | Lymph Follic                          | Atrophy               | Moderate             |
| * Thymus          |                                       | Atrophy               | Mild                 |
| * Thyroid Gland   | C Cell                                | Hyperplasia           | Mild                 |

PRIMARY CAUSE OF DEATH - Pituitary Gland Pars Distalis Adenoma

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 34

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:** 421

**DOSE:** Control

**DISP:** Natural Death

**HISTO:** 60204

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Blood Vessel	* Bone	* Esophagus	* Islets, Pancreatic
* Skin	* Testes		

**MISSING**

\* Mammary Gland

**OBSERVATIONS**

* Adrenal Cortex		Lymphoma Malignant	
* Adrenal Medulla		Lymphoma Malignant	
* Bone Marrow		Lymphoma Malignant	
* Brain		Compression	Moderate
		Lymphoma Malignant	
* Epididymis		Lymphoma Malignant	
* Eye		Lymphoma Malignant	
* Harderian Gland		Lymphoma Malignant	
* Heart		Lymphoma Malignant	
* Intestine Large, Cecum		Lymphoma Malignant	
* Intestine Large, Colon		Lymphoma Malignant	
* Intestine Large, Rectum		Lymphoma Malignant	
* Intestine Small, Duodenum		Lymphoma Malignant	
* Intestine Small, Ileum		Lymphoma Malignant	
* Intestine Small, Jejunum		Lymphoma Malignant	
* Kidney		Lymphoma Malignant	
* Larynx		Lymphoma Malignant	
* Liver		Lymphoma Malignant	
* Lung	Alveolar Epith	Hyperplasia	Minimal
		Lymphoma Malignant	
Lymph Node	Lumbar	Lymphoma Malignant	
	Pancreatic	Lymphoma Malignant	
	[ Lymphoma Malignant	TGLs = 5-17 ]	
	[ Lymphoma Malignant	TGLs = 4-15 ]	
* Lymph Node, Bronchial		Lymphoma Malignant	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 34

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:** 421

**DOSE:** Control

**DISP:** Natural Death

**HISTO:** 60204

**ORGAN AND ACCOUNTABLE SITE STATUS**

* Lymph Node, Mandibular		Lymphoma Malignant	
* Lymph Node, Mediastinal		Lymphoma Malignant	
* Lymph Node, Mesenteric		Lymphoma Malignant	
	[ Lymphoma Malignant TGLs = 6-16 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
		Lymphoma Malignant	
* Pancreas		Lymphoma Malignant	
* Parathyroid Gland		Lymphoma Malignant	
* Pituitary Gland	Pars Distalis	Adenoma	
	Pars Distalis	Lymphoma Malignant	
	[ Adenoma TGLs = 2-10 ]		
* Preputial Gland		Lymphoma Malignant	
* Prostate		Lymphoma Malignant	
* Salivary Glands		Lymphoma Malignant	
* Seminal Vesicle		Lymphoma Malignant	
* Spleen		Lymphoma Malignant	
	[ Lymphoma Malignant TGLs = 3-15 ]		
* Stomach, Forestomach		Lymphoma Malignant	
* Stomach, Glandular		Lymphoma Malignant	
* Thymus		Lymphoma Malignant	
* Thyroid Gland		Lymphoma Malignant	
* Trachea		Lymphoma Malignant	
* Urinary Bladder		Lymphoma Malignant	

PRIMARY CAUSE OF DEATH - Spleen Lymphoma Malignant  
 CONTRIBUTORY CAUSE OF DEATH - Pituitary Gland Pars Distalis Adenoma

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 35

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:** 603

**DOSE:** Control

**DISP:** Moribund Sacrifice

**HISTO:** 60205

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

- |                             |                           |                            |                           |
|-----------------------------|---------------------------|----------------------------|---------------------------|
| Blood Vessel                | * Bone                    | * Bone Marrow              | * Brain                   |
| * Epididymis                | * Esophagus               | * Eye                      | * Harderian Gland         |
| * Heart                     | * Intestine Large, Cecum  | * Intestine Large, Colon   | * Intestine Large, Rectum |
| * Intestine Small, Duodenum | * Intestine Small, Ileum  | * Intestine Small, Jejunum | * Islets, Pancreatic      |
| * Kidney                    | * Larynx                  | * Liver                    | * Lung                    |
| * Lymph Node, Bronchial     | * Lymph Node, Mediastinal | * Lymph Node, Mesenteric   | * Parathyroid Gland       |
| * Pituitary Gland           | * Prostate                | * Salivary Glands          | * Seminal Vesicle         |
| * Stomach, Forestomach      | * Stomach, Glandular      | * Testes                   | * Thyroid Gland           |
| * Trachea                   | * Urinary Bladder         |                            |                           |

**MISSING**

- |                          |                 |
|--------------------------|-----------------|
| * Lymph Node, Mandibular | * Mammary Gland |
|--------------------------|-----------------|

**OBSERVATIONS**

- |                            |               |                                  |                       |
|----------------------------|---------------|----------------------------------|-----------------------|
| * Adrenal Cortex           |               | Vacuolization Cytoplasmic        | Minimal               |
| * Adrenal Medulla          |               | Hyperplasia                      | Minimal               |
| Lymph Node                 | Iliac         | Hyperplasia                      | Plasma Cell, Moderate |
| [ Hyperplasia TGLs = 3-7 ] |               |                                  |                       |
| * Nose                     | Olfactory Epi | Accumulation, Hyaline Droplet    | Minimal               |
| * Pancreas                 | Acinus        | Atrophy                          | Minimal               |
| * Preputial Gland          |               | Inflammation                     | Minimal               |
| * Skin                     |               | Ulcer                            | Mild                  |
| [ Ulcer TGLs = 1,2-15+16 ] |               |                                  |                       |
| * Spleen                   |               | Hematopoietic Cell Proliferation | Mild                  |
| * Thymus                   |               | Atrophy                          | Minimal               |

**PRIMARY CAUSE OF DEATH** - Skin Ulcer

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 36

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** Control

**DISP:** Terminal Sacrifice

**HISTO:** 60206

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex           | * Adrenal Medulla         | Blood Vessel                | * Bone                   |
| * Bone Marrow              | * Brain                   | * Epididymis                | * Esophagus              |
| * Eye                      | * Harderian Gland         | * Heart                     | * Intestine Large, Cecum |
| * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic      | * Liver                     | * Lung                   |
| * Lymph Node, Bronchial    | * Lymph Node, Mandibular  | * Lymph Node, Mediastinal   | * Lymph Node, Mesenteric |
| * Pancreas                 | * Parathyroid Gland       | * Pituitary Gland           | * Preputial Gland        |
| * Salivary Glands          | * Seminal Vesicle         | * Skin                      | * Spleen                 |
| * Stomach, Forestomach     | * Stomach, Glandular      | * Thyroid Gland             | * Trachea                |
| * Urinary Bladder          |                           |                             |                          |

**MISSING**

- \* Mammary Gland

**OBSERVATIONS**

- |            |                      |                               |                   |
|------------|----------------------|-------------------------------|-------------------|
| * Kidney   | Pelvis               | Inflammation                  | Minimal           |
| * Larynx   | Epiglottis           | Metaplasia                    | Squamous, Minimal |
| * Nose     | Olfactory Epi        | Accumulation, Hyaline Droplet | Minimal           |
|            | Transit Epi          | Hyperplasia                   | Minimal           |
| * Prostate |                      | Inflammation                  | Minimal           |
| * Testes   |                      | Edema                         | Mild              |
|            | [ Edema TGLs = 1-9 ] |                               |                   |
| * Thymus   |                      | Atrophy                       | Mild              |

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 37

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** Control

**DISP:** Terminal Sacrifice

**HISTO:** 60207

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

- |                          |                            |                           |                             |
|--------------------------|----------------------------|---------------------------|-----------------------------|
| * Adrenal Cortex         | * Adrenal Medulla          | Blood Vessel              | * Bone                      |
| * Bone Marrow            | * Epididymis               | * Esophagus               | * Eye                       |
| * Intestine Large, Cecum | * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum |
| * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic      | * Larynx                    |
| * Liver                  | * Lymph Node, Bronchial    | * Lymph Node, Mandibular  | * Lymph Node, Mediastinal   |
| * Lymph Node, Mesenteric | * Pancreas                 | * Parathyroid Gland       | * Preputial Gland           |
| * Salivary Glands        | * Seminal Vesicle          | * Skin                    | * Spleen                    |
| * Stomach, Forestomach   | * Stomach, Glandular       | * Testes                  | * Trachea                   |
| * Urinary Bladder        |                            |                           |                             |

**MISSING**

- \* Mammary Gland

**OBSERVATIONS**

- |                   |                                |                |         |
|-------------------|--------------------------------|----------------|---------|
| * Brain           |                                | Compression    | Mild    |
| * Harderian Gland |                                | Inflammation   | Minimal |
| * Heart           |                                | Cardiomyopathy | Mild    |
|                   | [ Cardiomyopathy TGLs = 2-15 ] |                |         |
| * Kidney          |                                | Nephropathy    | Mild    |
| * Lung            | Alveolar Epith                 | Hyperplasia    | Minimal |
| * Nose            | Transit Epithe                 | Hyperplasia    | Minimal |
| * Pituitary Gland | Pars Distalis                  | Adenoma        |         |
|                   | [ Adenoma TGLs = 1-10 ]        |                |         |
| * Prostate        |                                | Inflammation   | Minimal |
| * Thymus          |                                | Thymoma Benign |         |
| * Thyroid Gland   | C Cell                         | Adenoma        |         |
|                   | C Cell                         | Hyperplasia    | Mild    |

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 38

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** Control

**DISP:** Terminal Sacrifice

**HISTO:** 60208

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lung
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Nose	* Pancreas	* Parathyroid Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Thymus	* Trachea	* Urinary Bladder	

**MISSING**

\* Mammary Gland

**OBSERVATIONS**

* Kidney		Nephropathy	Mild
* Liver		Basophilic Focus	
		Clear Cell Focus	
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
* Thyroid Gland	C Cell	Hyperplasia	Minimal



Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 39

TRT#: 1

SEX: Male

DAY ON TEST: 729

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 60209

ORGAN AND ACCOUNTABLE SITE STATUS

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Liver
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Thyroid Gland	* Trachea	* Urinary Bladder	

**MISSING**

* Mammary Gland	* Thymus
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**OBSERVATIONS**

* Kidney	Pelvis	Inflammation	Minimal
* Lung		Fibrosis	Minimal
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Respirat Epith	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 40

TRT#: 1

SEX: Male

DAY ON TEST: 729

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 60210

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Epididymis	* Esophagus	* Eye	* Harderian Gland
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx
* Liver	* Lung	* Lymph Node, Bronchial	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Nose	* Pancreas	* Parathyroid Gland
* Salivary Glands	* Seminal Vesicle	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Trachea	* Urinary Bladder

MISSING

\* Mammary Gland

OBSERVATIONS

* Adrenal Cortex		Vacuolization Cytoplasmic	Minimal
* Brain		Compression	Moderate
		Hydrocephalus	Moderate
* Heart		Cardiomyopathy	Minimal
* Kidney	Pelvis	Inflammation	Minimal
Lymph Node	Lumbar	Hyperplasia	Plasma Cell, Mild
[ Hyperplasia TGLs = 5-16 ]			
* Lymph Node, Mandibular		Hyperplasia	Plasma Cell, Minimal
[ Hyperplasia TGLs = 2-14 ]			
* Pituitary Gland	Pars Distalis	Adenoma	
[ Adenoma TGLs = 4-10 ]			
* Preputial Gland		Cyst	Mild
[ Cyst TGLs = 3-15 ]			
* Prostate		Inflammation	Minimal
* Skin		Ulcer	Mild
[ Ulcer TGLs = 1-15 ]			
* Thymus		Atrophy	Mild
* Thyroid Gland	C Cell	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 41

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:** 535

**DOSE:** Control

**DISP:** Moribund Sacrifice

**HISTO:** 60211

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex          | * Adrenal Medulla           | Blood Vessel             | * Bone                     |
| * Bone Marrow             | * Brain                     | * Epididymis             | * Esophagus                |
| * Eye                     | * Harderian Gland           | * Intestine Large, Cecum | * Intestine Large, Colon   |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic      | * Larynx                    | * Liver                  | * Lung                     |
| * Lymph Node, Bronchial   | * Lymph Node, Mandibular    | * Lymph Node, Mesenteric | * Nose                     |
| * Pancreas                | * Parathyroid Gland         | Peripheral Nerve         | * Pituitary Gland          |
| * Preputial Gland         | * Prostate                  | * Salivary Glands        | * Seminal Vesicle          |
| Skeletal Muscle           | Spinal Cord                 | * Stomach, Forestomach   | * Stomach, Glandular       |
| * Testes                  | * Trachea                   | * Urinary Bladder        |                            |

**MISSING**

- \* Mammary Gland

**INSUFFICIENT TISSUE**

- \* Lymph Node, Mediastinal

**OBSERVATIONS**

- |                 |                       |                                  |         |
|-----------------|-----------------------|----------------------------------|---------|
| * Heart         |                       | Cardiomyopathy                   | Minimal |
| * Kidney        | Pelvis                | Inflammation                     | Minimal |
| * Skin          |                       | Ulcer                            | Mild    |
|                 | [ Ulcer TGLs = 1-15 ] |                                  |         |
| * Spleen        |                       | Hematopoietic Cell Proliferation | Minimal |
| * Thymus        |                       | Thymoma Benign                   |         |
| * Thyroid Gland | Follicle              | Hyperplasia                      | Minimal |

**PRIMARY CAUSE OF DEATH**

- Thymus Thymoma Benign

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 42

TRT#: 1

SEX: Male

DAY ON TEST: 731

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 60212

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Epididymis	* Esophagus	* Harderian Gland
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Larynx	* Lung
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Nose	* Pancreas	* Parathyroid Gland	* Preputial Gland
* Salivary Glands	* Seminal Vesicle	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Trachea	* Urinary Bladder

OBSERVATIONS

* Brain		Compression	Mild
* Eye	Retina	Atrophy	Mild
* Heart		Cardiomyopathy	Mild
* Islets, Pancreatic		Adenoma	
* Kidney		Nephropathy	Marked
	[ Nephropathy TGLs = 4-7+15 ]		
* Liver		Eosinophilic Focus	
* Mammary Gland		Galactocele	Moderate
	[ Galactocele TGLs = 2-16 ]	Hyperplasia	Minimal
* Pituitary Gland	Pars Distalis	Adenoma	
	[ Adenoma TGLs = 3-10 ]		
* Prostate		Inflammation	Mild
* Skin		Cyst Epithelial Inclusion	
	[ Cyst Epithelial Inclusion TGLs = 1-15 ]		
* Thymus		Atrophy	Mild
* Thyroid Gland	C Cell	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 43

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** Control

**DISP:** Terminal Sacrifice

**HISTO:** 60213

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx
* Liver	* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Nose	* Pancreas	* Parathyroid Gland	* Preputial Gland
* Salivary Glands	* Seminal Vesicle	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Testes	* Thymus
* Trachea	* Urinary Bladder		

**MISSING**

* Lymph Node, Mediastinal	* Mammary Gland
---------------------------	-----------------

**OBSERVATIONS**

* Adrenal Cortex		Adenoma	
		Hypertrophy	Minimal
		Vacuolization Cytoplasmic	Minimal
* Harderian Gland		Hyperplasia	Minimal
* Heart		Cardiomyopathy	Minimal
* Kidney	Pelvis	Inflammation	Minimal
		Nephropathy	Mild
* Lung		Infiltration Cellular	Histiocyte, Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
* Prostate		Inflammation	Minimal
* Thyroid Gland	C Cell	Hyperplasia	Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 44

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** Control

**DISP:** Terminal Sacrifice

**HISTO:** 60214

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Liver	* Lung	* Lymph Node, Bronchial
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Pancreas
* Parathyroid Gland	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Trachea	* Urinary Bladder	

**MISSING**

\* Mammary Gland

**OBSERVATIONS**

* Adrenal Cortex		Hypertrophy	Mild
		Vacuolization Cytoplasmic	Minimal
* Epididymis		Mesothelioma Nos	
* Kidney		Nephropathy	Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
* Testes		Mesothelioma Nos	
* Thymus		Atrophy	Mild
* Thyroid Gland	C Cell	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 45

TRT#: 1

SEX: Male

DAY ON TEST: 731

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 60215

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Esophagus	* Eye	* Harderian Gland
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx
* Lung	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Nose	* Pancreas	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Trachea	* Urinary Bladder		

MISSING

* Lymph Node, Bronchial	* Mammary Gland	* Parathyroid Gland
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OBSERVATIONS

* Adrenal Cortex		Angiectasis	Minimal
		Hypertrophy	Minimal
* Epididymis		Mesothelioma Malignant	
[ Mesothelioma Malignant TGLs = 2-9+15 ]			
* Heart		Cardiomyopathy	Mild
* Kidney		Nephropathy	Moderate
[ Nephropathy TGLs = 4-7 ]			
* Liver		Angiectasis	Minimal
[ Angiectasis TGLs = 3-6 ]			
Mesentery	Fat	Necrosis	Minimal
[ Necrosis TGLs = 5-15 ]			
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
* Preputial Gland		Inflammation	Minimal
* Spleen		Hematopoietic Cell Proliferation	Minimal
* Testes		Mesothelioma Malignant	
[ Mesothelioma Malignant TGLs = 1-9+16 ]			
* Thymus		Atrophy	Mild
* Thyroid Gland	C Cell	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 46

TRT#: 1

SEX: Male

DAY ON TEST: 729

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 60216

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Liver	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Trachea	* Urinary Bladder

**MISSING**

* Lymph Node, Bronchial	* Mammary Gland
-------------------------	-----------------

**OBSERVATIONS**

* Adrenal Cortex		Angiectasis	Minimal
* Heart		Cardiomyopathy	Minimal
* Kidney		Nephropathy	Minimal
* Larynx		Foreign Body	
		Inflammation	Chronic Active, Minimal
* Lung		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Moderate
	Goblet Cell	Hyperplasia	Mild
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
* Skin		Cyst Epithelial Inclusion	
	[ Cyst Epithelial Inclusion TGLs = 1-15 ]		
* Thymus		Atrophy	Mild
* Thyroid Gland	C Cell	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 47

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:** 626

**DOSE:** Control

**DISP:** Moribund Sacrifice

**HISTO:** 60217

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

- |                           |                             |                           |                            |
|---------------------------|-----------------------------|---------------------------|----------------------------|
| * Adrenal Cortex          | * Adrenal Medulla           | Blood Vessel              | * Bone                     |
| * Bone Marrow             | * Brain                     | * Epididymis              | * Esophagus                |
| * Eye                     | * Harderian Gland           | * Intestine Large, Cecum  | * Intestine Large, Colon   |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum  | * Intestine Small, Jejunum |
| * Islets, Pancreatic      | * Kidney                    | * Larynx                  | * Liver                    |
| * Lymph Node, Bronchial   | * Lymph Node, Mandibular    | * Lymph Node, Mediastinal | * Lymph Node, Mesenteric   |
| * Pancreas                | * Parathyroid Gland         | * Pituitary Gland         | * Prostate                 |
| * Salivary Glands         | * Seminal Vesicle           | * Spleen                  | * Stomach, Forestomach     |
| * Stomach, Glandular      | * Testes                    | * Thyroid Gland           | * Trachea                  |
| * Urinary Bladder         |                             |                           |                            |

**MISSING**

- |                 |                   |
|-----------------|-------------------|
| * Mammary Gland | * Preputial Gland |
|-----------------|-------------------|

**OBSERVATIONS**

- |          |  |                               |                         |
|----------|--|-------------------------------|-------------------------|
| * Heart  |  | Cardiomyopathy                | Mild                    |
| * Lung   | Alveolar Epith                         | Hyperplasia                   | Minimal                 |
|          |  | Infiltration Cellular         | Histiocyte, Minimal     |
|          |  | Inflammation                  | Chronic Active, Minimal |
|          | [ Infiltration Cellular TGLs = 3-4+5 ] |                               |                         |
| * Nose   | Olfactory Epi                          | Accumulation, Hyaline Droplet | Mild                    |
|          | Respirat Epith                         | Accumulation, Hyaline Droplet | Minimal                 |
| * Skin   |  | Ulcer                         | Mild                    |
|          | [ Ulcer TGLs = 1,2-15+16 ]             |                               |                         |
| * Thymus |  | Atrophy                       | Mild                    |

**PRIMARY CAUSE OF DEATH** - Skin Ulcer

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 48

TRT#: 1

SEX: Male

DAY ON TEST: 535

DOSE: Control

DISP: Moribund Sacrifice

HISTO: 60218

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex           | * Adrenal Medulla         | Blood Vessel                | * Bone                   |
| * Bone Marrow              | * Brain                   | * Epididymis                | * Esophagus              |
| * Eye                      | * Harderian Gland         | * Heart                     | * Intestine Large, Cecum |
| * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic      | * Kidney                    | * Larynx                 |
| * Lymph Node, Mandibular   | * Lymph Node, Mediastinal | * Lymph Node, Mesenteric    | * Parathyroid Gland      |
| Peripheral Nerve           | * Preputial Gland         | * Prostate                  | * Salivary Glands        |
| * Seminal Vesicle          | Skeletal Muscle           | Spinal Cord                 | * Stomach, Forestomach   |
| * Stomach, Glandular       | * Testes                  | * Thymus                    | * Trachea                |
| * Urinary Bladder          |                           |                             |                          |

MISSING

- |                         |                 |
|-------------------------|-----------------|
| * Lymph Node, Bronchial | * Mammary Gland |
|-------------------------|-----------------|

OBSERVATIONS

- |                   |   |                                  |                     |
|-------------------|---|----------------------------------|---------------------|
| * Liver           |   | Angiectasis                      | Minimal             |
|                   |   | Hepatodiaphragmatic Nodule       |                     |
|                   | [ Angiectasis TGLs = 3-6 ]                |                                  |                     |
|                   | [ Hepatodiaphragmatic Nodule TGLs = 4-7 ] |                                  |                     |
| * Lung            |   | Infiltration Cellular            | Histiocyte, Minimal |
|                   | [ Infiltration Cellular TGLs = 5-15 ]     |                                  |                     |
| * Nose            | Olfactory Epi                             | Accumulation, Hyaline Droplet    | Mild                |
|                   | Respirat Epith                            | Accumulation, Hyaline Droplet    | Minimal             |
| * Pancreas        | Acinus                                    | Atrophy                          | Minimal             |
| * Pituitary Gland |   | Cyst                             | Minimal             |
| * Skin            |   | Ulcer                            | Mild                |
|                   | [ Ulcer TGLs = 1,2-15+16 ]                |                                  |                     |
| * Spleen          |   | Hematopoietic Cell Proliferation | Minimal             |
| * Thyroid Gland   | C Cell                                    | Hyperplasia                      | Minimal             |

PRIMARY CAUSE OF DEATH - Skin Ulcer

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 49

TRT#: 1

SEX: Male

DAY ON TEST: 674

DOSE: Control

DISP: Moribund Sacrifice

HISTO: 60219

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lung	* Lymph Node, Bronchial
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Pancreas
* Parathyroid Gland	* Salivary Glands	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Trachea	* Urinary Bladder

MISSING

\* Mammary Gland

OBSERVATIONS

* Brain		Compression	Marked
		Hydrocephalus	Moderate
* Kidney	Pelvis	Inflammation	Minimal
* Liver		Clear Cell Focus	
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
	Transit Epithe	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Adenoma	
[ Adenoma TGLs = 3-10 ]			
* Preputial Gland		Inflammation	Minimal
* Prostate		Inflammation	Mild
* Seminal Vesicle		Inflammation	Mild
* Skin		Ulcer	Mild
[ Ulcer TGLs = 1,2-15+16 ]			
* Thymus		Atrophy	Moderate
* Thyroid Gland	C Cell	Hyperplasia	Minimal

PRIMARY CAUSE OF DEATH - Pituitary Gland Pars Distalis Adenoma

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 50

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:** 542

**DOSE:** Control

**DISP:** Moribund Sacrifice

**HISTO:** 60220

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex          | * Adrenal Medulla           | Blood Vessel             | * Bone                     |
| * Bone Marrow             | * Epididymis                | * Esophagus              | * Eye                      |
| * Harderian Gland         | * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic      | * Larynx                    | * Liver                  | * Lymph Node, Bronchial    |
| * Lymph Node, Mediastinal | * Lymph Node, Mesenteric    | * Pancreas               | * Parathyroid Gland        |
| * Preputial Gland         | * Prostate                  | * Salivary Glands        | * Seminal Vesicle          |
| * Skin                    | * Spleen                    | * Stomach, Forestomach   | * Stomach, Glandular       |
| * Testes                  | * Trachea                   | * Urinary Bladder        |                            |

**MISSING**

- |                          |                 |
|--------------------------|-----------------|
| * Lymph Node, Mandibular | * Mammary Gland |
|--------------------------|-----------------|

**OBSERVATIONS**

- |                   |  |                               |                     |
|-------------------|--|-------------------------------|---------------------|
| * Brain           |  | Compression                   | Moderate            |
|                   |  | Hydrocephalus                 | Mild                |
| * Kidney          |  | Nephropathy                   | Minimal             |
| * Lung            |  | Infiltration Cellular         | Histiocyte, Minimal |
|                   | [ Infiltration Cellular TGLs = 3-4+5 ] |                               |                     |
| * Nose            | Olfactory Epi                          | Accumulation, Hyaline Droplet | Minimal             |
| * Pituitary Gland | Pars Distalis                          | Adenoma                       |                     |
|                   | [ Adenoma TGLs = 2-10 ]                |                               |                     |
| * Thymus          |  | Atrophy                       | Mild                |
| * Thyroid Gland   | C Cell                                 | Hyperplasia                   | Mild                |

**PRIMARY CAUSE OF DEATH** - Pituitary Gland Pars Distalis Adenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

**ANIMAL ID:** 201

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 731

**DOSE:** 10 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60471

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * Adrenal Cortex            | Blood Vessel             | * Bone                     | * Bone Marrow             |
| * Epididymis                | * Esophagus              | * Eye                      | * Harderian Gland         |
| * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   | * Intestine Large, Rectum |
| * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic      |
| * Lymph Node, Bronchial     | * Lymph Node, Mandibular | * Lymph Node, Mediastinal  | * Lymph Node, Mesenteric  |
| * Pancreas                  | * Parathyroid Gland      | * Preputial Gland          | * Prostate                |
| * Salivary Glands           | * Seminal Vesicle        | * Skin                     | * Spleen                  |
| * Stomach, Forestomach      | * Stomach, Glandular     | * Testes                   | * Trachea                 |
| * Urinary Bladder           |                          |                            |                           |

**MISSING**

- \* Mammary Gland

**OBSERVATIONS**

- |                   |  |                               |                         |
|-------------------|--|-------------------------------|-------------------------|
| * Adrenal Medulla |  | Pheochromocytoma Benign       |                         |
| * Brain           |  | Compression                   | Minimal                 |
| * Kidney          | Pelvis                                 | Inflammation                  | Minimal                 |
|                   |  | Nephropathy                   | Minimal                 |
| * Larynx          |  | Infiltration Cellular         | Mixed Cell, Minimal     |
|                   | Epiglottis                             | Metaplasia                    | Squamous, Minimal       |
| * Liver           |  | Clear Cell Focus              |                         |
|                   | [ Clear Cell Focus TGLs = 4-6 ]        |                               |                         |
| * Lung            |  | Fibrosis                      | Minimal                 |
|                   | Alveolar Epith                         | Hyperplasia                   | Minimal                 |
|                   |  | Infiltration Cellular         | Histiocyte, Minimal     |
|                   |  | Inflammation                  | Chronic Active, Minimal |
|                   | [ Infiltration Cellular TGLs = 2-4+5 ] |                               |                         |
| * Nose            | Olfactory Epi                          | Accumulation, Hyaline Droplet | Mild                    |
|                   | Respirat Epith                         | Accumulation, Hyaline Droplet | Minimal                 |
| * Pituitary Gland | Pars Distalis                          | Adenoma                       |                         |
|                   | [ Adenoma TGLs = 1-10 ]                |                               |                         |
| * Thymus          |  | Atrophy                       | Mild                    |

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 201

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 731

**DOSE:** 10 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60471

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* Thyroid Gland

C Cell

Hyperplasia

Minimal

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 202

TRT#: 3

SEX: Male

DAY ON TEST: 730

DOSE: 10 mg/m3

DISP: Terminal Sacrifice

HISTO: 60472

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Trachea	* Urinary Bladder	

MISSING

\* Mammary Gland

OBSERVATIONS

* Adrenal Cortex		Hypertrophy	Minimal
		Vacuolization Cytoplasmic	Minimal
* Harderian Gland		Inflammation	Minimal
* Kidney		Nephropathy	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
	Epiglottis	Metaplasia	Squamous, Minimal
* Liver		Clear Cell Focus	
* Lung		Fibrosis	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Minimal
	[ Infiltration Cellular TGLs = 2-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Moderate
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Mild
Mesentery	Fat	Necrosis	Moderate
	[ Necrosis TGLs = 1-16 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 202

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** 10 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60472

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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	Glands, Olfactory Epi	Hyperplasia	Mild
	Respirat Epith	Hyperplasia	Minimal
	Transit Epithe	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
* Thymus		Atrophy	Mild
* Thyroid Gland	C Cell	Hyperplasia	Mild

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 203

TRT#: 3

SEX: Male

DAY ON TEST: 730

DOSE: 10 mg/m3

DISP: Terminal Sacrifice

HISTO: 60473

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Epididymis	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Kidney	* Lymph Node, Bronchial	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Preputial Gland
* Salivary Glands	* Seminal Vesicle	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Testes	* Trachea
* Urinary Bladder			

MISSING

* Lymph Node, Mandibular	* Mammary Gland
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OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Minimal
* Brain		Granular Cell Tumor Benign	
	[ Granular Cell Tumor Benign TGLs = 1-1 ]		
* Larynx	Epiglottis	Metaplasia	Squamous, Minimal
* Liver		Basophilic Focus	
* Lung		Fibrosis	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Minimal
	[ Infiltration Cellular TGLs = 2-4+5 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild
* Prostate		Inflammation	Minimal
* Thymus		Atrophy	Mild
* Thyroid Gland	C Cell	Hyperplasia	Mild

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 204

TRT#: 3

SEX: Male

DAY ON TEST: 731

DOSE: 10 mg/m3

DISP: Terminal Sacrifice

HISTO: 60474

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Trachea	* Urinary Bladder

**MISSING**

* Lymph Node, Bronchial	* Mammary Gland
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**OBSERVATIONS**

* Adrenal Cortex		Hypertrophy	Minimal
		Vacuolization Cytoplasmic	Minimal
* Kidney		Nephropathy	Mild
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
	Epiglottis	Metaplasia	Squamous, Mild
* Liver		Clear Cell Focus	
* Lung		Fibrosis	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Minimal
	[ Infiltration Cellular TGLs = 2-4+5 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal
		Inflammation	Suppurative, Mild
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
* Spleen		Hematopoietic Cell Proliferation	Minimal
* Testes	Germinal Epith	Atrophy	Marked
	[ Atrophy TGLs = 1-9 ]		

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 204

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 731

**DOSE:** 10 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60474

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* Thyroid Gland

C Cell

Hyperplasia

Mild

---

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 205

TRT#: 3

SEX: Male

DAY ON TEST: 729

DOSE: 10 mg/m3

DISP: Terminal Sacrifice

HISTO: 60475

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Epididymis	* Esophagus	* Eye	* Harderian Gland
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Liver
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	* Preputial Gland	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Trachea	* Urinary Bladder	

MISSING

\* Mammary Gland

OBSERVATIONS

* Adrenal Cortex		Hypertrophy	Minimal
* Brain		Compression	Minimal
* Heart		Cardiomyopathy	Minimal
* Kidney	Pelvis	Inflammation	Minimal
		Nephropathy	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
	Epiglottis	Metaplasia	Squamous, Minimal
* Lung		Fibrosis	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Minimal
	Alveolus	Proteinosis	Minimal
	[ Infiltration Cellular TGLs = 4-4+5 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild
		Inflammation	Suppurative, Mild
	Olfactory Epi	Metaplasia	Squamous, Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 205

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** 10 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60475

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Pituitary Gland [ Adenoma TGLs = 1-10 ]	Pars Distalis	Adenoma	
* Prostate		Inflammation	Minimal
* Testes [ Adenoma TGLs = 3-9 ]	Interstit Cell	Adenoma	
* Thymus [ Thymoma Benign TGLs = 5-3 ]		Thymoma Benign	
* Thyroid Gland	C Cell	Hyperplasia	Mild
	Follicle	Hyperplasia	Minimal

---

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 206

TRT#: 3

SEX: Male

DAY ON TEST: 715

DOSE: 10 mg/m3

DISP: Moribund Sacrifice

HISTO: 60476

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Liver
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Pancreas
* Parathyroid Gland	* Preputial Gland	* Salivary Glands	* Seminal Vesicle
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

**MISSING**

\* Mammary Gland

**OBSERVATIONS**

* Adrenal Cortex		Hypertrophy	Minimal
		Vacuolization Cytoplasmic	Minimal
* Heart		Cardiomyopathy	Minimal
* Islets, Pancreatic		Adenoma	
	[ Adenoma TGLs = 4-15 ]		
* Kidney		Nephropathy	Mild
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
	Epiglottis	Metaplasia	Squamous, Mild
* Lung		Fibrosis	Minimal
	Alveolar Epith	Hyperplasia	Minimal
	BALT	Hyperplasia	Lymphohistiocy, Minimal
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Minimal
	Mediastinum	Inflammation	Chronic, Mild
	[ Infiltration Cellular TGLs = 3-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 206

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 715

**DOSE:** 10 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60476

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

	Glands, Olfactory Epi	Hyperplasia	Mild
		Inflammation	Suppurative, Mild
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
* Prostate		Inflammation	Minimal
* Skin		Ulcer	Moderate

[ Ulcer TGLs = 1,2-15+16 ]

---

**PRIMARY CAUSE OF DEATH** - Lung Mediastinum Inflammation

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 207

TRT#: 3

SEX: Male

DAY ON TEST: 690

DOSE: 10 mg/m3

DISP: Moribund Sacrifice

HISTO: 60477

ORGAN AND ACCOUNTABLE SITE STATUS

**NORMAL**

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex           | * Adrenal Medulla         | Blood Vessel                | * Bone                   |
| * Bone Marrow              | * Brain                   | * Epididymis                | * Esophagus              |
| * Eye                      | * Harderian Gland         | * Heart                     | * Intestine Large, Cecum |
| * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic      | * Lymph Node, Bronchial     | * Lymph Node, Mandibular |
| * Lymph Node, Mesenteric   | * Pancreas                | * Parathyroid Gland         | * Preputial Gland        |
| * Salivary Glands          | * Seminal Vesicle         | * Skin                      | * Spleen                 |
| * Stomach, Forestomach     | * Stomach, Glandular      | * Testes                    | * Thymus                 |
| * Trachea                  | * Urinary Bladder         |                             |                          |

**MISSING**

- \* Mammary Gland

**OBSERVATIONS**

- |                           |  |                               |                         |
|---------------------------|--|-------------------------------|-------------------------|
| * Kidney                  |  | Nephropathy                   | Moderate                |
| * Larynx                  | Epiglottis                             | Hyperplasia                   | Squamous, Minimal       |
|                           | Epiglottis                             | Metaplasia                    | Squamous, Mild          |
| * Liver                   |  | Basophilic Focus              |                         |
| * Lung                    |  | Fibrosis                      | Minimal                 |
|                           | Alveolar Epith                         | Hyperplasia                   | Minimal                 |
|                           |  | Infiltration Cellular         | Histiocyte, Mild        |
|                           |  | Inflammation                  | Chronic Active, Minimal |
|                           | [ Infiltration Cellular TGLs = 1-4+5 ] |                               |                         |
| * Lymph Node, Mediastinal |  | Hyperplasia                   | Lymphohistiocy, Minimal |
| * Nose                    | Olfactory Epi                          | Accumulation, Hyaline Droplet | Moderate                |
|                           | Respirat Epith                         | Accumulation, Hyaline Droplet | Mild                    |
|                           | Goblet Cell                            | Hyperplasia                   | Minimal                 |
|                           | Glands, Olfactory Epi                  | Hyperplasia                   | Mild                    |
|                           |  | Inflammation                  | Suppurative, Minimal    |
| * Pituitary Gland         | Pars Distalis                          | Adenoma                       |                         |
|                           | [ Adenoma TGLs = 2-10 ]                |                               |                         |
| * Prostate                |  | Inflammation                  | Minimal                 |

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

---

**ANIMAL ID:** 207

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 690

**DOSE:** 10 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60477

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* Thyroid Gland

C Cell

Hyperplasia

Mild

---

PRIMARY CAUSE OF DEATH - Pituitary Gland Pars Distalis Adenoma

CONTRIBUTORY CAUSE OF DEATH - Kidney Nephropathy

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 208

TRT#: 3

SEX: Male

DAY ON TEST: 729

DOSE: 10 mg/m3

DISP: Terminal Sacrifice

HISTO: 60478

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Trachea	* Urinary Bladder	

MISSING

\* Mammary Gland

OBSERVATIONS

* Adrenal Cortex		Hypertrophy	Minimal
* Heart		Cardiomyopathy	Minimal
* Kidney		Nephropathy	Minimal
* Larynx	Epiglottis	Metaplasia	Squamous, Minimal
* Liver		Basophilic Focus	
		Clear Cell Focus	
	Bile Duct	Hyperplasia	Minimal
		Inflammation	Granulomatous, Minimal
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Minimal
	[ Infiltration Cellular TGLs = 1,2-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Mild
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 208

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** 10 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60478

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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	Glands, Olfactory Epi	Hyperplasia	Mild
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
* Thymus		Atrophy	Mild
* Thyroid Gland	C Cell	Hyperplasia	Minimal
	Follicle	Hyperplasia	Minimal

---

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 209

TRT#: 3

SEX: Male

DAY ON TEST: 731

DOSE: 10 mg/m3

DISP: Terminal Sacrifice

HISTO: 60479

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Harderian Gland
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Lymph Node, Bronchial
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Pancreas
* Parathyroid Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Stomach, Forestomach	* Stomach, Glandular	* Trachea	* Urinary Bladder

MISSING

\* Mammary Gland

OBSERVATIONS

* Adrenal Cortex		Vacuolization Cytoplasmic	Minimal
* Eye	Retina	Atrophy	Mild
* Heart		Cardiomyopathy	Minimal
* Kidney		Nephropathy	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
	Epiglottis	Infiltration Cellular	Mixed Cell, Minimal
		Metaplasia	Squamous, Minimal
* Liver		Clear Cell Focus	
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Minimal
Lymph Node	Lumbar	Hyperplasia	Plasma Cell, Mild
[ Hyperplasia TGLs = 2-7 ]			
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 209

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 731

**DOSE:** 10 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60479

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Preputial Gland		Inflammation	Minimal
* Skin		Ulcer	Mild
	[ Ulcer TGLs = 1-15 ]		
* Spleen		Hematopoietic Cell Proliferation	Minimal
* Testes	Germinal Epith	Atrophy	Mild
* Thymus		Atrophy	Minimal
* Thyroid Gland	C Cell	Hyperplasia	Mild

---

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 210

TRT#: 3

SEX: Male

DAY ON TEST: 730

DOSE: 10 mg/m3

DISP: Terminal Sacrifice

HISTO: 60480

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Blood Vessel	* Bone	* Bone Marrow	* Brain
* Epididymis	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Kidney	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Trachea	* Urinary Bladder	

MISSING

\* Mammary Gland

OBSERVATIONS

* Adrenal Cortex		Vacuolization Cytoplasmic	Minimal
* Adrenal Medulla		Pheochromocytoma Benign	
* Larynx	Epiglottis	Metaplasia	Squamous, Minimal
* Liver	[ Hepatocellular Adenoma TGLs = 3-7 ]	Hepatocellular Adenoma	
* Lung	Alveolar Epith	Fibrosis	Minimal
		Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Minimal
	[ Infiltration Cellular TGLs = 2-4+5 ]		
Lymph Node	Lumbar	Hyperplasia	Plasma Cell, Moderate
	[ Hyperplasia TGLs = 4-15 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Minimal
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Respirat Epith	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 210

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** 10 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60480

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Skin		Ulcer	Mild
[ Ulcer TGLs = 1-15 ]			
* Spleen		Hematopoietic Cell Proliferation	Minimal
* Thymus		Atrophy	Mild
* Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Mild

---

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 211

TRT#: 3

SEX: Male

DAY ON TEST: 731

DOSE: 10 mg/m3

DISP: Terminal Sacrifice

HISTO: 60481

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Liver	* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	* Preputial Gland	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Trachea	* Urinary Bladder

MISSING

* Lymph Node, Mediastinal	* Mammary Gland
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OBSERVATIONS

* Adrenal Cortex		Hypertrophy	Mild
		Vacuolization Cytoplasmic	Minimal
* Epididymis		Granuloma Sperm	Mild
	[ Granuloma Sperm TGLs = 1,2-16+17 ]		
* Kidney		Nephropathy	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
	Epiglottis	Metaplasia	Squamous, Mild
* Lung	Alveolar Epith	Hyperplasia	Minimal
		Hyperplasia	Lymphohistiocy, Minimal
	Alv/Bron Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild
	Respirat Epith	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Mild

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 211

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 731

**DOSE:** 10 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60481

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

* Prostate		Inflammation	Minimal
* Testes	Germinal Epith	Atrophy	Mild
* Thyroid Gland	C Cell	Hyperplasia	Mild
	Follicle	Hyperplasia	Minimal

---

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 212

TRT#: 3

SEX: Male

DAY ON TEST: 684

DOSE: 10 mg/m3

DISP: Moribund Sacrifice

HISTO: 60482

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Epididymis	* Esophagus	* Eye	* Harderian Gland
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Liver
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Pancreas	* Salivary Glands	* Seminal Vesicle
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

\* Parathyroid Gland

OBSERVATIONS

* Adrenal Cortex		Hypertrophy	Minimal
		Vacuolization Cytoplasmic	Minimal
* Brain		Compression	Marked
		Hydrocephalus	Mild
* Heart		Cardiomyopathy	Minimal
* Kidney	Pelvis	Inflammation	Mild
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
	Epiglottis	Metaplasia	Squamous, Moderate
* Lung		Fibrosis	Minimal
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Minimal
	[ Infiltration Cellular TGLs = 2-4+5 ]		
Mesentery	Fat	Necrosis	Mild
	[ Necrosis TGLs = 4-14 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Adenoma	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 212

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 684

**DOSE:** 10 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60482

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Adenoma TGLs = 3-10 ]

\* Preputial Gland

Inflammation

Minimal

\* Prostate

Inflammation

Mild

\* Thymus

Atrophy

Marked

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**PRIMARY CAUSE OF DEATH** - Pituitary Gland Pars Distalis Adenoma

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 213

TRT#: 3

SEX: Male

DAY ON TEST: 730

DOSE: 10 mg/m3

DISP: Terminal Sacrifice

HISTO: 60483

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Pancreas	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Trachea	* Urinary Bladder	

MISSING

\* Mammary Gland

OBSERVATIONS

* Adrenal Cortex		Vacuolization Cytoplasmic	Minimal
* Kidney		Nephropathy	Minimal
* Larynx	Epiglottis	Metaplasia	Squamous, Minimal
* Liver	[ Mixed Cell Focus TGLs = 2-15 ]	Mixed Cell Focus	
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Minimal
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Glands, Olfactory Epi	Hyperplasia	Mild
		Inflammation	Suppurative, Minimal
* Parathyroid Gland		Hyperplasia	Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
* Testes	Germinal Epith	Atrophy	Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 213

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** 10 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60483

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* Thymus

Atrophy

Mild

\* Thyroid Gland

C Cell

Hyperplasia

Minimal

---

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 214

TRT#: 3

SEX: Male

DAY ON TEST: 589

DOSE: 10 mg/m3

DISP: Moribund Sacrifice

HISTO: 60484

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex          | * Adrenal Medulla           | Blood Vessel             | * Bone                     |
| * Bone Marrow             | * Brain                     | * Epididymis             | * Esophagus                |
| * Eye                     | * Harderian Gland           | * Intestine Large, Cecum | * Intestine Large, Colon   |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic      | * Kidney                    | * Liver                  | * Lymph Node, Mandibular   |
| * Lymph Node, Mesenteric  | * Mammary Gland             | * Pancreas               | * Parathyroid Gland        |
| * Preputial Gland         | * Prostate                  | * Salivary Glands        | * Seminal Vesicle          |
| * Skin                    | * Stomach, Forestomach      | * Stomach, Glandular     | * Testes                   |
| * Thyroid Gland           | * Trachea                   | * Urinary Bladder        |                            |

**MISSING**

- \* Lymph Node, Bronchial

**OBSERVATIONS**

- |                           |                       |                                  |                         |
|---------------------------|-----------------------|----------------------------------|-------------------------|
| * Heart                   |                       | Cardiomyopathy                   | Minimal                 |
| * Larynx                  | Epiglottis            | Metaplasia                       | Squamous, Minimal       |
| * Lung                    |                       | Fibrosis                         | Minimal                 |
|                           |                       | Infiltration Cellular            | Histiocyte, Minimal     |
|                           |                       | Inflammation                     | Chronic Active, Minimal |
| * Lymph Node, Mediastinal |                       | Hyperplasia                      | Lymphohistiocy, Minimal |
| * Nose                    | Olfactory Epi         | Accumulation, Hyaline Droplet    | Moderate                |
|                           | Respirat Epith        | Accumulation, Hyaline Droplet    | Minimal                 |
|                           | Goblet Cell           | Hyperplasia                      | Minimal                 |
|                           | Glands, Olfactory Epi | Hyperplasia                      | Mild                    |
|                           |                       | Inflammation                     | Suppurative, Mild       |
| * Pituitary Gland         | Pars Distalis         | Hyperplasia                      | Minimal                 |
| * Spleen                  |                       | Hematopoietic Cell Proliferation | Minimal                 |
| * Thymus                  |                       | Thymoma Benign                   |                         |

[ Thymoma Benign TGLs = 1-15 ]

PRIMARY CAUSE OF DEATH - Thymus Thymoma Benign

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 215

TRT#: 3

SEX: Male

DAY ON TEST: 730

DOSE: 10 mg/m3

DISP: Terminal Sacrifice

HISTO: 60485

ORGAN AND ACCOUNTABLE SITE STATUS

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Liver	* Lymph Node, Bronchial
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Salivary Glands	* Seminal Vesicle
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Thyroid Gland	* Trachea	* Urinary Bladder	

**MISSING**

\* Mammary Gland

**OBSERVATIONS**

* Adrenal Cortex		Vacuolization Cytoplasmic	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Mild
* Lung		Fibrosis	Minimal
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Minimal
	[ Infiltration Cellular TGLs = 4-4+5 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Preputial Gland		Inflammation	Minimal
* Prostate		Inflammation	Minimal
Skeletal Muscle		Rhabdomyosarcoma	
	[ Rhabdomyosarcoma TGLs = 3-17 ]		
* Skin	Epidermis	Squamous Cell Papilloma	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 215

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** 10 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60485

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Ulcer

Mild

[ Squamous Cell Papilloma TGLs = 2-16 ]

[ Ulcer TGLs = 1-15 ]

Atrophy

Minimal

---

\* Thymus



Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 216

TRT#: 3

SEX: Male

DAY ON TEST: 731

DOSE: 10 mg/m3

DISP: Terminal Sacrifice

HISTO: 60486

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Pancreas	* Pituitary Gland
* Preputial Gland	* Salivary Glands	* Seminal Vesicle	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Trachea	* Urinary Bladder		

MISSING

\* Parathyroid Gland

OBSERVATIONS

* Adrenal Cortex		Hypertrophy	Minimal
		Vacuolization Cytoplasmic	Minimal
* Kidney	Renal Tubule	Cyst	Minimal
		Infarct	Mild
	Pelvis	Inflammation	Minimal
		Nephropathy	Minimal
	[ Infarct TGLs = 4-7 ]		
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
	Epiglottis	Metaplasia	Squamous, Minimal
* Liver		Angiectasis	Minimal
		Clear Cell Focus	
	[ Angiectasis TGLs = 1,2,3-6+15+16 ]		
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Minimal
	[ Infiltration Cellular TGLs = 5-4+5 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 216

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 731

**DOSE:** 10 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60486

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild
		Inflammation	Suppurative, Minimal
* Prostate		Atrophy	Minimal
		Fibrosis	Minimal
* Thymus		Atrophy	Minimal
* Thyroid Gland	C Cell	Hyperplasia	Minimal
	Follicle	Hyperplasia	Marked

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 217

TRT#: 3

SEX: Male

DAY ON TEST: 702

DOSE: 10 mg/m3

DISP: Moribund Sacrifice

HISTO: 60487

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Liver	* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland
Peripheral Nerve	* Preputial Gland	* Salivary Glands	* Seminal Vesicle
Skeletal Muscle	Spinal Cord	* Stomach, Forestomach	* Stomach, Glandular
* Trachea	* Urinary Bladder		

MISSING

* Lymph Node, Mandibular	* Mammary Gland
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OBSERVATIONS

* Brain		Compression	Mild
* Heart		Cardiomyopathy	Mild
* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Mild
* Lung		Fibrosis	Minimal
	Alveolar Epith	Hyperplasia	Mild
	Alv/Bron Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Minimal
	[ Infiltration Cellular TGLs = 1-4+5 ]		
Lymph Node	Lumbar	Hyperplasia	Plasma Cell, Moderate
	[ Hyperplasia TGLs = 7-15 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Minimal
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 217

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 702

**DOSE:** 10 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60487

**ORGAN AND ACCOUNTABLE SITE STATUS**

	Respirat Epith	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild
	Transit Epithe	Hyperplasia	Minimal
		Inflammation	Suppurative, Mild
* Pituitary Gland	Pars Distalis	Adenoma	
	[ Adenoma TGLs = 2-10 ]		
* Prostate		Inflammation	Minimal
* Skin		Ulcer	Mild
	[ Ulcer TGLs = 5,6-16+17 ]		
* Spleen		Cyst	Mild
	[ Cyst TGLs = 3-15 ]		
* Testes		Edema	Mild
	[ Edema TGLs = 4-9 ]		
* Thymus		Atrophy	Moderate
* Thyroid Gland	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH - Pituitary Gland Pars Distalis Adenoma

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 218

TRT#: 3

SEX: Male

DAY ON TEST: 729

DOSE: 10 mg/m3

DISP: Terminal Sacrifice

HISTO: 60488

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Liver	* Lymph Node, Bronchial	* Lymph Node, Mandibular
* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Testes	* Trachea
* Urinary Bladder			

MISSING

\* Mammary Gland

OBSERVATIONS

* Adrenal Cortex		Hypertrophy	Minimal
		Vacuolization Cytoplasmic	Minimal
* Kidney		Nephropathy	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
	Epiglottis	Metaplasia	Squamous, Mild
* Lung		Fibrosis	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Minimal
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Minimal
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Hyperplasia	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 218

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** 10 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60488

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Preputial Gland		Inflammation	Minimal
* Thymus		Atrophy	Moderate
* Thyroid Gland	C Cell	Hyperplasia	Minimal

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 219

TRT#: 3

SEX: Male

DAY ON TEST: 705

DOSE: 10 mg/m3

DISP: Moribund Sacrifice

HISTO: 60489

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Epididymis	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Liver	* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Mammary Gland	* Pancreas	Peripheral Nerve	* Pituitary Gland
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
Skeletal Muscle	* Skin	Spinal Cord	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

\* Parathyroid Gland

OBSERVATIONS

* Adrenal Cortex		Hypertrophy	Minimal
		Vacuolization Cytoplasmic	Minimal
* Brain		Hydrocephalus	Moderate
[ Hydrocephalus TGLs = 1-1 ]			
* Kidney	Pelvis	Inflammation	Minimal
		Nephropathy	Minimal
* Larynx	Epiglottis	Metaplasia	Squamous, Minimal
* Lung		Infiltration Cellular	Histiocyte, Minimal
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
		Inflammation	Suppurative, Minimal
* Testes	Germinal Epith	Atrophy	Mild

PRIMARY CAUSE OF DEATH - Brain Hydrocephalus

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 220

TRT#: 3

SEX: Male

DAY ON TEST: 729

DOSE: 10 mg/m3

DISP: Terminal Sacrifice

HISTO: 60490

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Trachea	* Urinary Bladder

MISSING

\* Mammary Gland

OBSERVATIONS

* Adrenal Cortex		Vacuolization Cytoplasmic	Minimal
* Harderian Gland		Hyperplasia	Minimal
* Kidney		Nephropathy	Minimal
* Larynx	Epiglottis	Metaplasia	Squamous, Minimal
* Liver		Clear Cell Focus	
* Lung	Alveolar Epith	Fibrosis	Minimal
		Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Minimal
	[ Infiltration Cellular TGLs = 2-4+5 ]		
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
* Skin		Cyst Epithelial Inclusion	
	[ Cyst Epithelial Inclusion TGLs = 1-15 ]		
* Thymus		Atrophy	Mild
* Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 221

TRT#: 3

SEX: Male

DAY ON TEST: 673

DOSE: 10 mg/m3

DISP: Moribund Sacrifice

HISTO: 60491

ORGAN AND ACCOUNTABLE SITE STATUS

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Liver
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Trachea	* Urinary Bladder	

**MISSING**

\* Mammary Gland

**OBSERVATIONS**

* Larynx	Epiglottis	Metaplasia	Squamous, Minimal
* Lung		Fibrosis	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Minimal
	[ Infiltration Cellular TGLs = 4-4+5 ]		
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Skin	Subcut Tiss	Fibroma	
		Ulcer	Mild
	[ Fibroma TGLs = 3-15 ]		
	[ Ulcer TGLs = 1,2-16+17 ]		
* Spleen		Hematopoietic Cell Proliferation	Minimal
* Thymus		Atrophy	Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 221

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 673

**DOSE:** 10 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60491

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* Thyroid Gland

C Cell

Hyperplasia

Minimal

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PRIMARY CAUSE OF DEATH

- Skin Subcut Tiss Fibroma

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 222

TRT#: 3

SEX: Male

DAY ON TEST: 729

DOSE: 10 mg/m3

DISP: Terminal Sacrifice

HISTO: 60492

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Liver	* Lymph Node, Mandibular
* Pancreas	* Pituitary Gland	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Testes	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Mammary Gland	* Parathyroid Gland
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OBSERVATIONS

* Eye	Retina	Atrophy	Mild
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
	Epiglottis	Metaplasia	Squamous, Minimal
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Minimal
	[ Infiltration Cellular TGLs = 2,3-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Minimal
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Mild
* Lymph Node, Mesenteric		Hemangiosarcoma	
	[ Hemangiosarcoma TGLs = 4-15 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild
		Inflammation	Suppurative, Minimal
* Thymus		Atrophy	Mild

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 223

TRT#: 3

SEX: Male

DAY ON TEST: 729

DOSE: 10 mg/m3

DISP: Terminal Sacrifice

HISTO: 60493

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lymph Node, Bronchial	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Trachea	* Urinary Bladder	

MISSING

\* Mammary Gland

OBSERVATIONS

* Adrenal Cortex		Hypertrophy	Minimal
		Vacuolization Cytoplasmic	Minimal
* Heart		Cardiomyopathy	Minimal
* Kidney		Nephropathy	Minimal
* Larynx	Epiglottis	Metaplasia	Squamous, Minimal
* Liver		Basophilic Focus	
		Clear Cell Focus	
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Minimal
	[ Infiltration Cellular TGLs = 4-4+5 ]		
Lymph Node	Iliac	Hyperplasia	Plasma Cell, Moderate
	[ Hyperplasia TGLs = 3-15 ]		
* Lymph Node, Mandibular		Hyperplasia	Plasma Cell, Moderate
	[ Hyperplasia TGLs = 2-14 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
Test Type: CHRONIC  
Route: RESPIRATORY EXPOSURE WHOLE BODY  
Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Metal working fluids (Trim VX)  
CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
Time Report Requested: 09:56:24  
First Dose M/F: 07/20/09 / 07/20/09  
Lab: BNW

ANIMAL ID: 223

TRT#: 3

SEX: Male

DAY ON TEST: 729

DOSE: 10 mg/m3

DISP: Terminal Sacrifice

HISTO: 60493

ORGAN AND ACCOUNTABLE SITE STATUS

	Glands, Olfactory Epi	Hyperplasia	Mild
		Inflammation	Suppurative, Minimal
* Preputial Gland		Inflammation	Minimal
* Skin		Inflammation	Mild
	[ Inflammation TGLs = 1-16 ]		
* Thymus		Atrophy	Mild
* Thyroid Gland	C Cell	Hyperplasia	Minimal

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 224

TRT#: 3

SEX: Male

DAY ON TEST: 730

DOSE: 10 mg/m3

DISP: Terminal Sacrifice

HISTO: 60494

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland	* Preputial Gland
* Salivary Glands	* Seminal Vesicle	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Trachea	* Urinary Bladder	

MISSING

\* Mammary Gland

OBSERVATIONS

* Brain		Compression	Moderate
		Hydrocephalus	Moderate
* Larynx	Epiglottis	Metaplasia	Squamous, Minimal
* Liver		Basophilic Focus	
* Lung		Fibrosis	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Minimal
	[ Infiltration Cellular TGLs = 4-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
	Transit Epithe	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
	Transit Epithe	Metaplasia	Squamous, Minimal
* Pituitary Gland	Pars Distalis	Adenoma	
	[ Adenoma TGLs = 3-10 ]		
* Prostate		Inflammation	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 224

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** 10 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60494

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Skin		Ulcer	Mild
[ Ulcer TGLs = 1-15 ]			
* Testes	Germinal Epith	Atrophy	Minimal
		Edema	Mild
[ Edema TGLs = 2-9 ]			
* Thymus		Atrophy	Moderate
* Thyroid Gland	C Cell	Adenoma	

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 225

TRT#: 3

SEX: Male

DAY ON TEST: 571

DOSE: 10 mg/m3

DISP: Moribund Sacrifice

HISTO: 60495

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Liver
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Thymus	* Trachea	* Urinary Bladder

MISSING

\* Mammary Gland

OBSERVATIONS

* Larynx	Epiglottis	Metaplasia	Squamous, Mild
* Lung		Fibrosis	Minimal
	Alveolar Epith	Hyperplasia	Moderate
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Minimal
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Glands, Olfactory Epi	Hyperplasia	Minimal
	Goblet Cell	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Preputial Gland		Inflammation	Minimal
* Skin	Subcut Tiss	Schwannoma Malignant	
	[ Schwannoma Malignant TGLs = 2-15 ]		
* Thyroid Gland	C Cell	Hyperplasia	Minimal

PRIMARY CAUSE OF DEATH - Skin Subcut Tiss Schwannoma Malignant

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 226

TRT#: 3

SEX: Male

DAY ON TEST: 730

DOSE: 10 mg/m3

DISP: Terminal Sacrifice

HISTO: 60496

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Mammary Gland
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Testes	* Thymus
* Trachea	* Urinary Bladder		

MISSING

\* Lymph Node, Mediastinal

OBSERVATIONS

* Adrenal Cortex		Vacuolization Cytoplasmic	Minimal
* Kidney		Nephropathy	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
	Epiglottis	Metaplasia	Squamous, Minimal
* Liver		Basophilic Focus	
		Clear Cell Focus	
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Minimal
	[ Infiltration Cellular TGLs = 2-4+5 ]		
	Lymph Node Iliac	Hyperplasia	Plasma Cell, Moderate
	[ Hyperplasia TGLs = 3,4-16+17 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 226

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** 10 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60496

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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	Glands, Olfactory Epi	Hyperplasia	Minimal
* Skin		Inflammation	Suppurative, Minimal
		Ulcer	Mild
	[ Ulcer TGLs = 1-15 ]		
* Thyroid Gland	C Cell	Hyperplasia	Minimal

---

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 227

TRT#: 3

SEX: Male

DAY ON TEST: 731

DOSE: 10 mg/m3

DISP: Terminal Sacrifice

HISTO: 60497

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Trachea	* Urinary Bladder		

MISSING

\* Mammary Gland

OBSERVATIONS

* Adrenal Cortex		Hypertrophy	Mild
		Vacuolization Cytoplasmic	Minimal
* Harderian Gland		Cyst	Minimal
* Kidney		Necrosis	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
	Epiglottis	Metaplasia	Squamous, Mild
* Liver		Clear Cell Focus	
	[ Clear Cell Focus TGLs = 4-6 ]		
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Minimal
	[ Infiltration Cellular TGLs = 5-4 ]		
Lymph Node	Lumbar	Hyperplasia	Plasma Cell, Minimal
	[ Hyperplasia TGLs = 6-17 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
Test Type: CHRONIC  
Route: RESPIRATORY EXPOSURE WHOLE BODY  
Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
Time Report Requested: 09:56:24  
First Dose M/F: 07/20/09 / 07/20/09  
Lab: BNW

ANIMAL ID: 227

TRT#: 3

SEX: Male

DAY ON TEST: 731

DOSE: 10 mg/m3

DISP: Terminal Sacrifice

HISTO: 60497

**ORGAN AND ACCOUNTABLE SITE STATUS**

	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild
		Inflammation	Suppurative, Minimal
* Preputial Gland		Inflammation	Minimal
* Skin		Cyst Epithelial Inclusion	
		Ulcer	Mild
	[ Cyst Epithelial Inclusion TGLs = 2-16 ]		
	[ Ulcer TGLs = 1-15 ]		
* Testes	Germinal Epith	Atrophy	Mild
	[ Atrophy TGLs = 3-9 ]		
* Thymus		Atrophy	Mild
* Thyroid Gland	Follicle	Adenoma	
	C Cell	Hyperplasia	Mild

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 228

TRT#: 3

SEX: Male

DAY ON TEST: 730

DOSE: 10 mg/m3

DISP: Terminal Sacrifice

HISTO: 60498

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Parathyroid Gland	* Preputial Gland	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

\* Mammary Gland

OBSERVATIONS

* Adrenal Cortex		Vacuolization Cytoplasmic	Minimal
* Kidney	Pelvis	Inflammation	Minimal
		Nephropathy	Mild
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
	Epiglottis	Metaplasia	Squamous, Minimal
* Liver		Angiectasis	Minimal
		Basophilic Focus	
		Clear Cell Focus	
* Lung	[ Angiectasis TGLs = 3-6 ]	Alveolar Epith	Hyperplasia
			Infiltration Cellular
			Inflammation
	[ Infiltration Cellular TGLs = 1-4+5 ]		Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Histiocyte, Mild
	Respirat Epith	Accumulation, Hyaline Droplet	Chronic Active, Minimal
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild
		Inflammation	Suppurative, Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 228

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** 10 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60498

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Pancreas	Acinus	Atrophy	Mild
* Pituitary Gland	Pars Distalis	Adenoma	
[ Adenoma TGLs = 2-10 ]			
* Prostate		Inflammation	Minimal
* Thymus		Atrophy	Mild

---

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 229

TRT#: 3

SEX: Male

DAY ON TEST: 731

DOSE: 10 mg/m3

DISP: Terminal Sacrifice

HISTO: 60499

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Testes	* Trachea
* Urinary Bladder			

MISSING

\* Mammary Gland

OBSERVATIONS

* Adrenal Cortex		Vacuolization Cytoplasmic	Minimal
* Eye	Retina	Atrophy	Mild
* Kidney	Pelvis	Inflammation	Minimal
		Nephropathy	Minimal
* Larynx	Epiglottis	Metaplasia	Squamous, Minimal
* Liver		Clear Cell Focus	
* Lung		Fibrosis	Minimal
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Minimal
	[ Infiltration Cellular TGLs = 1-5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Glands, Olfactory Epi	Hyperplasia	Mild
	Goblet Cell	Hyperplasia	Minimal
	Transit Epithe	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 229

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 731

**DOSE:** 10 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60499

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* Thymus

Thymoma Benign

[ Thymoma Benign TGLs = 2-3 ]

\* Thyroid Gland

C Cell

Hyperplasia

Mild

---



Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 230

TRT#: 3

SEX: Male

DAY ON TEST: 730

DOSE: 10 mg/m3

DISP: Terminal Sacrifice

HISTO: 60500

ORGAN AND ACCOUNTABLE SITE STATUS

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Trachea	* Urinary Bladder	

**MISSING**

\* Mammary Gland

**INSUFFICIENT TISSUE**

\* Lymph Node, Bronchial

**OBSERVATIONS**

* Eye	Retina	Atrophy	Mild
* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Mild
* Liver		Basophilic Focus	
		Clear Cell Focus	
		Hepatodiaphragmatic Nodule	
	[ Hepatodiaphragmatic Nodule TGLs = 3-6 ]		
* Lung	Alveolar Epith	Fibrosis	Minimal
		Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Minimal
	[ Infiltration Cellular TGLs = 4-4+5 ]		
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocytosis, Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 230

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** 10 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60500

**ORGAN AND ACCOUNTABLE SITE STATUS**

	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Skin		Ulcer	Mild
	[ Ulcer TGLs = 1,2-15+16 ]		
* Spleen		Hematopoietic Cell Proliferation	Minimal
* Thymus		Atrophy	Mild
* Thyroid Gland	C Cell	Hyperplasia	Mild

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 231

TRT#: 3

SEX: Male

DAY ON TEST: 729

DOSE: 10 mg/m3

DISP: Terminal Sacrifice

HISTO: 60501

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Trachea	* Urinary Bladder		

MISSING

\* Mammary Gland

OBSERVATIONS

* Adrenal Cortex		Hypertrophy	Minimal
* Heart		Cardiomyopathy	Minimal
* Kidney		Nephropathy	Minimal
* Larynx	Epiglottis	Metaplasia	Squamous, Minimal
* Liver		Clear Cell Focus	
* Lung		Fibrosis	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Minimal
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Thymus		Atrophy	Mild
* Thyroid Gland	C Cell	Hyperplasia	Mild

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 232

TRT#: 3

SEX: Male

DAY ON TEST: 729

DOSE: 10 mg/m3

DISP: Terminal Sacrifice

HISTO: 60502

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Liver	* Lymph Node, Bronchial
* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Testes	* Trachea
* Urinary Bladder			

MISSING

\* Mammary Gland

OBSERVATIONS

* Kidney	Pelvis	Inflammation	Mild
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
	Epiglottis	Metaplasia	Squamous, Mild
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Minimal
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Adenoma	
	[ Adenoma TGLs = 3-10 ]		
* Preputial Gland		Inflammation	Minimal
* Skin	Subcut Tiss	Hemangiosarcoma	
	[ Hemangiosarcoma TGLs = 2-15 ]		

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 232

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** 10 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60502

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

\* Thymus

Atrophy

Mild

\* Thyroid Gland

Follicle

Carcinoma

[ Carcinoma TGLs = 1-3 ]

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 233

TRT#: 3

SEX: Male

DAY ON TEST: 730

DOSE: 10 mg/m3

DISP: Terminal Sacrifice

HISTO: 60503

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Trachea	* Urinary Bladder		

**MISSING**

\* Mammary Gland

**OBSERVATIONS**

* Adrenal Cortex		Hypertrophy	Mild
		Vacuolization Cytoplasmic	Minimal
* Heart		Cardiomyopathy	Minimal
* Kidney	Pelvis	Inflammation	Minimal
		Nephropathy	Minimal
	[ Inflammation TGLs = 2-7 ]		
* Larynx	Epiglottis	Metaplasia	Squamous, Minimal
* Liver		Clear Cell Focus	
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Minimal
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Atrophy	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 233

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** 10 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60503

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Thymus		Inflammation	Suppurative, Minimal
		Atrophy	Mild
* Thyroid Gland	C Cell	Hyperplasia	Mild

---

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 234

TRT#: 3

SEX: Male

DAY ON TEST: 730

DOSE: 10 mg/m3

DISP: Terminal Sacrifice

HISTO: 60504

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Testes	* Trachea
* Urinary Bladder			

MISSING

\* Mammary Gland

OBSERVATIONS

* Adrenal Cortex		Hypertrophy	Mild
		Vacuolization Cytoplasmic	Minimal
* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
	Epiglottis	Metaplasia	Squamous, Mild
* Liver		Basophilic Focus	
		Clear Cell Focus	
	[ Clear Cell Focus TGLs = 3-15 ]		
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Minimal
	[ Infiltration Cellular TGLs = 1,2-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
		Inflammation	Suppurative, Minimal

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 234

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** 10 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60504

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Pituitary Gland		Cyst	Minimal
	Pars Distalis	Hyperplasia	Minimal
* Thymus		Atrophy	Mild
* Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Minimal

---

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 235

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** 10 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60505

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Lymph Node, Bronchial
* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Trachea	* Urinary Bladder	

**MISSING**

\* Mammary Gland

**OBSERVATIONS**

* Larynx	Epiglottis	Metaplasia	Squamous, Minimal
* Liver		Clear Cell Focus	
* Lung		Fibrosis	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Minimal
	[ Infiltration Cellular TGLs = 1-4 ]		
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Mild
	Glands, Olfactory Epi	Hyperplasia	Mild
		Inflammation	Suppurative, Minimal
* Preputial Gland		Inflammation	Minimal
* Thymus		Atrophy	Mild
* Thyroid Gland	Follicle	Hyperplasia	Marked
	C Cell	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 236

TRT#: 3

SEX: Male

DAY ON TEST: 716

DOSE: 10 mg/m3

DISP: Natural Death

HISTO: 60506

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Liver	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Parathyroid Gland
* Pituitary Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Trachea	* Urinary Bladder		

MISSING

\* Mammary Gland

OBSERVATIONS

* Adrenal Cortex		Hypertrophy	Minimal
		Vacuolization Cytoplasmic	Minimal
* Heart		Cardiomyopathy	Mild
* Kidney		Nephropathy	Marked
	[ Nephropathy TGLs = 5-7+15 ]		
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
		Infiltration Cellular	Mixed Cell, Mild
	Epiglottis	Metaplasia	Squamous, Minimal
* Lung	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Minimal
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Mild
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 236

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 716

**DOSE:** 10 mg/m3

**DISP:** Natural Death

**HISTO:** 60506

**ORGAN AND ACCOUNTABLE SITE STATUS**

	Transit Epithe	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Pancreas		Inflammation	Mild
* Preputial Gland		Inflammation	Minimal
* Spleen		Hemorrhage	Moderate
	[ Hemorrhage TGLs = 4-16 ]		
* Thymus		Atrophy	Mild
* Thyroid Gland	C Cell	Hyperplasia	Minimal

**PRIMARY CAUSE OF DEATH** - Spleen Hemorrhage

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 237

TRT#: 3

SEX: Male

DAY ON TEST: 729

DOSE: 10 mg/m3

DISP: Terminal Sacrifice

HISTO: 60507

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Kidney	* Liver	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Testes	* Thymus
* Trachea	* Urinary Bladder		

**MISSING**

\* Mammary Gland

**OBSERVATIONS**

* Adrenal Cortex		Vacuolization Cytoplasmic	Minimal
* Heart		Cardiomyopathy	Mild
* Larynx	Epiglottis	Metaplasia	Squamous, Minimal
* Lung		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Minimal
	[ Infiltration Cellular TGLs = 1-4 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Minimal
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
* Thyroid Gland	C Cell	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 238

TRT#: 3

SEX: Male

DAY ON TEST: 731

DOSE: 10 mg/m3

DISP: Terminal Sacrifice

HISTO: 60508

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Harderian Gland
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Liver
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Pancreas
* Parathyroid Gland	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Trachea	* Urinary Bladder	

MISSING

\* Mammary Gland

OBSERVATIONS

* Adrenal Cortex		Angiectasis	Minimal
* Eye	Retina	Atrophy	Mild
* Heart		Cardiomyopathy	Minimal
* Kidney	Pelvis	Inflammation	Mild
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
		Inflammation	Chronic Active, Minimal
	Epiglottis	Metaplasia	Squamous, Minimal
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Minimal
	[ Infiltration Cellular TGLs = 5-4+5 ]		
Lymph Node	Axillary	Hyperplasia	Plasma Cell, Moderate
	Lumbar	Hyperplasia	Plasma Cell, Moderate
	[ Hyperplasia TGLs = 1-15 ]		
	[ Hyperplasia TGLs = 2-16 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 238

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 731

**DOSE:** 10 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60508

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Adenoma	Multiple
* Skin		Ulcer	Mild
	[ Ulcer TGLs = 3,4-17+18 ]		
* Thymus		Atrophy	Mild
* Thyroid Gland	C Cell	Hyperplasia	Minimal

---

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 239

TRT#: 3

SEX: Male

DAY ON TEST: 729

DOSE: 10 mg/m3

DISP: Terminal Sacrifice

HISTO: 60509

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex           | * Adrenal Medulla         | Blood Vessel                | * Bone                   |
| * Bone Marrow              | * Brain                   | * Epididymis                | * Esophagus              |
| * Eye                      | * Harderian Gland         | * Heart                     | * Intestine Large, Cecum |
| * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic      | * Lymph Node, Bronchial     | * Lymph Node, Mandibular |
| * Lymph Node, Mediastinal  | * Lymph Node, Mesenteric  | * Pancreas                  | * Parathyroid Gland      |
| * Prostate                 | * Salivary Glands         | * Seminal Vesicle           | * Skin                   |
| * Spleen                   | * Stomach, Forestomach    | * Stomach, Glandular        | * Testes                 |
| * Trachea                  | * Urinary Bladder         |                             |                          |

**MISSING**

- \* Mammary Gland

**OBSERVATIONS**

- |                   |  |   |  |
|-------------------|--|---|--|
| * Kidney          | Pelvis   | Inflammation<br>Nephropathy   | Minimal<br>Minimal   |
| * Larynx          | Epiglottis                                     | Metaplasia<br>Clear Cell Focus  | Squamous, Minimal  |
| * Liver           |  | Fibrosis  | Minimal  |
| * Lung            | Alv/Bron Epith<br>Alveolar Epith               | Hyperplasia<br>Hyperplasia<br>Infiltration Cellular<br>Inflammation                           | Minimal<br>Minimal<br>Histiocyte, Minimal<br>Chronic Active, Minimal |
|                   | [ Infiltration Cellular TGLs = 1-4+5 ]         |   |  |
| * Nose            | Olfactory Epi<br>Respirat Epith<br>Goblet Cell | Accumulation, Hyaline Droplet<br>Accumulation, Hyaline Droplet<br>Hyperplasia<br>Inflammation | Moderate<br>Minimal<br>Minimal<br>Suppurative, Minimal               |
| * Pituitary Gland | Pars Distalis                                  | Adenoma   |  |
|                   | [ Adenoma TGLs = 2-10 ]                        |   |  |
| * Preputial Gland |  | Inflammation  | Minimal  |
| * Thymus          |  | Atrophy   | Moderate   |

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 239

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** 10 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60509

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

\* Thyroid Gland

C Cell

Hyperplasia

Minimal

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 240

TRT#: 3

SEX: Male

DAY ON TEST: 323

DOSE: 10 mg/m3

DISP: Moribund Sacrifice

HISTO: 60510

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Thyroid Gland	* Trachea
* Urinary Bladder			

**MISSING**

* Mammary Gland	* Thymus
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**OBSERVATIONS**

* Heart		Cardiomyopathy	Mild
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Minimal
* Liver		Hepatodiaphragmatic Nodule	
		Infiltration Cellular	Lymphocyte, Mild
[ Hepatodiaphragmatic Nodule	TGLs = 4-16 ]		
* Lung	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Minimal
		Lymphoma Malignant	
* Lymph Node, Bronchial		Lymphoma Malignant	
* Lymph Node, Mediastinal		Lymphoma Malignant	
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
	Nasolacrim Dct	Inflammation	Chronic, Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 240

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 323

**DOSE:** 10 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60510

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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	Goblet Cell, Nasolacrim Dct	Metaplasia	Mild
	Nasolacrim Dct	Metaplasia	Squamous, Mild
* Skin	Epidermis	Keratoacanthoma	
	[ Keratoacanthoma TGLs = 1-16 ]		
* Spleen		Hematopoietic Cell Proliferation	Minimal

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**PRIMARY CAUSE OF DEATH** - Lung Lymphoma Malignant

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 241

TRT#: 3

SEX: Male

DAY ON TEST: 730

DOSE: 10 mg/m3

DISP: Terminal Sacrifice

HISTO: 60511

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Liver	* Lymph Node, Mandibular
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Stomach, Forestomach	* Stomach, Glandular	* Trachea	* Urinary Bladder

MISSING

\* Mammary Gland

OBSERVATIONS

* Kidney		Nephropathy	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
	Epiglottis	Metaplasia	Squamous, Mild
* Lung	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Minimal
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocytosis, Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Intermed	Adenoma	
	Pars Distalis	Hyperplasia	Minimal
Skeletal Muscle		Mesothelioma Malignant	
* Skin		Ulcer	Mild
	[ Ulcer TGLs = 1-15 ]		
* Spleen		Hematopoietic Cell Proliferation	Minimal
* Testes		Mesothelioma Malignant	
	[ Mesothelioma Malignant TGLs = 2-16 ]		

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 241

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** 10 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60511

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

\* Thymus

Atrophy

Moderate

\* Thyroid Gland

C Cell

Hyperplasia

Minimal

---

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 242

TRT#: 3

SEX: Male

DAY ON TEST: 730

DOSE: 10 mg/m3

DISP: Terminal Sacrifice

HISTO: 60512

ORGAN AND ACCOUNTABLE SITE STATUS

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Liver	* Lymph Node, Bronchial	* Lymph Node, Mandibular
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Pancreas	* Pituitary Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Trachea	* Urinary Bladder		

**MISSING**

* Mammary Gland	* Parathyroid Gland
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**OBSERVATIONS**

* Heart		Cardiomyopathy	Minimal
* Kidney	Pelvis	Inflammation	Minimal
		Nephropathy	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
	Epiglottis	Metaplasia	Squamous, Minimal
* Lung		Fibrosis	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Minimal
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild
		Inflammation	Suppurative, Minimal
* Preputial Gland		Inflammation	Minimal
* Thymus		Atrophy	Moderate
* Thyroid Gland	C Cell	Hyperplasia	Mild

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 243

TRT#: 3

SEX: Male

DAY ON TEST: 729

DOSE: 10 mg/m3

DISP: Terminal Sacrifice

HISTO: 60513

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Liver	* Lymph Node, Mandibular
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Trachea	* Urinary Bladder	

MISSING

* Lymph Node, Bronchial	* Mammary Gland
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OBSERVATIONS

* Kidney	Pelvis	Inflammation Nephropathy	Minimal Minimal
* Larynx	Epiglottis Epiglottis	Hyperplasia Metaplasia	Squamous, Minimal Squamous, Minimal
* Lung	Alveolar Epith	Fibrosis Hyperplasia Infiltration Cellular Inflammation	Minimal Mild Histiocyte, Mild Chronic Active, Minimal
[ Infiltration Cellular TGLs = 1-4+5 ]			
* Nose	Olfactory Epi Respirat Epith Goblet Cell Glands, Olfactory Epi	Accumulation, Hyaline Droplet Accumulation, Hyaline Droplet Hyperplasia Hyperplasia Inflammation	Moderate Mild Minimal Mild Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
* Testes	Germinal Epith	Atrophy	Mild
* Thyroid Gland	C Cell	Hyperplasia	Mild

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 244

TRT#: 3

SEX: Male

DAY ON TEST: 731

DOSE: 10 mg/m3

DISP: Terminal Sacrifice

HISTO: 60514

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Pancreas
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Trachea	* Urinary Bladder	

MISSING

* Lymph Node, Bronchial	* Mammary Gland	* Parathyroid Gland
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OBSERVATIONS

* Adrenal Cortex		Hypertrophy	Minimal
		Vacuolization Cytoplasmic	Minimal
* Kidney		Nephropathy	Minimal
* Larynx	Epiglottis	Metaplasia	Squamous, Mild
* Liver		Clear Cell Focus	
	Bile Duct	Hyperplasia	Minimal
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Minimal
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 244

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 731

**DOSE:** 10 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60514

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

[ Hyperplasia TGLs = 2-10 ]

\* Thymus

Atrophy

Moderate

\* Thyroid Gland

C Cell

Hyperplasia

Mild

---

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 245

TRT#: 3

SEX: Male

DAY ON TEST: 730

DOSE: 10 mg/m3

DISP: Terminal Sacrifice

HISTO: 60515

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Trachea	* Urinary Bladder		

MISSING

* Lymph Node, Bronchial	* Mammary Gland
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OBSERVATIONS

* Heart		Cardiomyopathy	Minimal
* Kidney		Nephropathy	Mild
* Larynx		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Mild
* Liver		Clear Cell Focus	
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Minimal
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
	Transit Epithe	Hyperplasia	Minimal
		Inflammation	Suppurative, Mild
	Transit Epithe	Metaplasia	Squamous, Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 245

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** 10 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60515

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

\* Thymus

Atrophy

Mild

\* Thyroid Gland

C Cell

Hyperplasia

Mild

---

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 246

TRT#: 3

SEX: Male

DAY ON TEST: 729

DOSE: 10 mg/m3

DISP: Terminal Sacrifice

HISTO: 60516

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Liver	* Lymph Node, Mesenteric	* Pancreas
* Parathyroid Gland	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Thymus	* Trachea
* Urinary Bladder			

**MISSING**

* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Mammary Gland
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**OBSERVATIONS**

* Adrenal Cortex		Hypertrophy	Marked
* Kidney	Pelvis	Inflammation	Minimal
		Nephropathy	Minimal
* Larynx	Epiglottis	Metaplasia	Squamous, Minimal
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Minimal
[ Infiltration Cellular	TGLs = 2-4+5 ]		
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal
	Respirat Epith	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
	Transit Epithe	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 246

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** 10 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60516

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Pituitary Gland [ Adenoma TGLs = 1-10 ]	Pars Distalis	Adenoma	
* Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Mild
	Follicle	Hyperplasia	Mild

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 247

TRT#: 3

SEX: Male

DAY ON TEST: 730

DOSE: 10 mg/m3

DISP: Terminal Sacrifice

HISTO: 60517

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex           | * Adrenal Medulla         | Blood Vessel                | * Bone                   |
| * Bone Marrow              | * Brain                   | * Epididymis                | * Esophagus              |
| * Eye                      | * Harderian Gland         | * Heart                     | * Intestine Large, Cecum |
| * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic      | * Lymph Node, Bronchial     | * Lymph Node, Mandibular |
| * Lymph Node, Mediastinal  | * Lymph Node, Mesenteric  | * Parathyroid Gland         | * Prostate               |
| * Salivary Glands          | * Seminal Vesicle         | * Skin                      | * Spleen                 |
| * Stomach, Forestomach     | * Stomach, Glandular      | * Testes                    | * Trachea                |
| * Urinary Bladder          |                           |                             |                          |

MISSING

- \* Mammary Gland

OBSERVATIONS

- |                   |                                      |                               |                     |
|-------------------|--------------------------------------|-------------------------------|---------------------|
| * Kidney          |                                      | Nephropathy                   | Mild                |
| * Larynx          |                                      | Infiltration Cellular         | Mixed Cell, Minimal |
|                   | Epiglottis                           | Metaplasia                    | Squamous, Minimal   |
| * Liver           |                                      | Clear Cell Focus              |                     |
| * Lung            |                                      | Fibrosis                      | Minimal             |
|                   |                                      | Infiltration Cellular         | Histiocyte, Minimal |
|                   | [ Infiltration Cellular TGLs = 1-5 ] |                               |                     |
| * Nose            | Olfactory Epi                        | Accumulation, Hyaline Droplet | Moderate            |
|                   | Respirat Epith                       | Accumulation, Hyaline Droplet | Minimal             |
|                   | Goblet Cell                          | Hyperplasia                   | Minimal             |
|                   | Glands, Olfactory Epi                | Hyperplasia                   | Mild                |
|                   |                                      | Inflammation                  | Suppurative, Mild   |
| * Pancreas        | Acinus                               | Atrophy                       | Minimal             |
| * Pituitary Gland |                                      | Cyst                          | Minimal             |
|                   | Pars Distalis                        | Hyperplasia                   | Mild                |
| * Preputial Gland |                                      | Inflammation                  | Mild                |
| * Thymus          |                                      | Atrophy                       | Minimal             |
| * Thyroid Gland   | C Cell                               | Hyperplasia                   | Mild                |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 248

TRT#: 3

SEX: Male

DAY ON TEST: 729

DOSE: 10 mg/m3

DISP: Terminal Sacrifice

HISTO: 60518

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Lymph Node, Bronchial	* Lymph Node, Mandibular
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Trachea	* Urinary Bladder

**MISSING**

\* Mammary Gland

**OBSERVATIONS**

* Kidney		Nephropathy	Minimal
* Larynx	Epiglottis	Metaplasia	Squamous, Minimal
* Liver		Clear Cell Focus	
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Minimal
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
	Respirat Epith	Hyperplasia	Minimal
		Inflammation	Suppurative, Mild
* Thymus		Atrophy	Mild
* Thyroid Gland	Follicle	Hyperplasia	Minimal
	C Cell	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 249

TRT#: 3

SEX: Male

DAY ON TEST: 687

DOSE: 10 mg/m3

DISP: Moribund Sacrifice

HISTO: 60519

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * Adrenal Cortex            | * Adrenal Medulla        | Blood Vessel               | * Bone                    |
| * Bone Marrow               | * Epididymis             | * Esophagus                | * Eye                     |
| * Harderian Gland           | * Intestine Large, Cecum | * Intestine Large, Colon   | * Intestine Large, Rectum |
| * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic      |
| * Kidney                    | * Liver                  | * Lymph Node, Bronchial    | * Lymph Node, Mandibular  |
| * Lymph Node, Mediastinal   | * Lymph Node, Mesenteric | * Pancreas                 | * Parathyroid Gland       |
| * Preputial Gland           | * Salivary Glands        | * Seminal Vesicle          | * Spleen                  |
| * Stomach, Forestomach      | * Stomach, Glandular     | * Testes                   | * Thyroid Gland           |
| * Trachea                   |                          |                            |                           |

MISSING

- \* Mammary Gland

OBSERVATIONS

- |                   |  |                               |                         |
|-------------------|--|-------------------------------|-------------------------|
| * Brain           |  | Compression                   | Moderate                |
| * Heart           |  | Cardiomyopathy                | Minimal                 |
| * Larynx          | Epiglottis                             | Metaplasia                    | Squamous, Minimal       |
| * Lung            |  | Fibrosis                      | Minimal                 |
|                   | Alv/Bron Epith                         | Hyperplasia                   | Minimal                 |
|                   | Alveolar Epith                         | Hyperplasia                   | Minimal                 |
|                   |  | Infiltration Cellular         | Histiocyte, Mild        |
|                   |  | Inflammation                  | Chronic Active, Minimal |
|                   | [ Infiltration Cellular TGLs = 3-4+5 ] |                               |                         |
| * Nose            | Olfactory Epi                          | Accumulation, Hyaline Droplet | Moderate                |
|                   | Respirat Epith                         | Accumulation, Hyaline Droplet | Mild                    |
|                   | Goblet Cell                            | Hyperplasia                   | Minimal                 |
|                   | Glands, Olfactory Epi                  | Hyperplasia                   | Minimal                 |
|                   |  | Inflammation                  | Suppurative, Mild       |
| * Pituitary Gland | Pars Distalis                          | Adenoma                       |                         |
|                   | [ Adenoma TGLs = 2-10 ]                |                               |                         |
| * Prostate        |  | Inflammation                  | Minimal                 |
| * Skin            |  | Ulcer                         | Minimal                 |

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 249

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 687

**DOSE:** 10 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60519

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

[ Ulcer TGLs = 1-15 ]

\* Thymus

Atrophy

Mild

\* Urinary Bladder

Inflammation

Mild

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PRIMARY CAUSE OF DEATH

- Pituitary Gland Pars Distalis Adenoma

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**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 250

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 731

**DOSE:** 10 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60520

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Lymph Node, Mesenteric	* Pancreas
* Parathyroid Gland	* Preputial Gland	* Salivary Glands	* Seminal Vesicle
* Stomach, Forestomach	* Stomach, Glandular	* Testes	* Trachea
* Urinary Bladder			

**MISSING**

* Lymph Node, Mandibular	* Mammary Gland
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**OBSERVATIONS**

* Kidney		Nephropathy	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
	Epiglottis	Metaplasia	Squamous, Mild
* Liver		Basophilic Focus	
		Clear Cell Focus	
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Minimal
	[ Infiltration Cellular TGLs = 4,5-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Minimal
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Adenoma	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 250

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 731

**DOSE:** 10 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60520

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

[ Adenoma TGLs = 3-10 ]			
* Prostate		Inflammation	Minimal
* Skin	Epidermis	Squamous Cell Papilloma	
		Ulcer	Mild
[ Squamous Cell Papilloma TGLs = 1-16 ]			
[ Ulcer TGLs = 2-15 ]			
* Spleen		Hematopoietic Cell Proliferation	Minimal
* Thymus		Atrophy	Mild
* Thyroid Gland	C Cell	Hyperplasia	Mild

---

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 401

TRT#: 5

SEX: Male

DAY ON TEST: 554

DOSE: 30 mg/m3

DISP: Moribund Sacrifice

HISTO: 60371

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Epididymis	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Kidney	* Liver	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Pancreas	* Preputial Gland	* Salivary Glands
* Seminal Vesicle	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Thymus	* Trachea	* Urinary Bladder

MISSING

* Mammary Gland	* Parathyroid Gland
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OBSERVATIONS

* Adrenal Cortex		Hypertrophy	Minimal
* Brain		Compression	Moderate
		Hydrocephalus	Moderate
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Mild
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Mild
	Alveolus	Proteinosis	Minimal
	[ Infiltration Cellular TGLs = 4-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Adenoma	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 401

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 554

**DOSE:** 30 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60371

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

[ Adenoma TGLs = 1-10 ]

\* Prostate

Inflammation

Mild

\* Skin

Ulcer

Mild

[ Ulcer TGLs = 3-15 ]

\* Thyroid Gland

C Cell

Hyperplasia

Mild

---

PRIMARY CAUSE OF DEATH

- Skin Ulcer

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 402

TRT#: 5

SEX: Male

DAY ON TEST: 666

DOSE: 30 mg/m3

DISP: Moribund Sacrifice

HISTO: 60372

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Kidney	* Liver	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	* Preputial Gland	* Salivary Glands
* Seminal Vesicle	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Trachea	* Urinary Bladder	

MISSING

\* Mammary Gland

OBSERVATIONS

* Brain		Compression	Marked
		Hydrocephalus	Moderate
* Epididymis		Mesothelioma Nos	
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
	Epiglottis	Metaplasia	Squamous, Mild
* Lung		Fibrosis	Minimal
	Alveolar Epith	Hyperplasia	Minimal
	Alv/Bron Epith	Hyperplasia	Minimal
	BALT	Hyperplasia	Lymphohistiocy, Minimal
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Mild
	Alveolus	Proteinosis	Minimal
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Minimal
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 402

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 666

**DOSE:** 30 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60372

**ORGAN AND ACCOUNTABLE SITE STATUS**

* Pituitary Gland [ Adenoma TGLs = 2-10 ]	Pars Distalis	Inflammation Adenoma	Suppurative, Minimal
* Prostate		Inflammation	Minimal
* Spleen	Lymph Follic	Atrophy	Minimal
* Thymus		Atrophy	Mild
		Thymoma Benign	
* Thyroid Gland	C Cell	Hyperplasia	Minimal

**PRIMARY CAUSE OF DEATH** - Pituitary Gland Pars Distalis Adenoma

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 403

TRT#: 5

SEX: Male

DAY ON TEST: 730

DOSE: 30 mg/m3

DISP: Terminal Sacrifice

HISTO: 60373

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Testes	* Thymus
* Trachea	* Urinary Bladder		

**MISSING**

* Adrenal Medulla	* Mammary Gland
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**OBSERVATIONS**

* Heart		Cardiomyopathy	Minimal
* Kidney		Nephropathy	Mild
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Mild
* Liver		Basophilic Focus	
		Fatty Change	Minimal
	[ Fatty Change TGLs = 2-7 ]		
* Lung		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Mild
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 403

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** 30 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60373

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Thyroid Gland	C Cell	Hyperplasia	Minimal

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**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 404

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** 30 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60374

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Liver	* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Testes	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

**MISSING**

\* Mammary Gland

**OBSERVATIONS**

* Adrenal Cortex		Hypertrophy	Mild
		Vacuolization Cytoplasmic	Minimal
* Heart		Cardiomyopathy	Minimal
* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
		Infiltration Cellular	Mixed Cell, Mild
	Epiglottis	Metaplasia	Squamous, Mild
* Lung		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Mild
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 404

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** 30 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60374

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* Preputial Gland

Inflammation

Suppurative, Minimal

Inflammation

Mild

---

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 405

TRT#: 5

SEX: Male

DAY ON TEST: 646

DOSE: 30 mg/m3

DISP: Moribund Sacrifice

HISTO: 60375

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Liver	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland	Peripheral Nerve
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
Skeletal Muscle	Spinal Cord	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Trachea	* Urinary Bladder	

MISSING

\* Mammary Gland

OBSERVATIONS

* Heart		Cardiomyopathy	Minimal
* Kidney		Nephropathy	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Mild
* Lung		Fibrosis	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Mild
	Alveolus	Proteinosis	Minimal
	[ Infiltration Cellular TGLs = 4-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Minimal
Mesentery	Fat	Necrosis	Minimal
	[ Necrosis TGLs = 3-15 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
Test Type: CHRONIC  
Route: RESPIRATORY EXPOSURE WHOLE BODY  
Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Metal working fluids (Trim VX)  
CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
Time Report Requested: 09:56:24  
First Dose M/F: 07/20/09 / 07/20/09  
Lab: BNW

ANIMAL ID: 405

TRT#: 5

SEX: Male

DAY ON TEST: 646

DOSE: 30 mg/m3

DISP: Moribund Sacrifice

HISTO: 60375

ORGAN AND ACCOUNTABLE SITE STATUS

* Pituitary Gland	Pars Distalis	Inflammation Adenoma	Suppurative, Minimal
[ Adenoma TGLs = 5-10 ]			
* Skin		Ulcer	Mild
[ Ulcer TGLs = 1,2-15+16 ]			
* Spleen		Hematopoietic Cell Proliferation	Minimal
* Thymus		Atrophy	Minimal
* Thyroid Gland	C Cell	Hyperplasia	Minimal

PRIMARY CAUSE OF DEATH - Skin Ulcer

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 406

TRT#: 5

SEX: Male

DAY ON TEST: 730

DOSE: 30 mg/m3

DISP: Terminal Sacrifice

HISTO: 60376

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Liver	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Trachea	* Urinary Bladder

MISSING

\* Mammary Gland

OBSERVATIONS

* Adrenal Cortex		Vacuolization Cytoplasmic	Minimal
* Heart		Cardiomyopathy	Minimal
* Kidney		Nephropathy	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Moderate
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Mild
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Mild
	Alveolus	Proteinosis	Minimal
	[ Infiltration Cellular TGLs = 3-4+5 ]		
Lymph Node	Lumbar	Hyperplasia	Plasma Cell, Moderate
	[ Hyperplasia TGLs = 4-7 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Mild
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 406

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** 30 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60376

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild
		Inflammation	Suppurative, Minimal
* Skin		Ulcer	Mild
	[ Ulcer TGLs = 1-15 ]		
* Thymus		Atrophy	Moderate
* Thyroid Gland	Follicle	Adenoma	
	[ Adenoma TGLs = 2-3 ]		

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 407

TRT#: 5

SEX: Male

DAY ON TEST: 555

DOSE: 30 mg/m3

DISP: Moribund Sacrifice

HISTO: 60377

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Liver	* Lymph Node, Mandibular
* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland	Peripheral Nerve
* Pituitary Gland	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	Skeletal Muscle	Spinal Cord	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Thymus	* Trachea
* Urinary Bladder			

MISSING

\* Mammary Gland

OBSERVATIONS

* Adrenal Cortex		Vacuolization Cytoplasmic	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Moderate
	Epiglottis	Metaplasia	Squamous, Mild
* Lung	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Mild
	[ Infiltration Cellular TGLs = 2-4+5 ]		
	Lymph Node	Iliac	Hyperplasia
	[ Hyperplasia TGLs = 3-7 ]		Plasma Cell, Marked
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Mild
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Mild
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild
		Inflammation	Suppurative, Minimal
* Skin		Ulcer	Mild

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 407

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 555

**DOSE:** 30 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60377

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Ulcer TGLs = 1-16 ]

\* Spleen

Hematopoietic Cell Proliferation

Minimal

\* Thyroid Gland

C Cell

Hyperplasia

Mild

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PRIMARY CAUSE OF DEATH

- Skin Ulcer

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 408

TRT#: 5

SEX: Male

DAY ON TEST: 730

DOSE: 30 mg/m3

DISP: Terminal Sacrifice

HISTO: 60378

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Liver	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Testes	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

\* Mammary Gland

OBSERVATIONS

* Adrenal Cortex		Hypertrophy	Minimal
		Vacuolization Cytoplasmic	Minimal
* Heart		Cardiomyopathy	Minimal
* Kidney		Nephropathy	Mild
* Larynx	Epiglottis	Hyperplasia	Squamous, Moderate
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Moderate
* Lung		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Mild
	Alveolus	Proteinosis	Minimal
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 408

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** 30 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60378

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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	Glands, Olfactory Epi	Hyperplasia	Minimal
	Transit Epithe	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
	Transit Epithe	Metaplasia	Squamous, Minimal
* Preputial Gland		Inflammation	Minimal
* Thymus		Atrophy	Minimal

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 409

TRT#: 5

SEX: Male

DAY ON TEST: 730

DOSE: 30 mg/m3

DISP: Terminal Sacrifice

HISTO: 60379

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Parathyroid Gland
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Trachea	* Urinary Bladder	

**MISSING**

\* Mammary Gland

**OBSERVATIONS**

* Adrenal Cortex		Vacuolization Cytoplasmic	Minimal
* Heart		Cardiomyopathy	Mild
* Kidney		Nephropathy	Mild
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
	Epiglottis	Metaplasia	Squamous, Mild
* Liver		Basophilic Focus	
		Clear Cell Focus	
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Mild
	Alveolus	Proteinosis	Minimal
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Moderate
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Respirat Epith	Hyperplasia	Minimal
	Goblet Cell	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 409

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** 30 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60379

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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	Transit Epithe	Hyperplasia	Mild
		Inflammation	Suppurative, Minimal
* Pancreas	Acinus	Atrophy	Mild
* Pituitary Gland	Pars Distalis	Hyperplasia	Mild
* Thymus		Atrophy	Mild
* Thyroid Gland	C Cell	Hyperplasia	Minimal

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 410

TRT#: 5

SEX: Male

DAY ON TEST: 452

DOSE: 30 mg/m3

DISP: Moribund Sacrifice

HISTO: 60380

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Liver	* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	Peripheral Nerve	* Preputial Gland
* Salivary Glands	* Seminal Vesicle	Skeletal Muscle	* Skin
Spinal Cord	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Trachea	* Urinary Bladder	

MISSING

\* Mammary Gland

OBSERVATIONS

* Brain		Compression	Marked
		Hydrocephalus	Moderate
* Heart		Cardiomyopathy	Minimal
* Kidney		Nephropathy	Mild
* Larynx	Epiglottis	Hyperplasia	Squamous, Moderate
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Moderate
* Lung		Fibrosis	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Mild
	[ Infiltration Cellular TGLs = 4-4+5 ]		
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Adenoma	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 410

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 452

**DOSE:** 30 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60380

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Adenoma TGLs = 5-10 ]

\* Prostate

Inflammation

Mild

\* Testes

Germinal Epith

Hypoplasia

Moderate

[ Hypoplasia TGLs = 1-9 ]

\* Thyroid Gland

C Cell

Hyperplasia

Mild

---

**PRIMARY CAUSE OF DEATH** - Pituitary Gland Pars Distalis Adenoma

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 411

TRT#: 5

SEX: Male

DAY ON TEST: 729

DOSE: 30 mg/m3

DISP: Terminal Sacrifice

HISTO: 60381

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Parathyroid Gland	* Pituitary Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Trachea	* Urinary Bladder	

MISSING

* Lymph Node, Mediastinal	* Mammary Gland
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OBSERVATIONS

* Heart		Cardiomyopathy	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Mild
* Liver		Clear Cell Focus	
* Lung		Fibrosis	Mild
		Foreign Body	
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Mild
	BALT	Hyperplasia	Lymphohistiocy, Mild
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Mild
	Alveolus	Proteinosis	Mild
	[ Infiltration Cellular TGLs = 4-4+5 ]		
	Lymph Node	Iliac	Hyperplasia
	[ Hyperplasia TGLs = 3-16 ]		Plasma Cell, Moderate
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 411

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** 30 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60381

**ORGAN AND ACCOUNTABLE SITE STATUS**

	Goblet Cell	Foreign Body	
	Glands, Olfactory Epi	Hyperplasia	Minimal
		Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Pancreas	Acinus	Atrophy	Minimal
* Preputial Gland		Inflammation	Minimal
* Skin		Cyst Epithelial Inclusion	
		Ulcer	Mild
	[ Cyst Epithelial Inclusion TGLs = 2-16 ]		
	[ Ulcer TGLs = 1-15 ]		
* Thymus		Atrophy	Mild
* Thyroid Gland	C Cell	Hyperplasia	Minimal
	Follicle	Hyperplasia	Minimal

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 412

TRT#: 5

SEX: Male

DAY ON TEST: 729

DOSE: 30 mg/m3

DISP: Terminal Sacrifice

HISTO: 60382

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Trachea	* Urinary Bladder

**MISSING**

* Lymph Node, Bronchial	* Lymph Node, Mediastinal	* Mammary Gland
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**OBSERVATIONS**

* Harderian Gland		Inflammation	Minimal
* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Mild
* Liver		Clear Cell Focus	
* Lung		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Minimal
	BALT	Hyperplasia	Lymphohistiocy, Minimal
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Mild
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Atrophy	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild
		Inflammation	Suppurative, Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 412

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** 30 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60382

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Preputial Gland		Inflammation	Minimal
* Thymus		Atrophy	Mild
* Thyroid Gland	C Cell	Hyperplasia	Minimal

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 413

TRT#: 5

SEX: Male

DAY ON TEST: 551

DOSE: 30 mg/m3

DISP: Moribund Sacrifice

HISTO: 60383

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Liver	* Lymph Node, Mandibular
* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Trachea	* Urinary Bladder		

MISSING

\* Mammary Gland

OBSERVATIONS

* Heart		Cardiomyopathy	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Moderate
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Mild
	Alveolus	Proteinosis	Minimal
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Mild
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 413

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 551

**DOSE:** 30 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60383

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Peripheral Nerve

[ Schwannoma Malignant TGLs = 2-15+16 ]

Schwannoma Malignant

\* Spleen

Hematopoietic Cell Proliferation

Mild

\* Thymus

Atrophy

Minimal

\* Thyroid Gland

Follicle

Carcinoma

---

PRIMARY CAUSE OF DEATH

- Peripheral Nerve Schwannoma Malignant

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 414

TRT#: 5

SEX: Male

DAY ON TEST: 731

DOSE: 30 mg/m3

DISP: Terminal Sacrifice

HISTO: 60384

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Pancreas	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

* Mammary Gland	* Parathyroid Gland
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OBSERVATIONS

* Heart		Cardiomyopathy	Minimal
* Kidney		Nephropathy	Mild
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
	Epiglottis	Metaplasia	Squamous, Mild
* Liver		Basophilic Focus	
		Clear Cell Focus	
* Lung		Fibrosis	Minimal
		Infiltration Cellular	Histiocyte, Minimal
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
	Respirat Epith	Hyperplasia	Minimal
	Transit Epithe	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
	Pars Intermed	Hyperplasia	Minimal
* Skin		Ulcer	Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 414

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 731

**DOSE:** 30 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60384

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Ulcer TGLs = 1-15 ]

\* Thymus

Thymoma Benign

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 415

TRT#: 5

SEX: Male

DAY ON TEST: 729

DOSE: 30 mg/m3

DISP: Terminal Sacrifice

HISTO: 60385

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Trachea	* Urinary Bladder

MISSING

\* Mammary Gland

INSUFFICIENT TISSUE

\* Lymph Node, Bronchial

OBSERVATIONS

* Adrenal Cortex		Vacuolization Cytoplasmic	Minimal
* Kidney		Nephropathy	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
	Epiglottis	Metaplasia	Squamous, Minimal
* Liver		Clear Cell Focus	
* Lung		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Mild
	[ Infiltration Cellular TGLs = 2-4+5 ]		
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Mild
Mesentery	Fat	Necrosis	Minimal
	[ Necrosis TGLs = 3-16 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 20523 - 03  
Test Type: CHRONIC  
Route: RESPIRATORY EXPOSURE WHOLE BODY  
Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Metal working fluids (Trim VX)  
CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
Time Report Requested: 09:56:24  
First Dose M/F: 07/20/09 / 07/20/09  
Lab: BNW

ANIMAL ID: 415

TRT#: 5

SEX: Male

DAY ON TEST: 729

DOSE: 30 mg/m3

DISP: Terminal Sacrifice

HISTO: 60385

ORGAN AND ACCOUNTABLE SITE STATUS

	Glands, Olfactory Epi	Hyperplasia	Mild
		Inflammation	Suppurative, Minimal
* Testes	Interstit Cell	Adenoma	
[ Adenoma TGLs = 1-9 ]			
* Thymus		Thymoma Benign	
* Thyroid Gland	Follicle	Adenoma	
	C Cell	Hyperplasia	Mild

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 416

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** 30 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60386

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * Adrenal Medulla           | Blood Vessel             | * Bone                     | * Bone Marrow             |
| * Brain                     | * Epididymis             | * Esophagus                | * Eye                     |
| * Harderian Gland           | * Heart                  | * Intestine Large, Cecum   | * Intestine Large, Rectum |
| * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic      |
| * Lymph Node, Mandibular    | * Pancreas               | * Parathyroid Gland        | * Preputial Gland         |
| * Prostate                  | * Salivary Glands        | * Seminal Vesicle          | * Skin                    |
| * Spleen                    | * Stomach, Forestomach   | * Stomach, Glandular       | * Thyroid Gland           |
| * Trachea                   | * Urinary Bladder        |                            |                           |

**MISSING**

- \* Mammary Gland

**OBSERVATIONS**

- |  |                |                           |                      |
|--|----------------|---------------------------|----------------------|
| * Adrenal Cortex                       |                | Vacuolization Cytoplasmic | Minimal              |
| * Intestine Large, Colon               | Lymphoid Tiss  | Hyperplasia               | Mild                 |
| [ Hyperplasia TGLs = 6-20 ]            |                |                           |                      |
| * Kidney                               |                | Cyst                      | Minimal              |
|  |                | Metaplasia                | Lipocyte, Minimal    |
|  |                | Nephropathy               | Mild                 |
| [ Cyst TGLs = 5-19 ]                   |                |                           |                      |
| [ Metaplasia TGLs = 7-19 ]             |                |                           |                      |
| * Larynx                               | Epiglottis     | Hyperplasia               | Squamous, Mild       |
|  |                | Infiltration Cellular     | Mixed Cell, Minimal  |
|  | Epiglottis     | Metaplasia                | Squamous, Mild       |
| * Liver                                | Bile Duct      | Cyst                      | Mild                 |
| [ Cyst TGLs = 3,4-16+17 ]              |                |                           |                      |
| * Lung                                 |                | Fibrosis                  | Mild                 |
|  | Alv/Bron Epith | Hyperplasia               | Minimal              |
|  | Alveolar Epith | Hyperplasia               | Minimal              |
|  |                | Infiltration Cellular     | Histiocyte, Mild     |
|  |                | Inflammation              | Chronic Active, Mild |
| [ Infiltration Cellular TGLs = 1-4+5 ] |                |                           |                      |

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 416

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** 30 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60386

**ORGAN AND ACCOUNTABLE SITE STATUS**

* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocytosis, Moderate
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocytosis, Minimal
* Lymph Node, Mesenteric		Hemangiosarcoma	
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
* Pituitary Gland	Pars Distalis	Adenoma	Multiple
* Testes	Interstit Cell	Adenoma	
* Thymus		Thymoma Benign	

[ Thymoma Benign TGLs = 2-15 ]

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 417

TRT#: 5

SEX: Male

DAY ON TEST: 704

DOSE: 30 mg/m3

DISP: Natural Death

HISTO: 60387

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Liver	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland	* Preputial Gland
* Salivary Glands	* Seminal Vesicle	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Testes	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

\* Mammary Gland

OBSERVATIONS

* Heart		Cardiomyopathy	Minimal
* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Mild
* Lung		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Mild
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Mild
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Hyperplasia	Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
* Prostate		Inflammation	Minimal

PRIMARY CAUSE OF DEATH - UNCERTAIN

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 418

TRT#: 5

SEX: Male

DAY ON TEST: 730

DOSE: 30 mg/m3

DISP: Terminal Sacrifice

HISTO: 60388

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Liver	* Lymph Node, Bronchial	* Lymph Node, Mandibular
* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Trachea	* Urinary Bladder		

MISSING

\* Mammary Gland

OBSERVATIONS

* Heart		Cardiomyopathy	Minimal
* Kidney		Nephropathy	Mild
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Mild
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Mild
	Alveolus	Proteinosis	Minimal
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 418

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** 30 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60388

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* Thymus

Atrophy

Mild

\* Thyroid Gland

C Cell

Hyperplasia

Mild

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 419

TRT#: 5

SEX: Male

DAY ON TEST: 694

DOSE: 30 mg/m3

DISP: Moribund Sacrifice

HISTO: 60389

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Parathyroid Gland	Peripheral Nerve
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
Skeletal Muscle	Spinal Cord	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Trachea	* Urinary Bladder	

MISSING

* Lymph Node, Mandibular	* Mammary Gland
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OBSERVATIONS

* Adrenal Cortex		Hypertrophy	Minimal
		Vacuolization Cytoplasmic	Minimal
* Heart		Cardiomyopathy	Minimal
* Kidney		Infarct	Minimal
	Pelvis	Inflammation	Mild
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
	Epiglottis	Metaplasia	Squamous, Minimal
* Liver		Basophilic Focus	
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Mild
	[ Infiltration Cellular TGLs = 2-4+5 ]		
Lymph Node	Iliac	Hyperplasia	Plasma Cell, Marked
	[ Hyperplasia TGLs = 3-17 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Minimal
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
Test Type: CHRONIC  
Route: RESPIRATORY EXPOSURE WHOLE BODY  
Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Metal working fluids (Trim VX)  
CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
Time Report Requested: 09:56:24  
First Dose M/F: 07/20/09 / 07/20/09  
Lab: BNW

ANIMAL ID: 419

TRT#: 5

SEX: Male

DAY ON TEST: 694

DOSE: 30 mg/m3

DISP: Moribund Sacrifice

HISTO: 60389

ORGAN AND ACCOUNTABLE SITE STATUS

	Goblet Cell	Hyperplasia	Mild
	Glands, Olfactory Epi	Hyperplasia	Moderate
		Inflammation	Suppurative, Minimal
* Pancreas	Acinus	Atrophy	Mild
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
* Skin		Ulcer	Mild
	[ Ulcer TGLs = 1-16 ]		
* Spleen		Hematopoietic Cell Proliferation	Minimal
* Thymus		Atrophy	Mild
* Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH

- UNCERTAIN



Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 420

TRT#: 5

SEX: Male

DAY ON TEST: 729

DOSE: 30 mg/m3

DISP: Terminal Sacrifice

HISTO: 60390

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Liver	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Parathyroid Gland	* Pituitary Gland	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Testes	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

**MISSING**

\* Mammary Gland

**OBSERVATIONS**

* Adrenal Cortex		Hypertrophy	Minimal
		Vacuolization Cytoplasmic	Minimal
* Kidney		Nephropathy	Mild
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Mild
* Lung		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Mild
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Chronic Active, Mild
	Alveolus	Proteinosis	Mild
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Mild
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
	Respirat Epith	Hyperplasia	Minimal
	Goblet Cell	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 420

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** 30 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60390

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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	Glands, Olfactory Epi	Hyperplasia	Mild
	Transit Epithe	Hyperplasia	Mild
		Inflammation	Suppurative, Minimal
	Transit Epithe	Metaplasia	Squamous, Minimal
* Pancreas	Acinus	Atrophy	Minimal

---

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 421

TRT#: 5

SEX: Male

DAY ON TEST: 730

DOSE: 30 mg/m3

DISP: Terminal Sacrifice

HISTO: 60391

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex           | * Adrenal Medulla         | Blood Vessel                | * Bone                   |
| * Bone Marrow              | * Brain                   | * Epididymis                | * Esophagus              |
| * Eye                      | * Harderian Gland         | * Heart                     | * Intestine Large, Cecum |
| * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic      | * Kidney                    | * Lymph Node, Mandibular |
| * Lymph Node, Mesenteric   | * Parathyroid Gland       | * Preputial Gland           | * Prostate               |
| * Salivary Glands          | * Seminal Vesicle         | * Stomach, Forestomach      | * Stomach, Glandular     |
| * Testes                   | * Trachea                 | * Urinary Bladder           |                          |

MISSING

- \* Mammary Gland

OBSERVATIONS

- |                           |  |                               |                         |
|---------------------------|--|-------------------------------|-------------------------|
| * Larynx                  | Epiglottis                             | Hyperplasia                   | Squamous, Mild          |
|                           |  | Infiltration Cellular         | Mixed Cell, Minimal     |
|                           | Epiglottis                             | Metaplasia                    | Squamous, Moderate      |
| * Liver                   |  | Basophilic Focus              |                         |
| * Lung                    |  | Fibrosis                      | Mild                    |
|                           | Alv/Bron Epith                         | Hyperplasia                   | Minimal                 |
|                           | Alveolar Epith                         | Hyperplasia                   | Mild                    |
|                           |  | Infiltration Cellular         | Histiocyte, Moderate    |
|                           |  | Inflammation                  | Chronic Active, Mild    |
|                           | Alveolus                               | Proteinosis                   | Mild                    |
|                           | [ Infiltration Cellular TGLs = 3-4+5 ] |                               |                         |
|                           | Lymph Node                             | Hyperplasia                   | Plasma Cell, Moderate   |
|                           | [ Hyperplasia TGLs = 4-18 ]            |                               |                         |
| * Lymph Node, Bronchial   |  | Hyperplasia                   | Lymphohistiocy, Minimal |
| * Lymph Node, Mediastinal |  | Hyperplasia                   | Lymphohistiocy, Mild    |
| * Nose                    | Olfactory Epi                          | Accumulation, Hyaline Droplet | Marked                  |
|                           | Respirat Epith                         | Accumulation, Hyaline Droplet | Minimal                 |
|                           | Goblet Cell                            | Hyperplasia                   | Minimal                 |
|                           | Glands, Olfactory Epi                  | Hyperplasia                   | Minimal                 |

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 421

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** 30 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60391

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Pancreas	Acinus	Inflammation	Suppurative, Mild
* Pituitary Gland		Hyperplasia	Mild
		Cyst	Minimal
* Skin	Pars Distalis	Hyperplasia	Minimal
		Ulcer	Moderate
	[ Ulcer TGLs = 1,2-16+17 ]		
* Spleen		Hematopoietic Cell Proliferation	Minimal
* Thymus		Atrophy	Mild
* Thyroid Gland	C Cell	Hyperplasia	Moderate

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 422

TRT#: 5

SEX: Male

DAY ON TEST: 730

DOSE: 30 mg/m3

DISP: Terminal Sacrifice

HISTO: 60392

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

- |                             |                           |                            |                           |
|-----------------------------|---------------------------|----------------------------|---------------------------|
| Blood Vessel                | * Bone                    | * Bone Marrow              | * Brain                   |
| * Epididymis                | * Esophagus               | * Eye                      | * Harderian Gland         |
| * Heart                     | * Intestine Large, Cecum  | * Intestine Large, Colon   | * Intestine Large, Rectum |
| * Intestine Small, Duodenum | * Intestine Small, Ileum  | * Intestine Small, Jejunum | * Islets, Pancreatic      |
| * Lymph Node, Mandibular    | * Lymph Node, Mediastinal | * Lymph Node, Mesenteric   | * Mammary Gland           |
| * Parathyroid Gland         | * Pituitary Gland         | * Prostate                 | * Salivary Glands         |
| * Seminal Vesicle           | * Skin                    | * Spleen                   | * Stomach, Forestomach    |
| * Stomach, Glandular        | * Testes                  | * Thyroid Gland            | * Trachea                 |
| * Urinary Bladder           |                           |                            |                           |

**OBSERVATIONS**

- |                         |  |                               |                      |
|-------------------------|--|-------------------------------|----------------------|
| * Adrenal Cortex        |  | Vacuolization Cytoplasmic     | Minimal              |
| * Adrenal Medulla       |  | Pheochromocytoma Benign       |                      |
| * Kidney                |  | Nephropathy                   | Minimal              |
| * Larynx                | Epiglottis                             | Hyperplasia                   | Squamous, Mild       |
|                         | Epiglottis                             | Infiltration Cellular         | Mixed Cell, Minimal  |
|                         |  | Metaplasia                    | Squamous, Mild       |
| * Liver                 |  | Clear Cell Focus              |                      |
|                         |  | Mixed Cell Focus              |                      |
| * Lung                  |  | Fibrosis                      | Mild                 |
|                         | Alveolar Epith                         | Hyperplasia                   | Mild                 |
|                         | Alv/Bron Epith                         | Hyperplasia                   | Minimal              |
|                         |  | Infiltration Cellular         | Histiocyte, Moderate |
|                         |  | Inflammation                  | Chronic Active, Mild |
|                         | Alveolus                               | Proteinosis                   | Minimal              |
|                         | [ Infiltration Cellular TGLs = 1-4+5 ] |                               |                      |
| * Lymph Node, Bronchial |  | Hyperplasia                   | Lymphohistiocy, Mild |
| * Nose                  | Olfactory Epi                          | Accumulation, Hyaline Droplet | Moderate             |
|                         | Respirat Epith                         | Accumulation, Hyaline Droplet | Minimal              |
|                         | Glands, Olfactory Epi                  | Hyperplasia                   | Minimal              |
|                         | Transit Epithe                         | Hyperplasia                   | Minimal              |

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

---

**ANIMAL ID:** 422

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** 30 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60392

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

* Pancreas	Acinus	Inflammation	Suppurative, Minimal
* Preputial Gland		Atrophy	Minimal
* Thymus		Inflammation	Minimal
		Atrophy	Minimal

---

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 423

TRT#: 5

SEX: Male

DAY ON TEST: 626

DOSE: 30 mg/m3

DISP: Moribund Sacrifice

HISTO: 60393

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Epididymis	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Pancreas
* Salivary Glands	* Seminal Vesicle	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Trachea	* Urinary Bladder

**MISSING**

* Mammary Gland	* Parathyroid Gland
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**OBSERVATIONS**

* Adrenal Cortex		Vacuolization Cytoplasmic	Minimal
* Brain		Compression	Marked
		Hydrocephalus	Mild
* Kidney		Nephropathy	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
	Epiglottis	Metaplasia	Squamous, Mild
* Liver		Basophilic Focus	
		Clear Cell Focus	
* Lung		Fibrosis	Mild
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Mild
	Alveolus	Proteinosis	Minimal
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Mild
* Pituitary Gland	Pars Distalis	Adenoma	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 423

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 626

**DOSE:** 30 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60393

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Adenoma TGLs = 2-10 ]

* Preputial Gland		Inflammation	Mild
* Prostate		Inflammation	Mild
* Spleen	Lymph Follic	Atrophy	Minimal
* Thymus		Atrophy	Moderate
* Thyroid Gland	C Cell	Hyperplasia	Minimal

---

**PRIMARY CAUSE OF DEATH** - Pituitary Gland Pars Distalis Adenoma

---



Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 424

TRT#: 5

SEX: Male

DAY ON TEST: 729

DOSE: 30 mg/m3

DISP: Terminal Sacrifice

HISTO: 60394

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Epididymis	* Esophagus	* Eye	* Harderian Gland
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Liver
* Lymph Node, Bronchial	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Parathyroid Gland
* Pituitary Gland	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Trachea	* Urinary Bladder

**MISSING**

* Lymph Node, Mandibular	* Mammary Gland
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**OBSERVATIONS**

* Adrenal Cortex		Hypertrophy	Mild
		Vacuolization Cytoplasmic	Minimal
* Brain		Hydrocephalus	Minimal
* Heart		Cardiomyopathy	Mild
* Kidney		Nephropathy	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Mild
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Mild
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Mild
	Alveolus	Proteinosis	Minimal
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Mild
	Glands, Olfactory Epi	Hyperplasia	Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 424

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** 30 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60394

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Pancreas	Acinus	Inflammation	Suppurative, Minimal
* Thymus		Atrophy	Mild
* Thyroid Gland	C Cell	Atrophy	Mild
	Follicle	Hyperplasia	Minimal
		Hyperplasia	Minimal

---

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 425

TRT#: 5

SEX: Male

DAY ON TEST: 707

DOSE: 30 mg/m3

DISP: Natural Death

HISTO: 60395

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Kidney	* Liver	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mediastinal	* Mammary Gland
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OBSERVATIONS

* Adrenal Medulla		Schwannoma Malignant	Metastatic (Skeletal Muscle)
* Heart	Endocardium	Hyperplasia	Moderate
		Schwannoma Malignant	Metastatic (Skeletal Muscle)
[ Schwannoma Malignant	TGLs = 2,5-18+19 ]		
* Larynx	Epiglottis	Hyperplasia	Squamous, Moderate
	Epiglottis	Metaplasia	Squamous, Mild
* Lung		Infiltration Cellular	Histiocyte, Mild
		Schwannoma Malignant	Metastatic (Skeletal Muscle)
[ Schwannoma Malignant	TGLs = 4,9-4+17 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Adenoma	
Skeletal Muscle		Schwannoma Malignant	
[ Schwannoma Malignant	TGLs = 6-15 ]		
* Skin		Ulcer	Mild
[ Ulcer	TGLs = 1-17 ]		
* Thymus		Schwannoma Malignant	Metastatic (Skeletal Muscle)

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 425

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 707

**DOSE:** 30 mg/m3

**DISP:** Natural Death

**HISTO:** 60395

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

[ Schwannoma Malignant TGLs = 2,5-18+19 ]

---

**PRIMARY CAUSE OF DEATH** - Heart Schwannoma Malignant Skeletal Muscle

---

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 426

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** 30 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60396

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Thymus	* Trachea	* Urinary Bladder	

**MISSING**

\* Mammary Gland

**INSUFFICIENT TISSUE**

\* Lymph Node, Bronchial

**OBSERVATIONS**

* Adrenal Cortex		Hypertrophy	Mild
		Vacuolization Cytoplasmic	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
	Epiglottis	Metaplasia	Squamous, Minimal
* Liver		Basophilic Focus	
		Clear Cell Focus	
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Mild
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 426

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** 30 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60396

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Spleen		Congestion	Mild
	[ Congestion TGLs = 2-6 ]		
* Thyroid Gland	C Cell	Hyperplasia	Minimal

---

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 427

TRT#: 5

SEX: Male

DAY ON TEST: 729

DOSE: 30 mg/m3

DISP: Terminal Sacrifice

HISTO: 60397

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Preputial Gland	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Thymus	* Trachea	* Urinary Bladder

**MISSING**

\* Mammary Gland

**OBSERVATIONS**

* Adrenal Cortex		Vacuolization Cytoplasmic	Minimal
* Heart	Endocardium	Hyperplasia	Mild
* Kidney		Nephropathy	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
	Epiglottis	Metaplasia	Squamous, Mild
* Liver		Basophilic Focus	
		Clear Cell Focus	
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Mild
	Alveolus	Proteinosis	Minimal
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Moderate
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Moderate
	Glands, Olfactory Epi	Hyperplasia	Mild
	Goblet Cell, Olfactory Epi	Hyperplasia	Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 427

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** 30 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60397

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Prostate		Inflammation	Suppurative, Mild
* Seminal Vesicle		Inflammation	Mild
* Thyroid Gland	C Cell	Inflammation	Mild
		Hyperplasia	Minimal

---



Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 428

TRT#: 5

SEX: Male

DAY ON TEST: 646

DOSE: 30 mg/m3

DISP: Moribund Sacrifice

HISTO: 60398

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Lymph Node, Bronchial	* Lymph Node, Mandibular
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
Skeletal Muscle	Spinal Cord	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Trachea	* Urinary Bladder	

MISSING

\* Mammary Gland

OBSERVATIONS

* Heart		Cardiomyopathy	Minimal
* Larynx		Foreign Body	
	Epiglottis	Hyperplasia	Squamous, Mild
	Epiglottis	Infiltration Cellular	Mixed Cell, Minimal
* Liver		Metaplasia	Squamous, Moderate
	Serosa	Clear Cell Focus	
		Fibrosis	Minimal
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Mild
	[ Infiltration Cellular TGLs = 3-4+5 ]		
Lymph Node	Iliac	Hyperplasia	Plasma Cell, Minimal
	[ Hyperplasia TGLs = 4-15 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
Test Type: CHRONIC  
Route: RESPIRATORY EXPOSURE WHOLE BODY  
Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
Time Report Requested: 09:56:24  
First Dose M/F: 07/20/09 / 07/20/09  
Lab: BNW

ANIMAL ID: 428

TRT#: 5

SEX: Male

DAY ON TEST: 646

DOSE: 30 mg/m3

DISP: Moribund Sacrifice

HISTO: 60398

**ORGAN AND ACCOUNTABLE SITE STATUS**

	Respirat Epith	Hyperplasia	Minimal
	Goblet Cell	Hyperplasia	Minimal
		Inflammation	Suppurative, Mild
Peripheral Nerve	Axon	Degeneration	Minimal
* Pituitary Gland	Pars Intermed	Hyperplasia	Mild
* Skin		Ulcer	Mild
	[ Ulcer TGLs = 1,2-17+18 ]		
* Spleen		Hematopoietic Cell Proliferation	Minimal
* Thymus		Atrophy	Minimal
* Thyroid Gland	C Cell	Hyperplasia	Minimal
PRIMARY CAUSE OF DEATH	- Skin Ulcer		

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 429

TRT#: 5

SEX: Male

DAY ON TEST: 729

DOSE: 30 mg/m3

DISP: Terminal Sacrifice

HISTO: 60399

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Liver	* Lymph Node, Bronchial	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Pancreas	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Testes	* Thymus
* Trachea	* Urinary Bladder		

MISSING

* Lymph Node, Mandibular	* Mammary Gland
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OBSERVATIONS

* Adrenal Cortex		Hypertrophy	Minimal
* Kidney		Nephropathy	Mild
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
	Epiglottis	Metaplasia	Squamous, Minimal
* Lung		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Mild
	Alveolus	Proteinosis	Minimal
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild
* Parathyroid Gland		Inflammation	Suppurative, Minimal
* Pituitary Gland		Hyperplasia	Mild
		Cyst	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 429

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** 30 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60399

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* Thyroid Gland

C Cell

Hyperplasia

Minimal

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 430

TRT#: 5

SEX: Male

DAY ON TEST: 731

DOSE: 30 mg/m3

DISP: Terminal Sacrifice

HISTO: 60400

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Trachea	* Urinary Bladder	

MISSING

\* Mammary Gland

OBSERVATIONS

* Adrenal Cortex		Vacuolization Cytoplasmic	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
	Epiglottis	Metaplasia	Squamous, Mild
* Liver		Basophilic Focus	
* Lung		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Mild
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Chronic Active, Mild
	Alveolus	Proteinosis	Mild
[ Infiltration Cellular	TGLs = 4-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Mild
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal
	Respirat Epith	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 430

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 731

**DOSE:** 30 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60400

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
* Skin		Ulcer	Mild
	[ Ulcer TGLs = 1,2,3-16+17+18 ]		
* Testes		Edema	Mild
	[ Edema TGLs = 5-19 ]		
* Thymus		Atrophy	Minimal
* Thyroid Gland	C Cell	Hyperplasia	Minimal

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 431

TRT#: 5

SEX: Male

DAY ON TEST: 729

DOSE: 30 mg/m3

DISP: Terminal Sacrifice

HISTO: 60401

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Liver	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Parathyroid Gland	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Thymus	* Trachea
* Urinary Bladder			

MISSING

\* Mammary Gland

OBSERVATIONS

* Adrenal Cortex		Angiectasis	Mild
		Thrombosis	Mild
* Kidney	Renal Tubule	Cyst	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Mild
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Mild
	Alveolus	Proteinosis	Minimal
	[ Infiltration Cellular TGLs = 1-4+5+15 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Mild
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 431

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** 30 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60401

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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	Glands, Olfactory Epi	Hyperplasia	Mild
		Inflammation	Suppurative, Minimal
* Pancreas	Acinus	Atrophy	Mild
* Pituitary Gland		Cyst	Minimal
* Thyroid Gland	C Cell	Hyperplasia	Mild

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 432

TRT#: 5

SEX: Male

DAY ON TEST: 222

DOSE: 30 mg/m3

DISP: Moribund Sacrifice

HISTO: 60402

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Liver
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Thymus	* Trachea		

MISSING

\* Mammary Gland

OBSERVATIONS

* Larynx	Epiglottis	Hyperplasia Infiltration Cellular	Squamous, Minimal Mixed Cell, Minimal
* Lung	Epiglottis Alv/Bron Epith	Metaplasia Hyperplasia Infiltration Cellular	Squamous, Moderate Minimal Histiocyte, Minimal
* Nose	Olfactory Epi Respirat Epith Goblet Cell Glands, Olfactory Epi	Accumulation, Hyaline Droplet Accumulation, Hyaline Droplet Hyperplasia Hyperplasia Inflammation	Moderate Minimal Minimal Minimal Suppurative, Minimal
* Thyroid Gland	C Cell	Hyperplasia	Minimal
* Urinary Bladder		Hemorrhage Inflammation	Mild Minimal

[ Hemorrhage TGLs = 1-10 ]

PRIMARY CAUSE OF DEATH - Urinary Bladder Hemorrhage

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 433

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** 30 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60403

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Lymph Node, Mandibular	* Parathyroid Gland
* Salivary Glands	* Seminal Vesicle	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Thymus	* Trachea	* Urinary Bladder

**MISSING**

* Lymph Node, Mediastinal	* Mammary Gland
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**OBSERVATIONS**

* Kidney		Nephropathy	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
	Epiglottis	Metaplasia	Squamous, Minimal
* Liver		Clear Cell Focus	
	[ Clear Cell Focus TGLs = 5-6 ]		
* Lung		Fibrosis	Minimal
	Alveolar Epith	Hyperplasia	Moderate
		Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Chronic Active, Mild
	Alveolus	Proteinosis	Minimal
	[ Infiltration Cellular TGLs = 2,3-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Mild
* Lymph Node, Mesenteric		Hemorrhage	Mild
	[ Hemorrhage TGLs = 6-15 ]		
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Goblet Cell	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Pancreas	Acinus	Atrophy	Minimal
* Pituitary Gland	Pars Distalis	Adenoma	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 433

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** 30 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60403

**ORGAN AND ACCOUNTABLE SITE STATUS**

	Pars Intermed	Adenoma	
[ Adenoma TGLs = 4-10 ]			
* Preputial Gland		Inflammation	Minimal
* Prostate		Inflammation	Minimal
* Skin	Subcut Tiss	Fibroma	
		Ulcer	Mild
[ Fibroma TGLs = 7-17 ]			
[ Ulcer TGLs = 1-16 ]			
* Spleen		Hematopoietic Cell Proliferation	Minimal
* Thyroid Gland	C Cell	Hyperplasia	Minimal

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 434

TRT#: 5

SEX: Male

DAY ON TEST: 731

DOSE: 30 mg/m3

DISP: Terminal Sacrifice

HISTO: 60404

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

- |                           |                             |                           |                            |
|---------------------------|-----------------------------|---------------------------|----------------------------|
| * Adrenal Cortex          | * Adrenal Medulla           | Blood Vessel              | * Bone                     |
| * Bone Marrow             | * Brain                     | * Epididymis              | * Esophagus                |
| * Eye                     | * Harderian Gland           | * Intestine Large, Cecum  | * Intestine Large, Colon   |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum  | * Intestine Small, Jejunum |
| * Islets, Pancreatic      | * Lymph Node, Mandibular    | * Lymph Node, Mediastinal | * Lymph Node, Mesenteric   |
| * Pancreas                | * Parathyroid Gland         | * Preputial Gland         | * Prostate                 |
| * Salivary Glands         | * Seminal Vesicle           | * Skin                    | * Spleen                   |
| * Stomach, Forestomach    | * Stomach, Glandular        | * Testes                  | * Trachea                  |
| * Urinary Bladder         |                             |                           |                            |

**MISSING**

- \* Mammary Gland

**OBSERVATIONS**

- |                         |  |                               |                         |
|-------------------------|--|-------------------------------|-------------------------|
| * Heart                 |  | Cardiomyopathy                | Minimal                 |
| * Kidney                |  | Nephropathy                   | Minimal                 |
| * Larynx                | Epiglottis                             | Hyperplasia                   | Squamous, Minimal       |
|                         | Epiglottis                             | Metaplasia                    | Squamous, Mild          |
| * Liver                 |  | Basophilic Focus              |                         |
|                         |  | Clear Cell Focus              |                         |
| * Lung                  |  | Fibrosis                      | Minimal                 |
|                         | Alv/Bron Epith                         | Hyperplasia                   | Minimal                 |
|                         | Alveolar Epith                         | Hyperplasia                   | Mild                    |
|                         | BALT                                   | Hyperplasia                   | Lymphohistiocy, Minimal |
|                         |  | Infiltration Cellular         | Histiocyte, Mild        |
|                         |  | Inflammation                  | Chronic Active, Mild    |
|                         | Alveolus                               | Proteinosis                   | Minimal                 |
|                         | [ Infiltration Cellular TGLs = 1-4+5 ] |                               |                         |
| * Lymph Node, Bronchial |  | Hyperplasia                   | Lymphohistiocy, Mild    |
| * Nose                  | Olfactory Epi                          | Accumulation, Hyaline Droplet | Moderate                |
|                         | Respirat Epith                         | Accumulation, Hyaline Droplet | Minimal                 |
|                         | Goblet Cell                            | Hyperplasia                   | Minimal                 |

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 434

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 731

**DOSE:** 30 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60404

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

	Respirat Epith	Hyperplasia	Minimal
	Transit Epithe	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Pituitary Gland		Cyst	Mild
* Thymus		Cyst	Mild
* Thyroid Gland	C Cell	Hyperplasia	Minimal

---

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 435

TRT#: 5

SEX: Male

DAY ON TEST: 659

DOSE: 30 mg/m3

DISP: Moribund Sacrifice

HISTO: 60405

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Liver	* Lymph Node, Mandibular
* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland	* Preputial Gland
* Salivary Glands	* Seminal Vesicle	Skeletal Muscle	* Skin
Spinal Cord	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Trachea	* Urinary Bladder	

**MISSING**

* Lymph Node, Mediastinal	* Mammary Gland
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**OBSERVATIONS**

* Brain		Compression	Marked
		Hydrocephalus	Moderate
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
	Epiglottis	Metaplasia	Squamous, Mild
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Mild
	Alveolus	Proteinosis	Minimal
[ Infiltration Cellular	TGLs = 1-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild
		Inflammation	Suppurative, Mild
Peripheral Nerve	Axon	Degeneration	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

---

**ANIMAL ID:** 435

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 659

**DOSE:** 30 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60405

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

* Pituitary Gland	Pars Distalis	Adenoma	
[ Adenoma TGLs = 2-10 ]			
* Prostate		Inflammation	Mild
* Thymus		Atrophy	Mild
* Thyroid Gland	C Cell	Hyperplasia	Minimal

---

**PRIMARY CAUSE OF DEATH** - Pituitary Gland Pars Distalis Adenoma

---

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 436

TRT#: 5

SEX: Male

DAY ON TEST: 729

DOSE: 30 mg/m3

DISP: Terminal Sacrifice

HISTO: 60406

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Pancreas
* Parathyroid Gland	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

\* Mammary Gland

OBSERVATIONS

* Adrenal Cortex		Hypertrophy	Minimal
		Vacuolization Cytoplasmic	Minimal
* Heart		Cardiomyopathy	Minimal
* Kidney		Nephropathy	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
	Epiglottis	Metaplasia	Squamous, Mild
* Liver		Basophilic Focus	
* Lung		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Mild
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Mild
	Alveolus	Proteinosis	Minimal
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Moderate
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

---

**ANIMAL ID:** 436

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** 30 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60406

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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	Glands, Olfactory Epi	Hyperplasia	Mild
		Inflammation	Suppurative, Mild
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal

---

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 437

TRT#: 5

SEX: Male

DAY ON TEST: 270

DOSE: 30 mg/m3

DISP: Moribund Sacrifice

HISTO: 60407

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Liver	* Lymph Node, Bronchial
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Testes	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

\* Mammary Gland

OBSERVATIONS

* Brain		Hydrocephalus	Moderate
		Oligodendroglioma Benign	
[ Oligodendroglioma Benign	TGLs = 4-1 ]		
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Moderate
* Lung		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Mild
[ Infiltration Cellular	TGLs = 3-4+5 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Thymus		Atrophy	Minimal

PRIMARY CAUSE OF DEATH - Brain Oligodendroglioma Benign

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 438

TRT#: 5

SEX: Male

DAY ON TEST: 731

DOSE: 30 mg/m3

DISP: Terminal Sacrifice

HISTO: 60408

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Pancreas
* Parathyroid Gland	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Thymus	* Trachea
* Urinary Bladder			

MISSING

\* Mammary Gland

OBSERVATIONS

* Adrenal Cortex		Hypertrophy	Minimal
		Vacuolization Cytoplasmic	
* Kidney		Nephropathy	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Mild
* Liver		Mixed Cell Focus	
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Mild
	Alveolus	Proteinosis	Minimal
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Minimal
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

---

**ANIMAL ID:** 438

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 731

**DOSE:** 30 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60408

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild
	Transit Epithe	Hyperplasia	Minimal
		Inflammation	Suppurative, Mild
* Pituitary Gland	Pars Distalis	Adenoma	
	Pars Intermed	Adenoma	
* Thyroid Gland	C Cell	Hyperplasia	Minimal

---

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 439

TRT#: 5

SEX: Male

DAY ON TEST: 731

DOSE: 30 mg/m3

DISP: Terminal Sacrifice

HISTO: 60409

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Testes	* Trachea
* Urinary Bladder			

MISSING

* Lymph Node, Bronchial	* Mammary Gland
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OBSERVATIONS

* Kidney		Infarct	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Moderate
* Liver		Clear Cell Focus	
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Mild
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Mild
	Alveolus	Proteinosis	Minimal
	[ Infiltration Cellular TGLs = 3-4+5 ]		
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild
	Transit Epithe	Hyperplasia	Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 439

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 731

**DOSE:** 30 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60409

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Pituitary Gland [ Adenoma TGLs = 2-10 ]	Transit Epithe Pars Distalis	Metaplasia Adenoma	Squamous, Minimal
* Thymus		Atrophy	Minimal
* Thyroid Gland [ Adenoma TGLs = 1-3 ]	Follicle C Cell	Adenoma Hyperplasia	Mild

---

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 440

TRT#: 5

SEX: Male

DAY ON TEST: 730

DOSE: 30 mg/m3

DISP: Terminal Sacrifice

HISTO: 60410

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	* Preputial Gland	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Thymus	* Trachea
* Urinary Bladder			

**MISSING**

* Lymph Node, Bronchial	* Mammary Gland
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**OBSERVATIONS**

* Adrenal Cortex		Vacuolization Cytoplasmic	Minimal
* Kidney		Nephropathy	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Moderate
	Epiglottis	Infiltration Cellular	Mixed Cell, Minimal
		Metaplasia	Squamous, Moderate
* Liver		Basophilic Focus	
* Lung		Fibrosis	Minimal
	Alveolar Epith	Hyperplasia	Minimal
	Alv/Bron Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Mild
	Alveolus	Proteinosis	Minimal
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild
		Inflammation	Suppurative, Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

---

**ANIMAL ID:** 440

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** 30 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60410

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

* Pituitary Gland	Pars Distalis	Adenoma	
* Prostate		Inflammation	Minimal
* Thyroid Gland	C Cell	Hyperplasia	Minimal

---



Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 441

TRT#: 5

SEX: Male

DAY ON TEST: 529

DOSE: 30 mg/m3

DISP: Moribund Sacrifice

HISTO: 60411

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Liver	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	Peripheral Nerve	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	Skeletal Muscle
* Skin	Spinal Cord	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Trachea	* Urinary Bladder

MISSING

* Lymph Node, Bronchial	* Mammary Gland
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OBSERVATIONS

* Brain		Compression	Marked
* Kidney		Nephropathy	Mild
* Larynx	Epiglottis	Metaplasia	Squamous, Mild
* Lung	Alveolar Epith	Fibrosis	Minimal
		Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Mild
[ Infiltration Cellular TGLs = 3-4+5 ]			
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild
		Inflammation	Suppurative, Mild
* Pituitary Gland	Pars Distalis	Adenoma	
[ Adenoma TGLs = 4-10 ]			
* Thymus		Atrophy	Marked
* Thyroid Gland	C Cell	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 441

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 529

**DOSE:** 30 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60411

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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PRIMARY CAUSE OF DEATH - Pituitary Gland Pars Distalis Adenoma

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 442

TRT#: 5

SEX: Male

DAY ON TEST: 731

DOSE: 30 mg/m3

DISP: Terminal Sacrifice

HISTO: 60412

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Liver	* Lymph Node, Mandibular
* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Stomach, Forestomach	* Stomach, Glandular	* Testes	* Trachea
* Urinary Bladder			

MISSING

\* Mammary Gland

OBSERVATIONS

* Adrenal Cortex		Hypertrophy	Minimal
		Vacuolization Cytoplasmic	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Moderate
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Moderate
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Mild
	Alveolus	Proteinosis	Minimal
	[ Infiltration Cellular TGLs = 3-4+5 ]		
Lymph Node	Lumbar	Hyperplasia	Plasma Cell, Marked
	[ Hyperplasia TGLs = 4-17 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Minimal
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
Test Type: CHRONIC  
Route: RESPIRATORY EXPOSURE WHOLE BODY  
Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
Time Report Requested: 09:56:24  
First Dose M/F: 07/20/09 / 07/20/09  
Lab: BNW

ANIMAL ID: 442

TRT#: 5

SEX: Male

DAY ON TEST: 731

DOSE: 30 mg/m3

DISP: Terminal Sacrifice

HISTO: 60412

**ORGAN AND ACCOUNTABLE SITE STATUS**

* Skin	Goblet Cell	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
		Ulcer	Mild
[ Ulcer TGLs = 1,2-15+16 ]			
* Spleen		Hematopoietic Cell Proliferation	Minimal
* Thymus		Atrophy	Minimal
* Thyroid Gland	C Cell	Hyperplasia	Minimal
	Follicle	Hyperplasia	Minimal

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 443

TRT#: 5

SEX: Male

DAY ON TEST: 730

DOSE: 30 mg/m3

DISP: Terminal Sacrifice

HISTO: 60413

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Liver	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Pancreas	* Preputial Gland	* Salivary Glands	* Seminal Vesicle
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Trachea	* Urinary Bladder	

**MISSING**

* Mammary Gland	* Parathyroid Gland
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**OBSERVATIONS**

* Brain		Compression	Mild
* Heart		Cardiomyopathy	Minimal
* Kidney		Hydronephrosis	Mild
		Nephropathy	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
	Epiglottis	Metaplasia	Squamous, Mild
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Mild
	Alveolus	Proteinosis	Minimal
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 443

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** 30 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60413

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Pituitary Gland	Pars Distalis	Adenoma	
	Pars Intermed	Hyperplasia	Minimal
[ Adenoma TGLs = 2-10 ]			
* Prostate		Inflammation	Minimal
* Thymus		Atrophy	Minimal
* Thyroid Gland	C Cell	Hyperplasia	Mild

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**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 444

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** 30 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60414

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Pancreas
* Parathyroid Gland	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Thyroid Gland	* Trachea
* Urinary Bladder			

**MISSING**

\* Mammary Gland

**OBSERVATIONS**

* Heart		Cardiomyopathy	Mild
* Kidney		Nephropathy	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Mild
* Liver		Basophilic Focus	
		Clear Cell Focus	
	Bile Duct	Cyst	Minimal
	[ Cyst TGLs = 1-6 ]		
* Lung		Fibrosis	Moderate
	Alveolar Epith	Hyperplasia	Mild
	Alv/Bron Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Mild
	Alveolus	Proteinosis	Minimal
	[ Infiltration Cellular TGLs = 2-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Moderate
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 444

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** 30 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60414

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Mild
* Pituitary Gland	Pars Nervosa	Granular Cell Tumor Benign	
* Thymus		Atrophy	Mild

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 445

TRT#: 5

SEX: Male

DAY ON TEST: 731

DOSE: 30 mg/m3

DISP: Terminal Sacrifice

HISTO: 60415

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Parathyroid Gland
* Pituitary Gland	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Trachea	* Urinary Bladder

MISSING

* Lymph Node, Bronchial	* Mammary Gland
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OBSERVATIONS

* Eye	Retina	Atrophy Cataract Inflammation	Moderate Moderate Moderate
	[ Cataract TGLs = 1-13 ] [ Inflammation TGLs = 2-13 ]		
* Kidney	Renal Tubule	Hyperplasia Nephropathy	Moderate Minimal
* Larynx	Epiglottis Epiglottis	Hyperplasia Metaplasia	Squamous, Mild Squamous, Mild
* Liver	Bile Duct	Hyperplasia	Minimal
* Lung	Alv/Bron Epith Alveolar Epith	Fibrosis Hyperplasia Hyperplasia Hyperplasia Infiltration Cellular Inflammation	Minimal Minimal Minimal Lymphohistiocy, Minimal Histiocyte, Mild Chronic Active, Mild
	[ Infiltration Cellular TGLs = 3-4+5 ]		
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 445

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 731

**DOSE:** 30 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60415

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Pancreas	Acinus	Atrophy	Minimal
* Thymus		Atrophy	Mild
* Thyroid Gland	C Cell	Hyperplasia	Minimal

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 446

TRT#: 5

SEX: Male

DAY ON TEST: 730

DOSE: 30 mg/m3

DISP: Terminal Sacrifice

HISTO: 60416

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Lymph Node, Bronchial	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Testes	* Thymus
* Trachea			

MISSING

* Lymph Node, Mandibular	* Mammary Gland
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OBSERVATIONS

* Adrenal Cortex		Hypertrophy	Minimal
		Vacuolization Cytoplasmic	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
	Epiglottis	Infiltration Cellular	Mixed Cell, Minimal
		Metaplasia	Squamous, Mild
* Liver		Basophilic Focus	
		Clear Cell Focus	
* Lung		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Chronic Active, Mild
	Alveolus	Proteinosis	Minimal
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Moderate
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 446

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** 30 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60416

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Preputial Gland		Inflammation	Minimal
* Thyroid Gland	C Cell	Adenoma	
	Follicle	Hyperplasia	Minimal
* Urinary Bladder	Transit Epithe	Hyperplasia	Minimal

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 447

TRT#: 5

SEX: Male

DAY ON TEST: 729

DOSE: 30 mg/m3

DISP: Terminal Sacrifice

HISTO: 60417

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Lymph Node, Bronchial	* Lymph Node, Mandibular
* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

\* Mammary Gland

OBSERVATIONS

* Heart		Cardiomyopathy	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
	Epiglottis	Metaplasia	Squamous, Mild
* Liver		Clear Cell Focus	
* Lung		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Chronic Active, Mild
	Alveolus	Proteinosis	Mild
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild
		Inflammation	Suppurative, Minimal
* Preputial Gland		Inflammation	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 448

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 268

**DOSE:** 30 mg/m3

**DISP:** Natural Death

**HISTO:** 60418

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex          | * Adrenal Medulla           | Blood Vessel             | * Bone                     |
| * Bone Marrow             | * Epididymis                | * Esophagus              | * Eye                      |
| * Harderian Gland         | * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic      | * Kidney                    | * Liver                  | * Lymph Node, Bronchial    |
| * Lymph Node, Mandibular  | * Lymph Node, Mesenteric    | * Pancreas               | * Parathyroid Gland        |
| * Pituitary Gland         | * Prostate                  | * Salivary Glands        | * Seminal Vesicle          |
| * Skin                    | * Spleen                    | * Stomach, Forestomach   | * Stomach, Glandular       |
| * Testes                  | * Thymus                    | * Thyroid Gland          | * Trachea                  |
| * Urinary Bladder         |                             |                          |                            |

**MISSING**

- |                           |                 |
|---------------------------|-----------------|
| * Lymph Node, Mediastinal | * Mammary Gland |
|---------------------------|-----------------|

**OBSERVATIONS**

- |                   |  |                               |                      |
|-------------------|--|-------------------------------|----------------------|
| * Brain           |  | Necrosis                      | Mild                 |
|                   | [ Necrosis TGLs = 1,3-1+15 ]           |                               |                      |
| * Larynx          | Epiglottis                             | Metaplasia                    | Squamous, Minimal    |
| * Lung            |  | Infiltration Cellular         | Histiocyte, Minimal  |
|                   | [ Infiltration Cellular TGLs = 2-4+5 ] |                               |                      |
| * Nose            | Olfactory Epi                          | Accumulation, Hyaline Droplet | Mild                 |
|                   | Respirat Epith                         | Accumulation, Hyaline Droplet | Minimal              |
|                   | Goblet Cell                            | Hyperplasia                   | Minimal              |
|                   |  | Inflammation                  | Suppurative, Minimal |
| * Preputial Gland |  | Inflammation                  | Minimal              |

**PRIMARY CAUSE OF DEATH** - Brain Necrosis

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 449

TRT#: 5

SEX: Male

DAY ON TEST: 730

DOSE: 30 mg/m3

DISP: Terminal Sacrifice

HISTO: 60419

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Trachea	* Urinary Bladder		

**MISSING**

\* Mammary Gland

**OBSERVATIONS**

* Heart		Cardiomyopathy	Minimal
* Kidney	Pelvis	Inflammation	Minimal
		Nephropathy	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
	Epiglottis	Metaplasia	Squamous, Mild
* Liver		Basophilic Focus	
		Clear Cell Focus	
	[ Basophilic Focus TGLs = 2-7 ]		
* Lung		Fibrosis	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Mild
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild
		Inflammation	Suppurative, Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 449

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** 30 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60419

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* Thymus

Atrophy

Minimal

\* Thyroid Gland

C Cell

Adenoma

C Cell

Hyperplasia

Mild

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 450

TRT#: 5

SEX: Male

DAY ON TEST: 639

DOSE: 30 mg/m3

DISP: Moribund Sacrifice

HISTO: 60420

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Epididymis	* Esophagus	* Eye	* Harderian Gland
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Liver
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Trachea	* Urinary Bladder

MISSING

\* Mammary Gland

OBSERVATIONS

* Adrenal Cortex		Hypertrophy	Minimal
		Vacuolization Cytoplasmic	Minimal
* Brain		Compression	Marked
		Hydrocephalus	Mild
* Heart		Cardiomyopathy	Minimal
* Kidney		Nephropathy	Mild
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
	Epiglottis	Metaplasia	Squamous, Mild
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Mild
	Alveolus	Proteinosis	Minimal
	[ Infiltration Cellular TGLs = 2-4+5 ]		
Mesentery	Fat	Hemorrhage	Minimal
	[ Hemorrhage TGLs = 3-15 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
Test Type: CHRONIC  
Route: RESPIRATORY EXPOSURE WHOLE BODY  
Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Metal working fluids (Trim VX)  
CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
Time Report Requested: 09:56:24  
First Dose M/F: 07/20/09 / 07/20/09  
Lab: BNW

ANIMAL ID: 450

TRT#: 5

SEX: Male

DAY ON TEST: 639

DOSE: 30 mg/m3

DISP: Moribund Sacrifice

HISTO: 60420

ORGAN AND ACCOUNTABLE SITE STATUS

	Glands, Olfactory Epi	Hyperplasia	Mild
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Adenoma	
[ Adenoma TGLs = 1-10 ]			
* Preputial Gland		Inflammation	Mild
* Thymus		Atrophy	Mild
* Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH - Pituitary Gland Pars Distalis Adenoma

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 601

TRT#: 7

SEX: Male

DAY ON TEST: 730

DOSE: 100 mg/m3

DISP: Terminal Sacrifice

HISTO: 60271

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Liver	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	Mesentery
* Pancreas	* Parathyroid Gland	* Preputial Gland	* Salivary Glands
* Seminal Vesicle	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Trachea	* Urinary Bladder		

MISSING

* Lymph Node, Mandibular	* Mammary Gland
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OBSERVATIONS

* Adrenal Cortex		Hypertrophy	Minimal
		Vacuolization Cytoplasmic	Minimal
* Heart		Cardiomyopathy	Mild
* Kidney		Inflammation	Granulomatous, Moderate
		Nephropathy	Minimal
	[ Inflammation TGLs = 4-15 ]		
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
		Infiltration Cellular	Mixed Cell, Mild
	Epiglottis	Metaplasia	Squamous, Mild
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Mild
	Alveolar Epith	Hyperplasia	Mild
	BALT	Hyperplasia	Lymphohistiocy, Minimal
		Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Chronic Active, Moderate
	Alveolus	Proteinosis	Mild
	[ Infiltration Cellular TGLs = 2-4+5 ]		
Lymph Node	Renal	Hyperplasia	Plasma Cell, Mild
	[ Hyperplasia TGLs = 5-7 ]		

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 601

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** 100 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60271

**ORGAN AND ACCOUNTABLE SITE STATUS**

* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocytosis, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
	Transit Epithe	Hyperplasia	Mild
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Adenoma	
		Cyst	Minimal
	Pars Distalis	Hyperplasia	Mild
* Prostate		Inflammation	Minimal
* Skin		Ulcer	Mild
	[ Ulcer TGLs = 1-17 ]		
* Spleen		Hematopoietic Cell Proliferation	Minimal
	[ Hematopoietic Cell Proliferation TGLs = 3-6 ]		
* Thymus		Atrophy	Mild
* Thyroid Gland	C Cell	Hyperplasia	Mild

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 602

TRT#: 7

SEX: Male

DAY ON TEST: 729

DOSE: 100 mg/m3

DISP: Terminal Sacrifice

HISTO: 60272

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Thymus	* Trachea
* Urinary Bladder			

MISSING

\* Mammary Gland

OBSERVATIONS

* Heart		Cardiomyopathy	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
	Epiglottis	Metaplasia	Squamous, Mild
* Liver		Clear Cell Focus	
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Chronic Active, Moderate
	Alveolus	Proteinosis	Mild
	[ Infiltration Cellular TGLs = 3-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Minimal
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Moderate
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Adenoma	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 602

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** 100 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60272

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Adenoma TGLs = 2-10 ]

\* Preputial Gland

Inflammation

Minimal

\* Thyroid Gland

C Cell

Hyperplasia

Mild

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 603

TRT#: 7

SEX: Male

DAY ON TEST: 730

DOSE: 100 mg/m3

DISP: Terminal Sacrifice

HISTO: 60273

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Lymph Node, Mandibular
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Parathyroid Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Testes	* Thymus
* Trachea	* Urinary Bladder		

MISSING

* Lymph Node, Bronchial	* Mammary Gland
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OBSERVATIONS

* Adrenal Cortex		Hypertrophy	Minimal
		Vacuolization Cytoplasmic	Minimal
* Heart		Cardiomyopathy	Minimal
* Islets, Pancreatic		Carcinoma	
	[ Carcinoma TGLs = 3-15 ]		
* Kidney		Nephropathy	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Mild
* Liver		Clear Cell Focus	
* Lung		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Moderate
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Chronic Active, Marked
	Alveolus	Proteinosis	Moderate
	[ Infiltration Cellular TGLs = 2-4+5 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 603

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** 100 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60273

**ORGAN AND ACCOUNTABLE SITE STATUS**

	Respirat Epith	Hyperplasia	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild
	Transit Epithe	Hyperplasia	Minimal
	Transit Epithe	Metaplasia	Squamous, Minimal
* Pancreas	Acinus	Atrophy	Minimal
* Pituitary Gland	Pars Distalis	Adenoma	
* Skin	Epidermis	Keratoacanthoma	
	[ Keratoacanthoma TGLs = 1-16 ]		
* Thyroid Gland	C Cell	Hyperplasia	Minimal



Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 604

TRT#: 7

SEX: Male

DAY ON TEST: 730

DOSE: 100 mg/m3

DISP: Terminal Sacrifice

HISTO: 60274

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Kidney	* Liver	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Thymus	* Trachea	* Urinary Bladder	

**MISSING**

* Lymph Node, Mediastinal	* Mammary Gland
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**OBSERVATIONS**

* Adrenal Cortex		Hypertrophy	Minimal
		Vacuolization Cytoplasmic	Minimal
* Heart		Cardiomyopathy	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
	Epiglottis	Metaplasia	Squamous, Moderate
* Lung		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Mild
	Alveolar Epith	Hyperplasia	Marked
		Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Chronic Active, Moderate
	Alveolar Epith	Metaplasia	Squamous, Minimal
	Alveolus	Proteinosis	Moderate
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Marked
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 604

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** 100 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60274

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* Thyroid Gland

C Cell

Inflammation  
Hyperplasia

Suppurative, Minimal  
Minimal

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 605

TRT#: 7

SEX: Male

DAY ON TEST: 731

DOSE: 100 mg/m3

DISP: Terminal Sacrifice

HISTO: 60275

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Blood Vessel	* Bone	* Bone Marrow	* Brain
* Epididymis	* Esophagus	* Eye	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Lymph Node, Mandibular
* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Testes	* Thymus
* Trachea	* Urinary Bladder		

MISSING

\* Mammary Gland

OBSERVATIONS

* Adrenal Cortex		Hypertrophy	Minimal
		Vacuolization Cytoplasmic	Minimal
* Adrenal Medulla		Pheochromocytoma Malignant	
[ Pheochromocytoma Malignant	TGLs = 4-15 ]		
* Harderian Gland		Inflammation	Minimal
* Kidney		Nephropathy	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Moderate
	Epiglottis	Infiltration Cellular	Mixed Cell, Minimal
		Metaplasia	Squamous, Moderate
* Liver		Clear Cell Focus	
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Mild
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Moderate
[ Infiltration Cellular	TGLs = 3-4+5 ]		
Lymph Node	Lumbar	Hyperplasia	Lymphoid, Minimal
[ Hyperplasia	TGLs = 5-7 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 605

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 731

**DOSE:** 100 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60275

**ORGAN AND ACCOUNTABLE SITE STATUS**

* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Moderate
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Marked
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
		Foreign Body	
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild
	Transit Epithe	Hyperplasia	Mild
		Inflammation	Suppurative, Minimal
	Transit Epithe	Metaplasia	Squamous, Minimal
* Preputial Gland		Inflammation	Minimal
* Skin		Ulcer	Mild
	[ Ulcer TGLs = 1,2-14+15 ]		
* Thyroid Gland	C Cell	Hyperplasia	Minimal

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 606

TRT#: 7

SEX: Male

DAY ON TEST: 729

DOSE: 100 mg/m3

DISP: Terminal Sacrifice

HISTO: 60276

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Salivary Glands	* Seminal Vesicle
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Trachea	* Urinary Bladder	

**MISSING**

* Lymph Node, Mediastinal	* Mammary Gland
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**OBSERVATIONS**

* Heart		Cardiomyopathy	Minimal
* Kidney		Nephropathy	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
	Epiglottis	Metaplasia	Squamous, Mild
* Liver		Clear Cell Focus	
* Lung		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Mild
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Moderate
	Alveolus	Proteinosis	Mild
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Marked
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild
		Inflammation	Suppurative, Minimal
* Preputial Gland		Inflammation	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 606

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** 100 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60276

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Prostate		Inflammation	Minimal
* Thymus		Atrophy	Minimal
* Thyroid Gland	C Cell	Hyperplasia	Minimal

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**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 607

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** 100 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60277

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * Adrenal Cortex            | Blood Vessel             | * Bone                     | * Bone Marrow             |
| * Brain                     | * Epididymis             | * Esophagus                | * Eye                     |
| * Harderian Gland           | * Intestine Large, Cecum | * Intestine Large, Colon   | * Intestine Large, Rectum |
| * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic      |
| * Liver                     | * Lymph Node, Bronchial  | * Lymph Node, Mandibular   | * Lymph Node, Mediastinal |
| * Lymph Node, Mesenteric    | * Pancreas               | * Parathyroid Gland        | * Pituitary Gland         |
| * Prostate                  | * Salivary Glands        | * Seminal Vesicle          | * Spleen                  |
| * Stomach, Forestomach      | * Stomach, Glandular     | * Testes                   | * Trachea                 |
| * Urinary Bladder           |                          |                            |                           |

**MISSING**

- \* Mammary Gland

**OBSERVATIONS**

- |                   |  |                               |                          |
|-------------------|--|-------------------------------|--------------------------|
| * Adrenal Medulla |  | Hyperplasia                   | Minimal                  |
| * Heart           |  | Cardiomyopathy                | Minimal                  |
| * Kidney          |  | Nephropathy                   | Minimal                  |
| * Larynx          | Epiglottis                             | Hyperplasia                   | Squamous, Moderate       |
|                   |  | Infiltration Cellular         | Mixed Cell, Minimal      |
|                   | Epiglottis                             | Metaplasia                    | Squamous, Moderate       |
| * Lung            |  | Fibrosis                      | Minimal                  |
|                   | Alv/Bron Epith                         | Hyperplasia                   | Mild                     |
|                   | Alveolar Epith                         | Hyperplasia                   | Mild                     |
|                   |  | Infiltration Cellular         | Histiocyte, Moderate     |
|                   |  | Inflammation                  | Chronic Active, Moderate |
|                   | Alveolar Epith                         | Metaplasia                    | Squamous, Minimal        |
|                   | Alveolus                               | Proteinosis                   | Mild                     |
|                   | [ Infiltration Cellular TGLs = 5-4+5 ] |                               |                          |
| * Nose            | Olfactory Epi                          | Accumulation, Hyaline Droplet | Marked                   |
|                   | Respirat Epith                         | Accumulation, Hyaline Droplet | Mild                     |
|                   | Goblet Cell                            | Hyperplasia                   | Minimal                  |
|                   | Glands, Olfactory Epi                  | Hyperplasia                   | Mild                     |

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 607

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** 100 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60277

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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	Respirat Epith	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Preputial Gland		Inflammation	Minimal
* Skin		Cyst Epithelial Inclusion	
		Ulcer	Mild
	[ Cyst Epithelial Inclusion TGLs = 4-15 ]		
	[ Ulcer TGLs = 1,2,3-16+17+18 ]		
* Thymus		Atrophy	Mild
* Thyroid Gland	C Cell	Hyperplasia	Mild

---



Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 608

TRT#: 7

SEX: Male

DAY ON TEST: 491

DOSE: 100 mg/m3

DISP: Moribund Sacrifice

HISTO: 60278

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Epididymis	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Kidney	* Liver	* Lymph Node, Bronchial	* Lymph Node, Mandibular
* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Trachea	* Urinary Bladder		

MISSING

\* Mammary Gland

OBSERVATIONS

* Adrenal Cortex		Vacuolization Cytoplasmic	Minimal
* Brain		Compression	Moderate
		Hydrocephalus	Moderate
* Larynx	Epiglottis	Hyperplasia	Squamous, Moderate
	Epiglottis	Metaplasia	Squamous, Moderate
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Mild
	Alveolar Epith	Hyperplasia	Moderate
		Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Chronic Active, Moderate
	[ Infiltration Cellular TGLs = 1-4+5+15 ]		
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Moderate
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Adenoma	Multiple

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

---

**ANIMAL ID:** 608

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 491

**DOSE:** 100 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60278

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

[ Adenoma TGLs = 2-10 ]

\* Thymus

Atrophy

Minimal

\* Thyroid Gland

C Cell

Hyperplasia

Mild

---

PRIMARY CAUSE OF DEATH

- Pituitary Gland Pars Distalis Adenoma

---

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 609

TRT#: 7

SEX: Male

DAY ON TEST: 730

DOSE: 100 mg/m3

DISP: Terminal Sacrifice

HISTO: 60279

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Trachea	* Urinary Bladder

MISSING

\* Mammary Gland

OBSERVATIONS

* Adrenal Cortex		Hypertrophy	Minimal
		Vacuolization Cytoplasmic	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Moderate
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Moderate
* Liver		Clear Cell Focus	
* Lung		Fibrosis	Mild
	Alveolar Epith	Hyperplasia	Moderate
	Alv/Bron Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Chronic Active, Moderate
	Alveolus	Proteinosis	Mild
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Mild
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Moderate
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Marked
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 609

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** 100 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60279

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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	Transit Epithe	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Preputial Gland		Fibrosis	Minimal
		Inflammation	Minimal
* Testes	Interstit Cell	Hyperplasia	Minimal
* Thymus		Atrophy	Mild
* Thyroid Gland	C Cell	Hyperplasia	Minimal

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 610

TRT#: 7

SEX: Male

DAY ON TEST: 695

DOSE: 100 mg/m3

DISP: Moribund Sacrifice

HISTO: 60280

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * Adrenal Medulla           | Blood Vessel             | * Bone                     | * Bone Marrow             |
| * Brain                     | * Epididymis             | * Esophagus                | * Eye                     |
| * Harderian Gland           | * Intestine Large, Cecum | * Intestine Large, Colon   | * Intestine Large, Rectum |
| * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic      |
| * Liver                     | * Lymph Node, Mandibular | * Pancreas                 | * Parathyroid Gland       |
| * Preputial Gland           | * Prostate               | * Salivary Glands          | * Seminal Vesicle         |
| * Spleen                    | * Stomach, Forestomach   | * Stomach, Glandular       | * Testes                  |
| * Trachea                   | * Urinary Bladder        |                            |                           |

**MISSING**

- \* Mammary Gland

**OBSERVATIONS**

- |                           |   |                           |                          |
|---------------------------|---|---------------------------|--------------------------|
| * Adrenal Cortex          |   | Angiectasis               | Minimal                  |
|                           |   | Hypertrophy               | Minimal                  |
|                           |   | Vacuolization Cytoplasmic | Minimal                  |
| * Heart                   |   | Cardiomyopathy            | Mild                     |
| * Kidney                  |   | Nephropathy               | Minimal                  |
| * Larynx                  | Epiglottis                                | Hyperplasia               | Squamous, Moderate       |
|                           |   | Infiltration Cellular     | Mixed Cell, Mild         |
|                           | Epiglottis                                | Metaplasia                | Squamous, Moderate       |
| * Lung                    |   | Fibrosis                  | Minimal                  |
|                           | Alv/Bron Epith                            | Hyperplasia               | Minimal                  |
|                           | Alveolar Epith                            | Hyperplasia               | Mild                     |
|                           |   | Infiltration Cellular     | Histiocyte, Mild         |
|                           |   | Inflammation              | Chronic Active, Marked   |
|                           | Alveolus                                  | Proteinosis               | Mild                     |
|                           | [ Infiltration Cellular TGLs = 4-4+5+15 ] |                           |                          |
| * Lymph Node, Bronchial   |   | Hyperplasia               | Lymphohistiocy, Mild     |
| * Lymph Node, Mediastinal |   | Hyperplasia               | Lymphohistiocy, Moderate |
| * Lymph Node, Mesenteric  |   | Hyperplasia               | Lymphohistiocy, Moderate |
|                           | [ Hyperplasia TGLs = 6-15 ]               |                           |                          |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
Test Type: CHRONIC  
Route: RESPIRATORY EXPOSURE WHOLE BODY  
Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Metal working fluids (Trim VX)  
CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
Time Report Requested: 09:56:24  
First Dose M/F: 07/20/09 / 07/20/09  
Lab: BNW

ANIMAL ID: 610

TRT#: 7

SEX: Male

DAY ON TEST: 695

DOSE: 100 mg/m3

DISP: Moribund Sacrifice

HISTO: 60280

ORGAN AND ACCOUNTABLE SITE STATUS

* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
* Skin		Inflammation	Moderate
	[ Inflammation TGLs = 3-16+17+18+19 ]		
* Thymus		Atrophy	Moderate
* Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Minimal

PRIMARY CAUSE OF DEATH - Skin Inflammation

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 611

TRT#: 7

SEX: Male

DAY ON TEST: 613

DOSE: 100 mg/m3

DISP: Moribund Sacrifice

HISTO: 60281

ORGAN AND ACCOUNTABLE SITE STATUS

**NORMAL**

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex           | * Adrenal Medulla         | Blood Vessel                | * Bone                   |
| * Bone Marrow              | * Brain                   | * Epididymis                | * Esophagus              |
| * Eye                      | * Harderian Gland         | * Heart                     | * Intestine Large, Cecum |
| * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic      | * Liver                     | * Lymph Node, Mandibular |
| * Lymph Node, Mesenteric   | * Pancreas                | * Parathyroid Gland         | * Pituitary Gland        |
| * Preputial Gland          | * Prostate                | * Salivary Glands           | * Seminal Vesicle        |
| * Spleen                   | * Stomach, Forestomach    | * Stomach, Glandular        | * Testes                 |
| * Trachea                  | * Urinary Bladder         |                             |                          |

**MISSING**

- \* Mammary Gland

**OBSERVATIONS**

- |                           |  |                               |                          |
|---------------------------|--|-------------------------------|--------------------------|
| * Kidney                  | Pelvis                                 | Inflammation                  | Mild                     |
| * Larynx                  | Epiglottis                             | Hyperplasia                   | Squamous, Mild           |
|                           | Epiglottis                             | Metaplasia                    | Squamous, Mild           |
| * Lung                    |  | Fibrosis                      | Minimal                  |
|                           | Alveolar Epith                         | Hyperplasia                   | Mild                     |
|                           | Alv/Bron Epith                         | Hyperplasia                   | Mild                     |
|                           |  | Infiltration Cellular         | Histiocyte, Mild         |
|                           |  | Inflammation                  | Chronic Active, Moderate |
|                           | Alveolus                               | Proteinosis                   | Moderate                 |
|                           | [ Infiltration Cellular TGLs = 1-4+5 ] |                               |                          |
| * Lymph Node, Bronchial   |  | Hyperplasia                   | Lymphohistiocy, Minimal  |
| * Lymph Node, Mediastinal |  | Hyperplasia                   | Lymphohistiocy, Moderate |
| * Nose                    | Olfactory Epi                          | Accumulation, Hyaline Droplet | Moderate                 |
|                           | Respirat Epith                         | Accumulation, Hyaline Droplet | Minimal                  |
|                           | Goblet Cell                            | Hyperplasia                   | Minimal                  |
|                           | Glands, Olfactory Epi                  | Hyperplasia                   | Mild                     |
|                           |  | Inflammation                  | Suppurative, Minimal     |
| * Skin                    |  | Ulcer                         | Mild                     |

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 611

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 613

**DOSE:** 100 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60281

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Ulcer TGLs = 2,4-16+17 ]

\* Thymus

Atrophy

Moderate

\* Thyroid Gland

C Cell

Hyperplasia

Mild

---

PRIMARY CAUSE OF DEATH

- Skin Ulcer

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 612

TRT#: 7

SEX: Male

DAY ON TEST: 729

DOSE: 100 mg/m3

DISP: Terminal Sacrifice

HISTO: 60282

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Lymph Node, Mediastinal	* Mammary Gland
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OBSERVATIONS

* Adrenal Cortex		Vacuolization Cytoplasmic	Minimal
Lacrimal Gland		Atrophy	Mild
[ Atrophy TGLs = 5-17 ]			
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
	Epiglottis	Infiltration Cellular	Mixed Cell, Mild
		Metaplasia	Squamous, Mild
* Liver		Clear Cell Focus	
		Hepatodiaphragmatic Nodule	
[ Hepatodiaphragmatic Nodule TGLs = 3-16 ]			
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Moderate
	Alveolar Epith	Hyperplasia	Mild
	BALT	Hyperplasia	Lymphohistiocy, Minimal
		Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Chronic Active, Moderate
	Alveolus	Proteinosis	Mild
[ Infiltration Cellular TGLs = 2-4+5+15 ]			
Lymph Node	Lumbar	Hyperplasia	Plasma Cell, Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 612

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** 100 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60282

**ORGAN AND ACCOUNTABLE SITE STATUS**

[ Hyperplasia TGLs = 4-15 ]			
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocytosis, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
* Skin		Ulcer	Mild
[ Ulcer TGLs = 1-16 ]			

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 613

TRT#: 7

SEX: Male

DAY ON TEST: 731

DOSE: 100 mg/m3

DISP: Terminal Sacrifice

HISTO: 60283

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Liver	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Trachea	* Urinary Bladder

MISSING

* Lymph Node, Bronchial	* Mammary Gland
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OBSERVATIONS

* Adrenal Cortex		Hypertrophy	Minimal
		Vacuolization Cytoplasmic	Minimal
* Kidney		Nephropathy	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Moderate
* Lung		Alveolar/Bronchiolar Carcinoma	
		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Moderate
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Moderate
	Alveolar Epith	Metaplasia	Squamous, Minimal
	Alveolus	Proteinosis	Mild
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Moderate
Mesentery	Fat	Necrosis	Mild
	[ Necrosis TGLs = 2-7 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 613

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 731

**DOSE:** 100 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60283

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild
	Respirat Epith	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
	Olfactory Epi	Metaplasia	Squamous, Minimal
	Pars Distalis	Adenoma	
* Pituitary Gland		Inflammation	Minimal
* Preputial Gland		Atrophy	Mild
* Thymus		Hyperplasia	Mild
* Thyroid Gland	C Cell		

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 614

TRT#: 7

SEX: Male

DAY ON TEST: 730

DOSE: 100 mg/m3

DISP: Terminal Sacrifice

HISTO: 60284

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex          | * Adrenal Medulla           | Blood Vessel             | * Bone                     |
| * Bone Marrow             | * Brain                     | * Epididymis             | * Esophagus                |
| * Eye                     | * Harderian Gland           | * Heart                  | * Intestine Large, Cecum   |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic      | * Lymph Node, Mandibular    | * Lymph Node, Mesenteric | * Pancreas                 |
| * Parathyroid Gland       | * Pituitary Gland           | * Preputial Gland        | * Prostate                 |
| * Salivary Glands         | * Seminal Vesicle           | * Skin                   | * Spleen                   |
| * Stomach, Forestomach    | * Stomach, Glandular        | * Thymus                 | * Trachea                  |
| * Urinary Bladder         |                             |                          |                            |

MISSING

- \* Mammary Gland

OBSERVATIONS

- |   |                |                                      |                                       |
|---|----------------|--------------------------------------|---------------------------------------|
| * Intestine Large, Colon<br>[ Adenoma TGLs = 3-16 ] |                | Adenoma                              |                                       |
| * Kidney  |                | Nephropathy                          | Moderate                              |
| * Larynx  | Epiglottis     | Hyperplasia<br>Infiltration Cellular | Squamous, Mild<br>Mixed Cell, Minimal |
|   | Epiglottis     | Metaplasia                           | Squamous, Moderate                    |
| * Liver   |                | Basophilic Focus<br>Clear Cell Focus |                                       |
|   | Bile Duct      | Dilatation                           | Marked                                |
| [ Dilatation TGLs = 2-15 ]                          |                |                                      |                                       |
| * Lung  |                | Fibrosis                             | Mild                                  |
|   | Alv/Bron Epith | Hyperplasia                          | Moderate                              |
|   | Alveolar Epith | Hyperplasia<br>Infiltration Cellular | Mild<br>Histiocyte, Mild              |
|   |                | Inflammation                         | Chronic Active, Moderate              |
|   | Alveolus       | Proteinosis                          | Moderate                              |
| [ Infiltration Cellular TGLs = 1-4+5 ]              |                |                                      |                                       |
| * Lymph Node, Bronchial                             |                | Hyperplasia                          | Lymphohistiocy, Mild                  |

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 614

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** 100 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60284

**ORGAN AND ACCOUNTABLE SITE STATUS**

* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocytosis, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild
	Respirat Epith	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Testes	Germinal Epith	Atrophy	Mild
	Artery	Inflammation	Chronic, Mild
* Thyroid Gland	C Cell	Hyperplasia	Minimal

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 615

TRT#: 7

SEX: Male

DAY ON TEST: 729

DOSE: 100 mg/m3

DISP: Terminal Sacrifice

HISTO: 60285

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Pancreas
* Parathyroid Gland	* Preputial Gland	* Prostate	* Seminal Vesicle
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Thymus	* Trachea	* Urinary Bladder

MISSING

\* Mammary Gland

OBSERVATIONS

* Eye	Retina	Atrophy	Mild
* Kidney		Nephropathy	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
	Epiglottis	Metaplasia	Squamous, Minimal
* Liver		Clear Cell Focus	
		Hepatocellular Adenoma	
	[ Hepatocellular Adenoma TGLs = 3-15 ]		
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Mild
	Alveolar Epith	Hyperplasia	Moderate
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Moderate
	Alveolus	Proteinosis	Marked
	[ Infiltration Cellular TGLs = 2-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Moderate
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Moderate
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 615

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** 100 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60285

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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	Glands, Olfactory Epi	Hyperplasia	Mild
	Transit Epithe	Hyperplasia	Mild
		Inflammation	Suppurative, Minimal
	Transit Epithe	Metaplasia	Squamous, Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
* Salivary Glands		Schwannoma Malignant	
	[ Schwannoma Malignant TGLs = 1-14 ]		
* Thyroid Gland	C Cell	Hyperplasia	Minimal

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**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 616

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 731

**DOSE:** 100 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60286

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Medulla         | Blood Vessel                | * Bone                   | * Bone Marrow              |
| * Brain                   | * Epididymis                | * Esophagus              | * Eye                      |
| * Harderian Gland         | * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic      | * Kidney                    | * Lymph Node, Mandibular | * Lymph Node, Mediastinal  |
| * Lymph Node, Mesenteric  | * Pancreas                  | * Parathyroid Gland      | * Pituitary Gland          |
| * Preputial Gland         | * Salivary Glands           | * Seminal Vesicle        | * Skin                     |
| * Spleen                  | * Stomach, Forestomach      | * Stomach, Glandular     | * Testes                   |
| * Trachea                 | * Urinary Bladder           |                          |                            |

**MISSING**

- \* Mammary Gland

**OBSERVATIONS**

- |  |                |                               |                          |
|--|----------------|-------------------------------|--------------------------|
| * Adrenal Cortex                       |                | Carcinoma                     |                          |
| [ Carcinoma TGLs = 1-7 ]               |                |                               |                          |
| * Larynx                               | Epiglottis     | Hyperplasia                   | Squamous, Moderate       |
|  | Epiglottis     | Infiltration Cellular         | Mixed Cell, Minimal      |
| * Liver                                |                | Metaplasia                    | Squamous, Moderate       |
|  |                | Angiectasis                   | Minimal                  |
| [ Angiectasis TGLs = 2-7 ]             |                | Basophilic Focus              |                          |
| * Lung                                 |                | Clear Cell Focus              |                          |
|  | Alv/Bron Epith | Fibrosis                      | Mild                     |
|  | Alveolar Epith | Hyperplasia                   | Mild                     |
|  |                | Hyperplasia                   | Moderate                 |
|  |                | Infiltration Cellular         | Histiocyte, Moderate     |
|  | Alveolus       | Inflammation                  | Chronic Active, Moderate |
| [ Infiltration Cellular TGLs = 3-4+5 ] |                | Proteinosis                   | Moderate                 |
| * Lymph Node, Bronchial                |                | Hyperplasia                   | Lymphohistiocy, Mild     |
| * Nose                                 | Olfactory Epi  | Accumulation, Hyaline Droplet | Moderate                 |

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 616

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 731

**DOSE:** 100 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60286

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild
		Inflammation	Suppurative, Minimal
* Prostate		Inflammation	Minimal
* Thymus		Atrophy	Minimal
* Thyroid Gland	C Cell	Hyperplasia	Minimal

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 617

TRT#: 7

SEX: Male

DAY ON TEST: 730

DOSE: 100 mg/m3

DISP: Terminal Sacrifice

HISTO: 60287

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Blood Vessel	* Bone	* Bone Marrow	* Brain
* Epididymis	* Esophagus	* Eye	* Harderian Gland
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Prostate
* Salivary Glands	* Skin	* Spleen	* Stomach, Glandular
* Testes	* Trachea	* Urinary Bladder	

MISSING

* Adrenal Medulla	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Mammary Gland
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INSUFFICIENT TISSUE

\* Lymph Node, Bronchial

OBSERVATIONS

* Adrenal Cortex		Carcinoma	
	[ Carcinoma TGLs = 4-15 ]		
* Heart		Cardiomyopathy	Mild
* Kidney		Nephropathy	Mild
* Larynx	Epiglottis	Hyperplasia	Squamous, Moderate
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Moderate
* Liver		Clear Cell Focus	
	[ Clear Cell Focus TGLs = 2,3-6 ]		
* Lung		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Mild
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Moderate
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 617

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** 100 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60287

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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	Glands, Olfactory Epi	Hyperplasia	Mild
		Inflammation	Suppurative, Minimal
* Preputial Gland		Inflammation	Minimal
* Seminal Vesicle		Atrophy	Mild
	[ Atrophy TGLs = 5-10 ]		
* Stomach, Forestomach		Squamous Cell Papilloma	
	[ Squamous Cell Papilloma TGLs = 6-16 ]		
* Thymus		Atrophy	Mild
* Thyroid Gland	C Cell	Hyperplasia	Minimal

---

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 618

TRT#: 7

SEX: Male

DAY ON TEST: 731

DOSE: 100 mg/m3

DISP: Terminal Sacrifice

HISTO: 60288

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Kidney	* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Parathyroid Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Stomach, Forestomach	* Stomach, Glandular	* Testes	* Thymus
* Trachea	* Urinary Bladder		

MISSING

\* Mammary Gland

OBSERVATIONS

* Adrenal Cortex		Vacuolization Cytoplasmic	Minimal
* Heart		Cardiomyopathy	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Moderate
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Moderate
* Liver		Inflammation	Granulomatous, Minimal
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Mild
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Chronic Active, Moderate
	Alveolus	Proteinosis	Mild
	[ Infiltration Cellular TGLs = 3-4+5 ]		
Lymph Node	Lumbar	Hyperplasia	Plasma Cell, Moderate
	[ Hyperplasia TGLs = 4-7 ]		
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Moderate
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
Test Type: CHRONIC  
Route: RESPIRATORY EXPOSURE WHOLE BODY  
Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
Time Report Requested: 09:56:24  
First Dose M/F: 07/20/09 / 07/20/09  
Lab: BNW

ANIMAL ID: 618

TRT#: 7

SEX: Male

DAY ON TEST: 731

DOSE: 100 mg/m3

DISP: Terminal Sacrifice

HISTO: 60288

**ORGAN AND ACCOUNTABLE SITE STATUS**

	Glands, Olfactory Epi	Hyperplasia	Moderate
	Transit Epithe	Hyperplasia	Minimal
		Inflammation	Suppurative, Mild
* Pancreas	Acinus	Atrophy	Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Mild
* Preputial Gland		Inflammation	Mild
* Skin		Ulcer	Mild
	[ Ulcer TGLs = 1,2-15+16 ]		
* Spleen		Hematopoietic Cell Proliferation	Minimal
* Thyroid Gland	C Cell	Hyperplasia	Mild

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 619

TRT#: 7

SEX: Male

DAY ON TEST: 730

DOSE: 100 mg/m3

DISP: Terminal Sacrifice

HISTO: 60289

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Pancreas
* Parathyroid Gland	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Trachea	* Urinary Bladder

MISSING

\* Mammary Gland

OBSERVATIONS

* Adrenal Cortex		Vacuolization Cytoplasmic	Minimal
* Kidney	Pelvis	Inflammation	Minimal
		Nephropathy	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Moderate
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Moderate
* Liver		Angiectasis	Minimal
		Clear Cell Focus	
		Eosinophilic Focus	
	[ Angiectasis TGLs = 3-6 ]		
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Mild
	Alveolar Epith	Hyperplasia	Moderate
		Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Chronic Active, Moderate
	Alveolus	Proteinosis	Moderate
	[ Infiltration Cellular TGLs = 2-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Moderate
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 619

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** 100 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60289

**ORGAN AND ACCOUNTABLE SITE STATUS**

* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild
	Transit Epithe	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
* Testes		Edema	Mild
	[ Edema TGLs = 1-9+16 ]		
* Thyroid Gland	C Cell	Hyperplasia	Mild



Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 620

TRT#: 7

SEX: Male

DAY ON TEST: 731

DOSE: 100 mg/m3

DISP: Terminal Sacrifice

HISTO: 06290

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Trachea	* Urinary Bladder		

**MISSING**

\* Mammary Gland

**OBSERVATIONS**

* Kidney	Pelvis	Inflammation	Mild
* Larynx	Epiglottis	Hyperplasia	Squamous, Moderate
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Mild
* Liver		Clear Cell Focus	
* Lung		Alveolar/Bronchiolar Adenoma	
		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Moderate
	Alveolus	Proteinosis	Mild
	[ Alveolar/Bronchiolar Adenoma TGLs = 2-5 ]		
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Mild
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 620

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 731

**DOSE:** 100 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 06290

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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	Glands, Olfactory Epi	Hyperplasia	Mild
	Respirat Epith	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Thymus		Atrophy	Mild
* Thyroid Gland	C Cell	Hyperplasia	Minimal

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 621

TRT#: 7

SEX: Male

DAY ON TEST: 535

DOSE: 100 mg/m3

DISP: Moribund Sacrifice

HISTO: 60291

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Liver	* Lymph Node, Mandibular
* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland	Peripheral Nerve
* Prostate	* Salivary Glands	* Seminal Vesicle	Skeletal Muscle
Spinal Cord	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Trachea	* Urinary Bladder		

MISSING

\* Mammary Gland

OBSERVATIONS

* Harderian Gland		Inflammation	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
	Epiglottis	Metaplasia	Squamous, Mild
* Lung		Fibrosis	Minimal
	Alveolar Epith	Hyperplasia	Moderate
	Alv/Bron Epith	Hyperplasia	Minimal
	BALT	Hyperplasia	Lymphohistiocytosis, Minimal
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Moderate
	Alveolus	Proteinosis	Mild
[ Infiltration Cellular	TGLs = 1-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocytosis, Mild
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocytosis, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild
		Inflammation	Suppurative, Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 621

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 535

**DOSE:** 100 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60291

**ORGAN AND ACCOUNTABLE SITE STATUS**

* Pituitary Gland	Pars Distalis	Adenoma	
* Preputial Gland		Inflammation	Mild
* Skin		Ulcer	Mild
[ Ulcer TGLs = 2,3-16+17 ]			
* Spleen		Hematopoietic Cell Proliferation	Mild
* Thymus		Atrophy	Minimal
* Thyroid Gland	C Cell	Hyperplasia	Minimal

**PRIMARY CAUSE OF DEATH** - Skin Ulcer

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 622

TRT#: 7

SEX: Male

DAY ON TEST: 626

DOSE: 100 mg/m3

DISP: Moribund Sacrifice

HISTO: 60292

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Stomach, Forestomach	* Stomach, Glandular	* Testes	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

\* Mammary Gland

OBSERVATIONS

* Adrenal Cortex		Vacuolization Cytoplasmic	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
	Epiglottis	Infiltration Cellular	Mixed Cell, Minimal
		Metaplasia	Squamous, Moderate
* Liver		Clear Cell Focus	
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Chronic Active, Moderate
	Alveolus	Proteinosis	Moderate
	[ Infiltration Cellular TGLs = 3-4+5 ]		
Lymph Node	Renal	Hyperplasia	Plasma Cell, Moderate
	Lumbar	Hyperplasia	Plasma Cell, Moderate
	[ Hyperplasia TGLs = 4-7 ]		
	[ Hyperplasia TGLs = 5-15 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
Test Type: CHRONIC  
Route: RESPIRATORY EXPOSURE WHOLE BODY  
Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
Time Report Requested: 09:56:24  
First Dose M/F: 07/20/09 / 07/20/09  
Lab: BNW

ANIMAL ID: 622

TRT#: 7

SEX: Male

DAY ON TEST: 626

DOSE: 100 mg/m3

DISP: Moribund Sacrifice

HISTO: 60292

**ORGAN AND ACCOUNTABLE SITE STATUS**

	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Glands, Olfactory Epi	Hyperplasia	Mild
		Inflammation	Suppurative, Minimal
* Skin		Inflammation	Minimal
		Ulcer	Mild
	[ Inflammation TGLs = 6-17 ]		
	[ Ulcer TGLs = 1,2-15+16 ]		
* Spleen		Hematopoietic Cell Proliferation	Minimal
* Thymus		Atrophy	Mild

PRIMARY CAUSE OF DEATH - Skin Ulcer

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 623

TRT#: 7

SEX: Male

DAY ON TEST: 731

DOSE: 100 mg/m3

DISP: Terminal Sacrifice

HISTO: 60293

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Liver	* Lymph Node, Bronchial
* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Pancreas	* Pituitary Gland
* Preputial Gland	* Salivary Glands	* Seminal Vesicle	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Trachea	* Urinary Bladder		

**MISSING**

* Mammary Gland	* Parathyroid Gland
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**OBSERVATIONS**

* Kidney	Pelvis	Inflammation	Mild
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Mild
* Lung		Alveolar/Bronchiolar Carcinoma	
		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Mild
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Chronic Active, Moderate
	Alveolus	Proteinosis	Moderate
	[ Alveolar/Bronchiolar Carcinoma TGLs = 3-5 ]		
	[ Infiltration Cellular TGLs = 2-4+5 ]		
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Respirat Epith	Hyperplasia	Minimal
	Goblet Cell	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 623

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 731

**DOSE:** 100 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60293

**ORGAN AND ACCOUNTABLE SITE STATUS**

	Glands, Olfactory Epi	Hyperplasia	Mild
	Transit Epithe	Hyperplasia	Minimal
* Prostate		Inflammation	Suppurative, Minimal
		Inflammation	Minimal
Skeletal Muscle		Hemangiosarcoma	
	[ Hemangiosarcoma TGLs = 4-15 ]		
* Testes	Interstit Cell	Adenoma	
		Cyst	Mild
	[ Adenoma TGLs = 1-9 ]		
* Thyroid Gland	Bilateral, C Cell	Adenoma	



Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 624

TRT#: 7

SEX: Male

DAY ON TEST: 729

DOSE: 100 mg/m3

DISP: Terminal Sacrifice

HISTO: 60294

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Liver	* Lymph Node, Mandibular
* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Thymus	* Trachea	* Urinary Bladder	

MISSING

\* Mammary Gland

INSUFFICIENT TISSUE

\* Lymph Node, Bronchial

OBSERVATIONS

* Heart		Cardiomyopathy	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
	Epiglottis	Metaplasia	Squamous, Mild
* Lung		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Moderate
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Chronic Active, Moderate
	Alveolus	Proteinosis	Mild
	[ Infiltration Cellular TGLs = 2-4+5 ]		
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Mild
	Respirat Epith	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 624

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** 100 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60294

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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	Glands, Olfactory Epi	Hyperplasia	Mild
		Inflammation	Suppurative, Minimal
* Skin		Ulcer	Mild
	[ Ulcer TGLs = 1-15 ]		
* Thyroid Gland	C Cell	Hyperplasia	Minimal

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 625

TRT#: 7

SEX: Male

DAY ON TEST: 730

DOSE: 100 mg/m3

DISP: Terminal Sacrifice

HISTO: 60295

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Testes	* Thymus
* Trachea	* Urinary Bladder		

MISSING

* Lymph Node, Mediastinal	* Mammary Gland
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OBSERVATIONS

* Adrenal Cortex		Hypertrophy	Mild
* Larynx	Epiglottis	Hyperplasia	Squamous, Moderate
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Moderate
* Liver	Bile Duct	Clear Cell Focus	
		Dilatation	Marked
	[ Dilatation TGLs = 2-7 ]		
* Lung		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Mild
	Alveolar Epith	Hyperplasia	Moderate
	BALT	Hyperplasia	Lymphohistiocy, Minimal
		Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Chronic Active, Moderate
	Alveolus	Proteinosis	Moderate
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 625

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** 100 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60295

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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	Goblet Cell	Hyperplasia	Mild
	Respirat Epith	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild
	Transit Epithe	Hyperplasia	Mild
		Inflammation	Suppurative, Mild
	Transit Epithe	Metaplasia	Squamous, Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Mild
* Thyroid Gland	C Cell	Hyperplasia	Minimal

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 626

TRT#: 7

SEX: Male

DAY ON TEST: 730

DOSE: 100 mg/m3

DISP: Terminal Sacrifice

HISTO: 60296

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Liver	* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Thymus	* Trachea
* Urinary Bladder			

MISSING

\* Mammary Gland

OBSERVATIONS

* Adrenal Cortex		Angiectasis	Minimal
* Eye	Retina	Atrophy	Mild
		Cataract	Mild
* Kidney	Pelvis	Inflammation	Minimal
		Nephropathy	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Moderate
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Chronic Active, Moderate
	Alveolus	Proteinosis	Minimal
	[ Infiltration Cellular TGLs = 2-4+5 ]		
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Moderate
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 626

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** 100 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60296

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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	Respirat Epith	Hyperplasia	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild
		Inflammation	Suppurative, Minimal
* Preputial Gland		Inflammation	Mild
	[ Inflammation TGLs = 1-9+15 ]		
* Prostate		Inflammation	Minimal
* Thyroid Gland	C Cell	Hyperplasia	Mild

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 627

TRT#: 7

SEX: Male

DAY ON TEST: 730

DOSE: 100 mg/m3

DISP: Terminal Sacrifice

HISTO: 60297

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mediastinal	* Mammary Gland
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OBSERVATIONS

* Adrenal Cortex		Hypertrophy	Minimal
* Kidney		Nephropathy	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Moderate
	Epiglottis	Infiltration Cellular	Mixed Cell, Minimal
		Metaplasia	Squamous, Moderate
* Liver		Basophilic Focus	
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Marked
		Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Chronic Active, Moderate
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Respirat Epith	Hyperplasia	Minimal
	Goblet Cell	Hyperplasia	Mild
	Glands, Olfactory Epi	Hyperplasia	Mild
		Inflammation	Suppurative, Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 627

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** 100 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60297

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* Preputial Gland

Inflammation

Minimal

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 628

TRT#: 7

SEX: Male

DAY ON TEST: 729

DOSE: 100 mg/m3

DISP: Terminal Sacrifice

HISTO: 60298

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Liver	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	* Salivary Glands	* Seminal Vesicle
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

\* Mammary Gland

OBSERVATIONS

* Adrenal Cortex		Hypertrophy	Mild
		Vacuolization Cytoplasmic	Minimal
* Kidney		Hydronephrosis	Mild
	[ Hydronephrosis TGLs = 2-7 ]		
* Larynx	Epiglottis	Hyperplasia	Squamous, Moderate
	Epiglottis	Metaplasia	Squamous, Moderate
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Mild
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Moderate
	Alveolus	Proteinosis	Mild
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Moderate
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal
	Respirat Epith	Hyperplasia	Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 628

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** 100 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60298

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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	Glands, Olfactory Epi	Hyperplasia	Mild
		Inflammation	Suppurative, Mild
* Pituitary Gland	Pars Distalis	Adenoma	
* Preputial Gland		Inflammation	Minimal
* Prostate		Inflammation	Minimal
* Thymus		Atrophy	Mild

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 629

TRT#: 7

SEX: Male

DAY ON TEST: 540

DOSE: 100 mg/m3

DISP: Moribund Sacrifice

HISTO: 60299

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Harderian Gland	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Kidney	* Liver
* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland
Peripheral Nerve	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	Spinal Cord	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Trachea	* Urinary Bladder

MISSING

\* Mammary Gland

OBSERVATIONS

* Eye	Retina	Atrophy	Mild
* Heart		Cardiomyopathy	Minimal
* Intestine Large, Cecum	Lymphoid Tiss	Hyperplasia	Minimal
		Inflammation	Minimal
	[ Hyperplasia TGLs = 8-16 ]		
* Islets, Pancreatic		Adenoma	
	[ Adenoma TGLs = 7-7 ]		
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
	Epiglottis	Metaplasia	Squamous, Mild
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Mild
	Alveolar Epith	Hyperplasia	Marked
	BALT	Hyperplasia	Lymphohistiocy, Minimal
		Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Chronic Active, Moderate
	Alveolus	Proteinosis	Moderate
	[ Infiltration Cellular TGLs = 1,2-4+5+15 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Mild
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Mild

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
Test Type: CHRONIC  
Route: RESPIRATORY EXPOSURE WHOLE BODY  
Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
Time Report Requested: 09:56:24  
First Dose M/F: 07/20/09 / 07/20/09  
Lab: BNW

ANIMAL ID: 629

TRT#: 7

SEX: Male

DAY ON TEST: 540

DOSE: 100 mg/m3

DISP: Moribund Sacrifice

HISTO: 60299

**ORGAN AND ACCOUNTABLE SITE STATUS**

* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Adenoma	
	[ Adenoma TGLs = 3-10 ]		
Skeletal Muscle		Hemangiosarcoma	
	[ Hemangiosarcoma TGLs = 4-15 ]		
* Skin		Inflammation	Mild
	[ Inflammation TGLs = 5,6-16+17 ]		
* Thymus		Atrophy	Mild
* Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH - Skin Inflammation

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 630

TRT#: 7

SEX: Male

DAY ON TEST: 731

DOSE: 100 mg/m3

DISP: Terminal Sacrifice

HISTO: 60300

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex           | * Adrenal Medulla         | Blood Vessel                | * Bone                   |
| * Bone Marrow              | * Brain                   | * Epididymis                | * Esophagus              |
| * Eye                      | * Harderian Gland         | * Heart                     | * Intestine Large, Cecum |
| * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic      | * Liver                     | * Lymph Node, Mandibular |
| * Lymph Node, Mesenteric   | * Pancreas                | * Parathyroid Gland         | * Pituitary Gland        |
| * Preputial Gland          | * Prostate                | * Salivary Glands           | * Seminal Vesicle        |
| * Skin                     | * Spleen                  | * Stomach, Forestomach      | * Stomach, Glandular     |
| * Testes                   | * Trachea                 | * Urinary Bladder           |                          |

MISSING

- \* Mammary Gland

OBSERVATIONS

- |                           |  |                               |                          |
|---------------------------|--|-------------------------------|--------------------------|
| * Kidney                  |  | Metaplasia                    | Lipocyte, Minimal        |
|                           |  | Nephropathy                   | Minimal                  |
| * Larynx                  | Epiglottis                             | Hyperplasia                   | Squamous, Moderate       |
|                           |  | Infiltration Cellular         | Mixed Cell, Minimal      |
|                           | Epiglottis                             | Metaplasia                    | Squamous, Moderate       |
| * Lung                    |  | Fibrosis                      | Minimal                  |
|                           | Alv/Bron Epith                         | Hyperplasia                   | Minimal                  |
|                           | Alveolar Epith                         | Hyperplasia                   | Mild                     |
|                           |  | Infiltration Cellular         | Histiocyte, Mild         |
|                           |  | Inflammation                  | Chronic Active, Moderate |
|                           | Alveolus                               | Proteinosis                   | Minimal                  |
|                           | [ Infiltration Cellular TGLs = 1-4+5 ] |                               |                          |
| * Lymph Node, Bronchial   |  | Hyperplasia                   | Lymphohistiocy, Minimal  |
| * Lymph Node, Mediastinal |  | Hyperplasia                   | Lymphohistiocy, Mild     |
| * Nose                    | Olfactory Epi                          | Accumulation, Hyaline Droplet | Marked                   |
|                           | Respirat Epith                         | Accumulation, Hyaline Droplet | Mild                     |
|                           | Goblet Cell                            | Hyperplasia                   | Minimal                  |
|                           | Respirat Epith                         | Hyperplasia                   | Minimal                  |

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 630

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 731

**DOSE:** 100 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60300

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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	Glands, Olfactory Epi	Hyperplasia Inflammation	Mild Suppurative, Minimal
* Thymus		Atrophy	Minimal
* Thyroid Gland	C Cell	Hyperplasia	Minimal

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**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 631

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** 100 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60301

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Thymus	* Trachea
* Urinary Bladder			

**MISSING**

\* Mammary Gland

**OBSERVATIONS**

* Kidney	Pelvis	Inflammation Nephropathy	Minimal Mild
* Larynx	Epiglottis	Hyperplasia Infiltration Cellular	Squamous, Moderate Mixed Cell, Minimal
* Liver	Epiglottis	Metaplasia Basophilic Focus Mixed Cell Focus	Squamous, Mild
	[ Mixed Cell Focus TGLs = 2-6 ]		
* Lung	Alv/Bron Epith Alveolar Epith BALT	Fibrosis Hyperplasia Hyperplasia Hyperplasia Infiltration Cellular Inflammation Proteinosis	Minimal Mild Minimal Lymphohistiocy, Minimal Histiocyte, Mild Chronic Active, Moderate Mild
	Alveolus [ Infiltration Cellular TGLs = 1-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Mild
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Moderate

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 631

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** 100 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60301

**ORGAN AND ACCOUNTABLE SITE STATUS**

* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Respirat Epith	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild
	Transit Epithe	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Mild
* Spleen		Hematopoietic Cell Proliferation	Minimal
* Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Minimal



Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 632

TRT#: 7

SEX: Male

DAY ON TEST: 581

DOSE: 100 mg/m3

DISP: Natural Death

HISTO: 60302

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Epididymis	* Esophagus	* Eye	* Harderian Gland
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Pancreas
* Parathyroid Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thyroid Gland	* Trachea	* Urinary Bladder	

**MISSING**

* Lymph Node, Bronchial	* Mammary Gland
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**OBSERVATIONS**

* Adrenal Cortex		Vacuolization Cytoplasmic	Minimal
* Brain		Compression	Moderate
* Heart		Cardiomyopathy	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Moderate
	Epiglottis	Metaplasia	Squamous, Moderate
* Liver		Fatty Change	Mild
* Lung		Fibrosis	Minimal
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Moderate
	Alveolus	Proteinosis	Minimal
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Mild
	Glands, Olfactory Epi	Hyperplasia	Mild
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Adenoma	
	[ Adenoma TGLs = 2-10 ]		
* Preputial Gland		Inflammation	Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 632

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 581

**DOSE:** 100 mg/m3

**DISP:** Natural Death

**HISTO:** 60302

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Inflammation TGLs = 3-9 ]

\* Testes

Germinal Epith

Atrophy

Mild

\* Thymus

Atrophy

Mild

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PRIMARY CAUSE OF DEATH

- Pituitary Gland Pars Distalis Adenoma

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 633

TRT#: 7

SEX: Male

DAY ON TEST: 716

DOSE: 100 mg/m3

DISP: Moribund Sacrifice

HISTO: 60303

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * Adrenal Medulla           | Blood Vessel             | * Bone                     | * Bone Marrow             |
| * Brain                     | * Epididymis             | * Esophagus                | * Eye                     |
| * Harderian Gland           | * Intestine Large, Cecum | * Intestine Large, Colon   | * Intestine Large, Rectum |
| * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic      |
| * Lymph Node, Mandibular    | * Lymph Node, Mesenteric | * Pancreas                 | * Parathyroid Gland       |
| * Pituitary Gland           | * Preputial Gland        | * Prostate                 | * Salivary Glands         |
| * Seminal Vesicle           | * Skin                   | * Spleen                   | * Stomach, Forestomach    |
| * Stomach, Glandular        | * Testes                 | * Thymus                   | * Trachea                 |
| * Urinary Bladder           |                          |                            |                           |

MISSING

- \* Mammary Gland

OBSERVATIONS

- |                  |                |                           |                          |
|------------------|----------------|---------------------------|--------------------------|
| * Adrenal Cortex |                | Hypertrophy               | Minimal                  |
|                  |                | Vacuolization Cytoplasmic | Minimal                  |
| * Heart          |                | Cardiomyopathy            | Mild                     |
| * Kidney         |                | Hydronephrosis            | Mild                     |
|                  |                | Nephropathy               | Minimal                  |
| * Larynx         | Epiglottis     | Hyperplasia               | Squamous, Mild           |
|                  |                | Infiltration Cellular     | Mixed Cell, Minimal      |
|                  | Epiglottis     | Metaplasia                | Squamous, Mild           |
| * Liver          |                | Basophilic Focus          |                          |
|                  |                | Clear Cell Focus          |                          |
|                  |                | Inflammation              | Granulomatous, Minimal   |
| * Lung           |                | Fibrosis                  | Minimal                  |
|                  | Alv/Bron Epith | Hyperplasia               | Mild                     |
|                  | Alveolar Epith | Hyperplasia               | Minimal                  |
|                  |                | Infiltration Cellular     | Histiocyte, Minimal      |
|                  |                | Inflammation              | Chronic Active, Moderate |
|                  | Alveolus       | Proteinosis               | Mild                     |

[ Infiltration Cellular TGLs = 3-4+5 ]

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 633

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 716

**DOSE:** 100 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60303

**ORGAN AND ACCOUNTABLE SITE STATUS**

* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Minimal
* Lymph Node, Mediastinal		Congestion	Mild
[ Congestion TGLs = 4-3 ]			
Mesentery	Fat	Necrosis	Minimal
[ Necrosis TGLs = 2-15 ]			
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Mild
	Glands, Olfactory Epi	Hyperplasia	Mild
	Respirat Epith	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Thyroid Gland	C Cell	Hyperplasia	Minimal

**PRIMARY CAUSE OF DEATH** - UNCERTAIN

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 634

TRT#: 7

SEX: Male

DAY ON TEST: 730

DOSE: 100 mg/m3

DISP: Terminal Sacrifice

HISTO: 60304

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Trachea	* Urinary Bladder	

MISSING

\* Mammary Gland

OBSERVATIONS

* Adrenal Cortex		Hypertrophy	Minimal
		Vacuolization Cytoplasmic	Minimal
* Heart		Cardiomyopathy	Minimal
* Kidney		Nephropathy	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
	Epiglottis	Metaplasia	Squamous, Mild
* Liver		Clear Cell Focus	
	Bile Duct	Cyst	Mild
	[ Cyst TGLs = 3-6 ]		
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Mild
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Chronic Active, Moderate
	Alveolus	Proteinosis	Moderate
	[ Infiltration Cellular TGLs = 2-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Mild
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Mild
Mesentery	Fat	Necrosis	Moderate

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 634

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** 100 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60304

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Necrosis TGLs = 1-15 ]

* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild
		Inflammation	Suppurative, Mild
* Preputial Gland		Inflammation	Minimal
* Thymus		Atrophy	Mild
* Thyroid Gland	Follicle	Hyperplasia	Minimal
	C Cell	Hyperplasia	Mild

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 635

TRT#: 7

SEX: Male

DAY ON TEST: 731

DOSE: 100 mg/m3

DISP: Terminal Sacrifice

HISTO: 60305

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Pancreas
* Parathyroid Gland	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Trachea	* Urinary Bladder

MISSING

\* Mammary Gland

OBSERVATIONS

* Adrenal Cortex		Angiectasis	Minimal
* Heart		Cardiomyopathy	Minimal
* Kidney		Nephropathy	Mild
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
	Epiglottis	Infiltration Cellular	Mixed Cell, Minimal
		Metaplasia	Squamous, Moderate
* Liver		Angiectasis	Minimal
		Eosinophilic Focus	
	[ Eosinophilic Focus TGLs = 3-15 ]		
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Mild
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Moderate
	Alveolus	Proteinosis	Moderate
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

---

**ANIMAL ID:** 635

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 731

**DOSE:** 100 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60305

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

* Pituitary Gland	Glands, Olfactory Epi Pars Distalis	Hyperplasia Adenoma	Mild
* Testes		Edema	Marked
[ Edema TGLs = 1-9+17 ]			
* Thyroid Gland	C Cell	Hyperplasia	Mild

---



Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 636

TRT#: 7

SEX: Male

DAY ON TEST: 729

DOSE: 100 mg/m3

DISP: Terminal Sacrifice

HISTO: 60306

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Testes	* Thymus
* Trachea	* Urinary Bladder		

MISSING

\* Mammary Gland

OBSERVATIONS

* Adrenal Cortex		Hypertrophy	Minimal
		Vacuolization Cytoplasmic	Minimal
* Kidney		Nephropathy	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Moderate
	Epiglottis	Metaplasia	Squamous, Mild
* Liver		Clear Cell Focus	
* Lung		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Mild
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Moderate
	Alveolus	Proteinosis	Mild
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Mild
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Moderate
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 636

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** 100 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60306

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* Thyroid Gland

C Cell

Inflammation

Suppurative, Minimal

Adenoma

C Cell

Hyperplasia

Minimal

---

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 637

TRT#: 7

SEX: Male

DAY ON TEST: 626

DOSE: 100 mg/m3

DISP: Moribund Sacrifice

HISTO: 60307

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Epididymis	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Mammary Gland	* Pancreas
* Parathyroid Gland	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Trachea	* Urinary Bladder	

**OBSERVATIONS**

* Adrenal Cortex		Hypertrophy	Minimal
		Vacuolization Cytoplasmic	Minimal
* Brain		Compression	Minimal
* Kidney		Nephropathy	Mild
* Larynx	Epiglottis	Hyperplasia	Squamous, Moderate
	Epiglottis	Infiltration Cellular	Mixed Cell, Minimal
		Metaplasia	Squamous, Moderate
* Liver		Clear Cell Focus	
	[ Clear Cell Focus TGLs = 4-15 ]		
* Lung		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Moderate
		Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Chronic Active, Moderate
	Alveolus	Proteinosis	Moderate
	[ Infiltration Cellular TGLs = 2-4+5 ]		
Lymph Node	Iliac	Hyperplasia	Plasma Cell, Marked
	[ Hyperplasia TGLs = 5-15 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Mild
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Moderate
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 637

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 626

**DOSE:** 100 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60307

**ORGAN AND ACCOUNTABLE SITE STATUS**

	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Mild
	Glands, Olfactory Epi	Hyperplasia	Minimal
	Respirat Epith	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Adenoma	
	[ Adenoma TGLs = 3-10 ]		
* Skin		Ulcer	Mild
	[ Ulcer TGLs = 1-16 ]		
* Thymus		Atrophy	Mild
* Thyroid Gland	C Cell	Hyperplasia	Minimal

PRIMARY CAUSE OF DEATH - Skin Ulcer

CONTRIBUTORY CAUSE OF DEATH - Pituitary Gland Pars Distalis Adenoma

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 638

TRT#: 7

SEX: Male

DAY ON TEST: 731

DOSE: 100 mg/m3

DISP: Terminal Sacrifice

HISTO: 60308

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Pancreas
* Parathyroid Gland	* Salivary Glands	* Seminal Vesicle	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Thymus	* Trachea	* Urinary Bladder	

MISSING

\* Mammary Gland

OBSERVATIONS

* Harderian Gland		Hyperplasia	Minimal
* Kidney		Hydronephrosis	Mild
		Nephropathy	Minimal
	[ Hydronephrosis TGLs = 3-7 ]		
* Larynx	Epiglottis	Hyperplasia	Squamous, Moderate
	Epiglottis	Metaplasia	Squamous, Moderate
* Liver		Clear Cell Focus	
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Mild
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Chronic Active, Moderate
	Alveolar Epith	Metaplasia	Squamous, Minimal
	Alveolus	Proteinosis	Mild
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Mild
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 638

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 731

**DOSE:** 100 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60308

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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	Goblet Cell	Hyperplasia	Minimal
	Respirat Epith	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
* Preputial Gland		Inflammation	Minimal
* Prostate		Inflammation	Minimal
	[ Inflammation TGLs = 2-15 ]		
* Thyroid Gland	C Cell	Hyperplasia	Moderate

---

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 639

TRT#: 7

SEX: Male

DAY ON TEST: 409

DOSE: 100 mg/m3

DISP: Moribund Sacrifice

HISTO: 60309

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Liver	* Lymph Node, Bronchial
* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Trachea	* Urinary Bladder	

MISSING

\* Mammary Gland

OBSERVATIONS

* Brain		Compression	Moderate
		Hydrocephalus	Mild
* Larynx	Epiglottis	Hyperplasia	Squamous, Moderate
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Moderate
* Lung		Fibrosis	Minimal
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Chronic Active, Moderate
	Alveolus	Proteinosis	Mild
	[ Infiltration Cellular TGLs = 1-4+5+15 ]		
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Moderate
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Adenoma	
	[ Adenoma TGLs = 2-10 ]		

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 639

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 409

**DOSE:** 100 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60309

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

\* Thymus

Atrophy

Mild

\* Thyroid Gland

C Cell

Adenoma

C Cell

Hyperplasia

Mild

---

PRIMARY CAUSE OF DEATH

- Pituitary Gland Pars Distalis Adenoma

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 640

TRT#: 7

SEX: Male

DAY ON TEST: 729

DOSE: 100 mg/m3

DISP: Terminal Sacrifice

HISTO: 60310

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                            |                           |                             |
|---------------------------|----------------------------|---------------------------|-----------------------------|
| * Adrenal Medulla         | Blood Vessel               | * Bone Marrow             | * Brain                     |
| * Esophagus               | * Eye                      | * Harderian Gland         | * Heart                     |
| * Intestine Large, Cecum  | * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum |
| * Intestine Small, Ileum  | * Intestine Small, Jejunum | * Islets, Pancreatic      | * Lymph Node, Mandibular    |
| * Lymph Node, Mediastinal | * Lymph Node, Mesenteric   | * Pancreas                | * Parathyroid Gland         |
| * Pituitary Gland         | * Preputial Gland          | * Prostate                | * Salivary Glands           |
| * Seminal Vesicle         | * Stomach, Forestomach     | * Stomach, Glandular      | * Trachea                   |
| * Urinary Bladder         |                            |                           |                             |

MISSING

- \* Mammary Gland

OBSERVATIONS

- |                         |  |                               |                          |
|-------------------------|--|-------------------------------|--------------------------|
| * Adrenal Cortex        |  | Vacuolization Cytoplasmic     | Minimal                  |
| * Bone                  |  | Hyperostosis                  | Minimal                  |
|                         | [ Hyperostosis TGLs = 3-15 ]           |                               |                          |
| * Epididymis            |  | Mesothelioma Nos              |                          |
| * Kidney                |  | Nephropathy                   | Minimal                  |
| * Larynx                | Epiglottis                             | Hyperplasia                   | Squamous, Mild           |
|                         |  | Infiltration Cellular         | Mixed Cell, Minimal      |
|                         | Epiglottis                             | Metaplasia                    | Squamous, Mild           |
| * Liver                 |  | Basophilic Focus              |                          |
|                         |  | Clear Cell Focus              |                          |
| * Lung                  |  | Fibrosis                      | Minimal                  |
|                         | Alv/Bron Epith                         | Hyperplasia                   | Mild                     |
|                         | Alveolar Epith                         | Hyperplasia                   | Mild                     |
|                         |  | Infiltration Cellular         | Histiocyte, Mild         |
|                         |  | Inflammation                  | Chronic Active, Moderate |
|                         | Alveolus                               | Proteinosis                   | Minimal                  |
|                         | [ Infiltration Cellular TGLs = 4-4+5 ] |                               |                          |
| * Lymph Node, Bronchial |  | Hyperplasia                   | Lymphohistiocy, Mild     |
| * Nose                  | Olfactory Epi                          | Accumulation, Hyaline Droplet | Moderate                 |

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 640

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** 100 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60310

**ORGAN AND ACCOUNTABLE SITE STATUS**

	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild
	Transit Epithe	Hyperplasia	Mild
		Inflammation	Suppurative, Minimal
	Transit Epithe	Metaplasia	Squamous, Minimal
* Skin		Ulcer	Mild
	[ Ulcer TGLs = 1,2-16+17 ]		
* Spleen		Hematopoietic Cell Proliferation	Minimal
* Testes	Germinal Epith	Atrophy	Moderate
		Mesothelioma Nos	
* Thymus		Atrophy	Mild
* Thyroid Gland	C Cell	Adenoma	

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 641

TRT#: 7

SEX: Male

DAY ON TEST: 459

DOSE: 100 mg/m3

DISP: Moribund Sacrifice

HISTO: 60311

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Liver	* Lymph Node, Mandibular
* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Stomach, Forestomach	* Stomach, Glandular	* Trachea	* Urinary Bladder

MISSING

\* Mammary Gland

OBSERVATIONS

* Bone Marrow		Histiocytic Sarcoma	
* Larynx	Epiglottis	Hyperplasia	Squamous, Moderate
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Moderate
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Chronic Active, Moderate
	Alveolus	Proteinosis	Mild
	[ Infiltration Cellular TGLs = 3-4+5+15 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Mild
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Skin	Subcut Tiss	Histiocytic Sarcoma	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 641

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 459

**DOSE:** 100 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60311

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Histiocytic Sarcoma TGLs = 1-17 ]

\* Spleen

Hematopoietic Cell Proliferation

Minimal

\* Testes

Germinal Epith

Atrophy

Mild

[ Atrophy TGLs = 2-9 ]

\* Thymus

Atrophy

Mild

\* Thyroid Gland

C Cell

Hyperplasia

Minimal

---

**PRIMARY CAUSE OF DEATH** - Skin Subcut Tiss Histiocytic Sarcoma

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 642

TRT#: 7

SEX: Male

DAY ON TEST: 568

DOSE: 100 mg/m3

DISP: Moribund Sacrifice

HISTO: 60312

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Liver	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Thymus	* Trachea
* Urinary Bladder			

MISSING

\* Mammary Gland

OBSERVATIONS

* Adrenal Cortex		Hypertrophy	Mild
		Vacuolization Cytoplasmic	Minimal
* Kidney	Pelvis	Inflammation	Minimal
		Nephropathy	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Moderate
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Moderate
* Lung		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Moderate
	Alveolar Epith	Hyperplasia	Moderate
		Infiltration Cellular	Histiocyte, Moderate
	Alveolus	Proteinosis	Moderate
	[ Infiltration Cellular TGLs = 1-4+5+15+16 ]		
Lymph Node	Lumbar	Hyperplasia	Plasma Cell, Mild
	[ Hyperplasia TGLs = 6-20 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Minimal
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Moderate
Mesentery	Fat	Necrosis	Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 642

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 568

**DOSE:** 100 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60312

**ORGAN AND ACCOUNTABLE SITE STATUS**

[ Necrosis TGLs = 2,3-18+19 ]

\* Nose

Olfactory Epi

Accumulation, Hyaline Droplet

Marked

Respirat Epith

Accumulation, Hyaline Droplet

Mild

Goblet Cell

Hyperplasia

Minimal

Glands, Olfactory Epi

Hyperplasia

Moderate

Respirat Epith

Hyperplasia

Minimal

Inflammation

Suppurative, Minimal

\* Skin

Ulcer

Mild

[ Ulcer TGLs = 4,5-18+20 ]

\* Spleen

Hematopoietic Cell Proliferation

Mild

\* Thyroid Gland

C Cell

Hyperplasia

Mild

PRIMARY CAUSE OF DEATH

- Skin Ulcer

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 643

TRT#: 7

SEX: Male

DAY ON TEST: 730

DOSE: 100 mg/m3

DISP: Terminal Sacrifice

HISTO: 60313

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Mammary Gland	* Pancreas	* Parathyroid Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Testes
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

MISSING

Mesentery

OBSERVATIONS

* Heart		Cardiomyopathy	Minimal
* Kidney		Nephropathy	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
	Epiglottis	Metaplasia	Squamous, Moderate
* Liver		Basophilic Focus	
* Lung		Fibrosis	Mild
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Chronic Active, Moderate
	Alveolar Epith	Metaplasia	Squamous, Moderate
	Alveolus	Proteinosis	Minimal
	[ Infiltration Cellular TGLs = 2-4+5 ]		
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild
		Inflammation	Suppurative, Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 643

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** 100 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60313

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

\* Pituitary Gland

Pars Distalis

Adenoma

[ Adenoma TGLs = 1-10 ]

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 644

TRT#: 7

SEX: Male

DAY ON TEST: 627

DOSE: 100 mg/m3

DISP: Moribund Sacrifice

HISTO: 60314

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex          | * Adrenal Medulla           | Blood Vessel             | * Bone                     |
| * Bone Marrow             | * Epididymis                | * Esophagus              | * Eye                      |
| * Harderian Gland         | * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic      | * Lymph Node, Mandibular    | * Lymph Node, Mesenteric | * Pancreas                 |
| * Parathyroid Gland       | * Preputial Gland           | * Salivary Glands        | * Seminal Vesicle          |
| * Skin                    | * Spleen                    | * Stomach, Forestomach   | * Stomach, Glandular       |
| * Trachea                 | * Urinary Bladder           |                          |                            |

MISSING

- \* Mammary Gland

OBSERVATIONS

- |                           |  |                               |                          |
|---------------------------|--|-------------------------------|--------------------------|
| * Brain                   |  | Compression                   | Marked                   |
| * Kidney                  |  | Nephropathy                   | Mild                     |
| * Larynx                  | Epiglottis                             | Hyperplasia                   | Squamous, Mild           |
|                           | Epiglottis                             | Metaplasia                    | Squamous, Moderate       |
| * Liver                   |  | Angiectasis                   | Minimal                  |
|                           |  | Clear Cell Focus              |                          |
|                           | [ Angiectasis TGLs = 5-15 ]            |                               |                          |
| * Lung                    |  | Fibrosis                      | Minimal                  |
|                           | Alveolar Epith                         | Hyperplasia                   | Mild                     |
|                           |  | Infiltration Cellular         | Histiocyte, Moderate     |
|                           |  | Inflammation                  | Chronic Active, Moderate |
|                           | [ Infiltration Cellular TGLs = 2-4+5 ] |                               |                          |
| * Lymph Node, Bronchial   |  | Hyperplasia                   | Lymphohistiocy, Mild     |
| * Lymph Node, Mediastinal |  | Hyperplasia                   | Lymphohistiocy, Mild     |
| * Nose                    | Olfactory Epi                          | Accumulation, Hyaline Droplet | Moderate                 |
|                           | Respirat Epith                         | Accumulation, Hyaline Droplet | Minimal                  |
|                           | Goblet Cell                            | Hyperplasia                   | Minimal                  |
|                           | Glands, Olfactory Epi                  | Hyperplasia                   | Mild                     |
|                           |  | Inflammation                  | Suppurative, Minimal     |

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 644

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 627

**DOSE:** 100 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60314

**ORGAN AND ACCOUNTABLE SITE STATUS**

* Pituitary Gland [ Adenoma TGLs = 3-10 ]	Pars Distalis	Adenoma	
* Prostate		Inflammation	Minimal
* Testes [ Atrophy TGLs = 4-9 ]	Germinal Epith	Atrophy	Mild
* Thymus		Atrophy	Marked
* Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Mild

**PRIMARY CAUSE OF DEATH** - Pituitary Gland Pars Distalis Adenoma

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 645

TRT#: 7

SEX: Male

DAY ON TEST: 729

DOSE: 100 mg/m3

DISP: Terminal Sacrifice

HISTO: 60315

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex          | * Adrenal Medulla           | Blood Vessel             | * Bone                     |
| * Bone Marrow             | * Brain                     | * Epididymis             | * Esophagus                |
| * Eye                     | * Harderian Gland           | * Intestine Large, Cecum | * Intestine Large, Colon   |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic      | * Lymph Node, Mandibular    | * Lymph Node, Mesenteric | * Pancreas                 |
| * Parathyroid Gland       | * Pituitary Gland           | * Preputial Gland        | * Prostate                 |
| * Salivary Glands         | * Seminal Vesicle           | * Skin                   | * Spleen                   |
| * Stomach, Forestomach    | * Stomach, Glandular        | * Testes                 | * Trachea                  |
| * Urinary Bladder         |                             |                          |                            |

**MISSING**

- |                         |                 |
|-------------------------|-----------------|
| * Lymph Node, Bronchial | * Mammary Gland |
|-------------------------|-----------------|

**OBSERVATIONS**

- |                           |  |                               |                          |
|---------------------------|--|-------------------------------|--------------------------|
| * Heart                   |  | Cardiomyopathy                | Minimal                  |
| * Kidney                  |  | Nephropathy                   | Mild                     |
| * Larynx                  | Epiglottis                             | Hyperplasia                   | Squamous, Mild           |
|                           | Epiglottis                             | Metaplasia                    | Squamous, Mild           |
| * Liver                   |  | Basophilic Focus              |                          |
|                           |  | Clear Cell Focus              |                          |
| * Lung                    |  | Fibrosis                      | Mild                     |
|                           | Alv/Bron Epith                         | Hyperplasia                   | Mild                     |
|                           | Alveolar Epith                         | Hyperplasia                   | Mild                     |
|                           |  | Infiltration Cellular         | Histiocyte, Moderate     |
|                           |  | Inflammation                  | Chronic Active, Moderate |
|                           | Alveolus                               | Proteinosis                   | Mild                     |
|                           | [ Infiltration Cellular TGLs = 1-4+5 ] |                               |                          |
| * Lymph Node, Mediastinal |  | Hyperplasia                   | Lymphohistiocy, Moderate |
| * Nose                    | Olfactory Epi                          | Accumulation, Hyaline Droplet | Moderate                 |
|                           | Respirat Epith                         | Accumulation, Hyaline Droplet | Minimal                  |
|                           | Goblet Cell                            | Hyperplasia                   | Minimal                  |
|                           | Glands, Olfactory Epi                  | Hyperplasia                   | Mild                     |

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 645

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** 100 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60315

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Thymus		Inflammation	Suppurative, Minimal
* Thyroid Gland	C Cell	Thymoma Benign Hyperplasia	Minimal

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**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 646

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 459

**DOSE:** 100 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60316

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Esophagus	* Intestine Large, Rectum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Salivary Glands	* Seminal Vesicle	* Urinary Bladder

**MISSING**

\* Mammary Gland

**OBSERVATIONS**

* Bone Marrow		Lymphoma Malignant	
* Epididymis		Lymphoma Malignant	
* Eye		Lymphoma Malignant	
* Harderian Gland		Lymphoma Malignant	
* Heart		Lymphoma Malignant	
* Intestine Large, Cecum		Lymphoma Malignant	
* Intestine Large, Colon		Lymphoma Malignant	
* Intestine Small, Duodenum		Lymphoma Malignant	
* Kidney		Lymphoma Malignant	
	[ Lymphoma Malignant TGLs = 9-7 ]		
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Lymphoma Malignant	
		Metaplasia	Squamous, Moderate
* Liver		Lymphoma Malignant	
	[ Lymphoma Malignant TGLs = 6-6 ]		
* Lung	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Moderate
	Alveolus	Lymphoma Malignant	
	[ Infiltration Cellular TGLs = 4-4+5+15+16 ]	Proteinosis	Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 646

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 459

**DOSE:** 100 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60316

**ORGAN AND ACCOUNTABLE SITE STATUS**

Lymph Node	Pancreatic	Lymphoma Malignant	
	Renal	Lymphoma Malignant	
[ Lymphoma Malignant	TGLs = 8-17 ]		
[ Lymphoma Malignant	TGLs = 10-18 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Minimal
		Lymphoma Malignant	
* Lymph Node, Mandibular		Lymphoma Malignant	
* Lymph Node, Mediastinal		Lymphoma Malignant	
* Lymph Node, Mesenteric		Lymphoma Malignant	
[ Lymphoma Malignant	TGLs = 11-8 ]		
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Hyperplasia	Minimal
		Lymphoma Malignant	
* Preputial Gland		Lymphoma Malignant	
* Prostate		Lymphoma Malignant	
* Skin		Inflammation	Mild
[ Inflammation	TGLs = 1-19 ]		
* Spleen		Lymphoma Malignant	
[ Lymphoma Malignant	TGLs = 7-17 ]		
* Stomach, Forestomach		Lymphoma Malignant	
* Stomach, Glandular		Lymphoma Malignant	
		Mineralization	Mild
* Testes	Germinal Epith	Atrophy	Mild
		Hemangiosarcoma	
[ Hemangiosarcoma	TGLs = 5-9 ]		
* Thymus		Atrophy	Mild
		Lymphoma Malignant	
* Thyroid Gland	C Cell	Hyperplasia	Minimal
		Lymphoma Malignant	
* Trachea		Lymphoma Malignant	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 646

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 459

**DOSE:** 100 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60316

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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PRIMARY CAUSE OF DEATH

- Skin Inflammation

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 647

TRT#: 7

SEX: Male

DAY ON TEST: 536

DOSE: 100 mg/m3

DISP: Moribund Sacrifice

HISTO: 60317

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Liver	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	* Preputial Gland	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Trachea	* Urinary Bladder

**MISSING**

* Lymph Node, Mediastinal	* Mammary Gland
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**OBSERVATIONS**

* Brain		Compression	Marked
		Hydrocephalus	Mild
* Kidney	Pelvis	Inflammation	Mild
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
	Epiglottis	Metaplasia	Squamous, Moderate
* Lung		Fibrosis	Mild
	Alveolar Epith	Hyperplasia	Moderate
	Alv/Bron Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Chronic Active, Moderate
	Alveolus	Proteinosis	Mild
[ Infiltration Cellular	TGLs = 3-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild
		Inflammation	Suppurative, Minimal
		Squamous Cell Papilloma	

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 647

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 536

**DOSE:** 100 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60317

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Pituitary Gland	Pars Distalis	Adenoma	
[ Adenoma TGLs = 4-10 ]			
* Prostate		Inflammation	Minimal
* Thymus		Atrophy	Mild
* Thyroid Gland	C Cell	Hyperplasia	Minimal

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**PRIMARY CAUSE OF DEATH** - Pituitary Gland Pars Distalis Adenoma

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**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 648

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** 100 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60318

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Thymus	* Trachea
* Urinary Bladder			

**MISSING**

\* Mammary Gland

**INSUFFICIENT TISSUE**

\* Lymph Node, Bronchial

**OBSERVATIONS**

* Kidney		Nephropathy	Mild
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Mild
* Liver		Basophilic Focus	
	[ Basophilic Focus TGLs = 3-7 ]		
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Chronic Active, Moderate
	Alveolus	Proteinosis	Mild
	[ Infiltration Cellular TGLs = 2-4+5 ]		
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Moderate
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 648

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** 100 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60318

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild
	Transit Epithe	Hyperplasia	Mild
		Inflammation	Suppurative, Minimal
	Transit Epithe	Metaplasia	Squamous, Minimal
		Polyp	Multiple
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
* Preputial Gland		Inflammation	Mild
* Thyroid Gland	Follicle	Adenoma	
	[ Adenoma TGLs = 1-3 ]		

---

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 649

TRT#: 7

SEX: Male

DAY ON TEST: 730

DOSE: 100 mg/m3

DISP: Terminal Sacrifice

HISTO: 60319

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Pancreas
* Parathyroid Gland	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

\* Mammary Gland

OBSERVATIONS

* Adrenal Cortex		Vacuolization Cytoplasmic	Minimal
* Heart		Cardiomyopathy	Mild
* Kidney		Nephropathy	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
	Epiglottis	Infiltration Cellular	Mixed Cell, Minimal
		Metaplasia	Squamous, Mild
* Liver	Bile Duct	Clear Cell Focus	
		Hyperplasia	Minimal
	[ Hyperplasia TGLs = 2-15 ]		
* Lung	Alv/Bron Epith	Fibrosis	Minimal
	Alveolar Epith	Hyperplasia	Mild
		Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Chronic Active, Moderate
	Alveolus	Proteinosis	Mild
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Marked

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 649

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** 100 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60319

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Mild
	Glands, Olfactory Epi	Hyperplasia	Mild
	Transit Epithe	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Mild
* Skin		Ulcer	Mild

[ Ulcer TGLs = 3-16 ]

---

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 650

TRT#: 7

SEX: Male

DAY ON TEST: 367

DOSE: 100 mg/m3

DISP: Moribund Sacrifice

HISTO: 60320

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Liver	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	* Preputial Gland	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Trachea	* Urinary Bladder

MISSING

\* Mammary Gland

OBSERVATIONS

* Brain		Compression	Moderate
		Hydrocephalus	Moderate
* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
	Epiglottis	Metaplasia	Squamous, Moderate
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Moderate
	Alveolus	Proteinosis	Minimal
	[ Infiltration Cellular TGLs = 4-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Mild
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Glands, Olfactory Epi	Hyperplasia	Mild
	Respirat Epith	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 650

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 367

**DOSE:** 100 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60320

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Pituitary Gland	Pars Distalis	Adenoma	
[ Adenoma TGLs = 3-10 ]			
* Prostate		Inflammation	Minimal
* Thymus		Atrophy	Minimal
* Thyroid Gland	C Cell	Hyperplasia	Minimal

---

PRIMARY CAUSE OF DEATH - Pituitary Gland Pars Distalis Adenoma

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**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 101

**TRT#:** 2

**SEX:** Female

**DAY ON TEST:** 732

**DOSE:** Control

**DISP:** Terminal Sacrifice

**HISTO:** 60221

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Larynx	* Liver
* Lung	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Ovary	* Salivary Glands	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Trachea	* Urinary Bladder
* Uterus			

**MISSING**

* Lymph Node, Bronchial	* Parathyroid Gland	* Thymus
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**OBSERVATIONS**

* Adrenal Cortex		Angiectasis	Minimal
* Nose	Transit Epithe	Hyperplasia	Minimal
* Pancreas	Acinus	Atrophy	Minimal
* Pituitary Gland	Pars Distalis	Adenoma	
[ Adenoma TGLs = 2-10 ]			
* Skin		Ulcer	Mild
[ Ulcer TGLs = 1-14 ]			
* Thyroid Gland	Follicle	Hyperplasia	Minimal
	C Cell	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 102

**TRT#:** 2

**SEX:** Female

**DAY ON TEST:** 615

**DOSE:** Control

**DISP:** Moribund Sacrifice

**HISTO:** 60222

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Colon	* Intestine Large, Rectum	* Islets, Pancreatic
* Kidney	* Larynx	* Mammary Gland	* Ovary
* Salivary Glands	* Skin	* Stomach, Forestomach	* Trachea
* Urinary Bladder	* Uterus		

**MISSING**

\* Parathyroid Gland

**OBSERVATIONS**

* Adrenal Cortex		Angiectasis	Mild
		Lymphoma Malignant	
	[ Angiectasis TGLs = 12-7 ]		
* Heart		Lymphoma Malignant	
* Intestine Large, Cecum		Lymphoma Malignant	
* Intestine Small, Duodenum		Lymphoma Malignant	
* Intestine Small, Ileum		Lymphoma Malignant	
* Intestine Small, Jejunum		Lymphoma Malignant	
* Liver		Lymphoma Malignant	
	[ Lymphoma Malignant TGLs = 8-6 ]		
* Lung	Alveolar Epith	Hyperplasia	Mild
		Lymphoma Malignant	
	[ Hyperplasia TGLs = 16-5 ]		
	[ Lymphoma Malignant TGLs = 3-4+5 ]		
Lymph Node	Deep Cervical	Lymphoma Malignant	
	Axillary	Lymphoma Malignant	
	Pancreatic	Lymphoma Malignant	
	Lumbar	Lymphoma Malignant	
	[ Lymphoma Malignant TGLs = 5-15 ]		
	[ Lymphoma Malignant TGLs = 6-16 ]		
	[ Lymphoma Malignant TGLs = 11-17 ]		

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 102

**TRT#:** 2

**SEX:** Female

**DAY ON TEST:** 615

**DOSE:** Control

**DISP:** Moribund Sacrifice

**HISTO:** 60222

**ORGAN AND ACCOUNTABLE SITE STATUS**

[ Lymphoma Malignant	TGLs = 14-18 ]		
* Lymph Node, Bronchial		Lymphoma Malignant	
* Lymph Node, Mandibular		Lymphoma Malignant	
* Lymph Node, Mediastinal		Lymphoma Malignant	
[ Lymphoma Malignant	TGLs = 4-3 ]		
* Lymph Node, Mesenteric		Lymphoma Malignant	
[ Lymphoma Malignant	TGLs = 13,15-7+18 ]		
* Nose	Transit Epithe	Hyperplasia	Minimal
* Pancreas		Lymphoma Malignant	
* Pituitary Gland	Pars Distalis	Adenoma	
[ Adenoma	TGLs = 7-10 ]		
* Spleen		Lymphoma Malignant	
[ Lymphoma Malignant	TGLs = 9,10-14 ]		
* Stomach, Glandular		Lymphoma Malignant	
* Thymus		Lymphoma Malignant	
* Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Minimal

**PRIMARY CAUSE OF DEATH** - Spleen Lymphoma Malignant

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 103

**TRT#:** 2

**SEX:** Female

**DAY ON TEST:** 731

**DOSE:** Control

**DISP:** Terminal Sacrifice

**HISTO:** 60223

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Blood Vessel	* Bone	* Bone Marrow	* Brain
* Esophagus	* Eye	* Harderian Gland	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Larynx
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Nose	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Salivary Glands	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Trachea	* Urinary Bladder	* Uterus

**MISSING**

\* Lymph Node, Bronchial

**OBSERVATIONS**

* Adrenal Cortex		Angiectasis	Minimal
* Adrenal Medulla		Hyperplasia	Minimal
* Clitoral Gland		Inflammation	Minimal
* Heart		Cardiomyopathy	Minimal
* Liver		Basophilic Focus	
		Clear Cell Focus	
* Lung	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Minimal
Mesentery	Fat	Necrosis	Minimal
[ Necrosis TGLs = 2-7 ]			
* Ovary		Cyst	Minimal
[ Cyst TGLs = 1-9 ]			
* Spleen		Hematopoietic Cell Proliferation	Minimal
* Thyroid Gland	C Cell	Hyperplasia	Minimal

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 104

**TRT#:** 2

**SEX:** Female

**DAY ON TEST:** 733

**DOSE:** Control

**DISP:** Terminal Sacrifice

**HISTO:** 60224

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lung	* Lymph Node, Bronchial	* Lymph Node, Mandibular
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Ovary
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Salivary Glands
* Stomach, Forestomach	* Stomach, Glandular	* Trachea	* Urinary Bladder

**OBSERVATIONS**

* Adrenal Cortex		Angiectasis	Minimal
* Heart		Cardiomyopathy	Minimal
* Kidney	Pelvis	Inflammation	Mild
[ Inflammation TGLs = 2-7 ]			
* Liver		Basophilic Focus	
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
* Skin		Ulcer	Mild
[ Ulcer TGLs = 1-14 ]			
* Spleen		Hematopoietic Cell Proliferation	Minimal
* Thymus		Ectopic Thyroid	Minimal
* Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Moderate
* Uterus	Endometrium	Hyperplasia	Cystic, Minimal

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 105

TRT#: 2

SEX: Female

DAY ON TEST: 702

DOSE: Control

DISP: Moribund Sacrifice

HISTO: 60225

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lung	* Lymph Node, Bronchial
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland
Peripheral Nerve	* Salivary Glands	Skeletal Muscle	* Skin
Spinal Cord	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Trachea	* Urinary Bladder		

MISSING

\* Lymph Node, Mandibular

OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Minimal
* Kidney	Pelvis	Inflammation	Mild
* Liver		Mixed Cell Focus	
* Mammary Gland		Carcinoma	
[ Carcinoma TGLs = 1-14 ]			
* Nose	Transit Epithe	Hyperplasia	Minimal
* Ovary		Cyst	Minimal
[ Cyst TGLs = 2-9 ]			
* Pituitary Gland	Pars Distalis	Adenoma	
[ Adenoma TGLs = 3-10 ]			
* Spleen		Hematopoietic Cell Proliferation	Mild
* Thyroid Gland	C Cell	Hyperplasia	Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Minimal

PRIMARY CAUSE OF DEATH - Mammary Gland Carcinoma

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 106

**TRT#:** 2

**SEX:** Female

**DAY ON TEST:** 535

**DOSE:** Control

**DISP:** Moribund Sacrifice

**HISTO:** 60226

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

- |                            |                           |                             |                           |
|----------------------------|---------------------------|-----------------------------|---------------------------|
| * Adrenal Cortex           | * Adrenal Medulla         | Blood Vessel                | * Bone                    |
| * Bone Marrow              | * Brain                   | * Clitoral Gland            | * Esophagus               |
| * Eye                      | * Harderian Gland         | * Heart                     | * Intestine Large, Cecum  |
| * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum  |
| * Intestine Small, Jejunum | * Islets, Pancreatic      | * Kidney                    | * Larynx                  |
| * Liver                    | * Lung                    | * Lymph Node, Bronchial     | * Lymph Node, Mediastinal |
| * Lymph Node, Mesenteric   | * Nose                    | * Ovary                     | * Pancreas                |
| * Parathyroid Gland        | Peripheral Nerve          | * Salivary Glands           | Skeletal Muscle           |
| * Skin                     | Spinal Cord               | * Spleen                    | * Stomach, Forestomach    |
| * Stomach, Glandular       | * Thymus                  | * Trachea                   | * Urinary Bladder         |
| * Uterus                   |                           |                             |                           |

**MISSING**

- \* Lymph Node, Mandibular

**OBSERVATIONS**

- |                               |               |             |         |
|-------------------------------|---------------|-------------|---------|
| * Mammary Gland               |               | Adenoma     |         |
| [ Adenoma TGLs = 1-15+16+17 ] |               |             |         |
| Mesentery                     | Fat           | Necrosis    | Mild    |
| [ Necrosis TGLs = 2-14 ]      |               |             |         |
| * Pituitary Gland             | Pars Distalis | Adenoma     |         |
| [ Adenoma TGLs = 3-10 ]       |               |             |         |
| * Thyroid Gland               | C Cell        | Hyperplasia | Minimal |

**PRIMARY CAUSE OF DEATH** - Mammary Gland Adenoma

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 107

**TRT#:** 2

**SEX:** Female

**DAY ON TEST:** 731

**DOSE:** Control

**DISP:** Terminal Sacrifice

**HISTO:** 60227

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

- |                           |                             |                           |                            |
|---------------------------|-----------------------------|---------------------------|----------------------------|
| * Adrenal Cortex          | * Adrenal Medulla           | Blood Vessel              | * Bone                     |
| * Bone Marrow             | * Brain                     | * Esophagus               | * Eye                      |
| * Harderian Gland         | * Heart                     | * Intestine Large, Cecum  | * Intestine Large, Colon   |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum  | * Intestine Small, Jejunum |
| * Islets, Pancreatic      | * Larynx                    | * Liver                   | * Lung                     |
| * Lymph Node, Bronchial   | * Lymph Node, Mandibular    | * Lymph Node, Mediastinal | * Lymph Node, Mesenteric   |
| * Mammary Gland           | * Nose                      | * Ovary                   | * Pancreas                 |
| * Parathyroid Gland       | * Salivary Glands           | * Skin                    | * Spleen                   |
| * Stomach, Forestomach    | * Stomach, Glandular        | * Thymus                  | * Trachea                  |
| * Urinary Bladder         |                             |                           |                            |

**OBSERVATIONS**

- |                   |                               |               |                 |
|-------------------|-------------------------------|---------------|-----------------|
| * Clitoral Gland  |                               | Inflammation  | Minimal         |
| * Kidney          |                               | Nephropathy   | Minimal         |
| * Pituitary Gland | Pars Distalis                 | Adenoma       |                 |
|                   | Pars Distalis                 | Hyperplasia   | Minimal         |
|                   | [ Adenoma TGLs = 2-10 ]       |               |                 |
| * Thyroid Gland   | C Cell                        | Hyperplasia   | Minimal         |
| * Uterus          | Endometrium                   | Hyperplasia   | Cystic, Minimal |
|                   |                               | Polyp Stromal |                 |
|                   | [ Polyp Stromal TGLs = 1-10 ] |               |                 |

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 108

**TRT#:** 2

**SEX:** Female

**DAY ON TEST:** 731

**DOSE:** Control

**DISP:** Terminal Sacrifice

**HISTO:** 60228

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lung	* Lymph Node, Bronchial
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Ovary	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Salivary Glands	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Trachea	* Urinary Bladder	

**OBSERVATIONS**

* Adrenal Cortex		Angiectasis	Minimal
* Kidney	Pelvis	Inflammation	Mild
* Liver		Basophilic Focus	
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
* Spleen		Hematopoietic Cell Proliferation	Minimal
* Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Minimal
* Uterus		Polyp Stromal	Multiple

[ Polyp Stromal TGLs = 1,2-14+15 ]



**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 109

**TRT#:** 2

**SEX:** Female

**DAY ON TEST:** 731

**DOSE:** Control

**DISP:** Terminal Sacrifice

**HISTO:** 60229

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

- |                            |                           |                             |                           |
|----------------------------|---------------------------|-----------------------------|---------------------------|
| * Adrenal Cortex           | * Adrenal Medulla         | Blood Vessel                | * Bone                    |
| * Bone Marrow              | * Brain                   | * Clitoral Gland            | * Esophagus               |
| * Eye                      | * Harderian Gland         | * Heart                     | * Intestine Large, Cecum  |
| * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum  |
| * Intestine Small, Jejunum | * Islets, Pancreatic      | * Larynx                    | * Liver                   |
| * Lung                     | * Lymph Node, Bronchial   | * Lymph Node, Mandibular    | * Lymph Node, Mediastinal |
| * Lymph Node, Mesenteric   | * Mammary Gland           | * Ovary                     | * Pancreas                |
| * Parathyroid Gland        | * Salivary Glands         | * Skin                      | * Spleen                  |
| * Stomach, Forestomach     | * Stomach, Glandular      | * Trachea                   | * Urinary Bladder         |
| * Uterus                   |                           |                             |                           |

**OBSERVATIONS**

- |                   |                         |                               |          |
|-------------------|-------------------------|-------------------------------|----------|
| * Kidney          | Pelvis                  | Inflammation                  | Minimal  |
|                   |                         | Nephropathy                   | Minimal  |
| * Nose            | Olfactory Epi           | Accumulation, Hyaline Droplet | Minimal  |
| * Pituitary Gland | Pars Distalis           | Adenoma                       |          |
|                   | [ Adenoma TGLs = 1-10 ] |                               |          |
| * Thymus          |                         | Atrophy                       | Minimal  |
| * Thyroid Gland   | C Cell                  | Hyperplasia                   | Moderate |

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 110

**TRT#:** 2

**SEX:** Female

**DAY ON TEST:** 732

**DOSE:** Control

**DISP:** Terminal Sacrifice

**HISTO:** 60230

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Kidney	* Larynx	* Lung	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Nose	* Ovary
* Pancreas	* Parathyroid Gland	* Salivary Glands	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Trachea
* Urinary Bladder	* Uterus		

**MISSING**

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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**OBSERVATIONS**

* Adrenal Cortex		Angiectasis	Minimal
		Vacuolization Cytoplasmic	Minimal
* Eye	Retina	Atrophy	Moderate
* Liver		Basophilic Focus	
* Pituitary Gland	Pars Distalis	Adenoma	
	[ Adenoma TGLs = 1-10 ]		
* Skin		Ulcer	Mild
	[ Ulcer TGLs = 2-14 ]		
* Thyroid Gland	C Cell	Hyperplasia	Minimal

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 111

TRT#: 2

SEX: Female

DAY ON TEST: 733

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 60231

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Mammary Gland	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Trachea
* Urinary Bladder			

OBSERVATIONS

* Adrenal Cortex		Angiectasis	Minimal
* Kidney		Infarct	Minimal
	Pelvis	Inflammation	Minimal
* Liver		Basophilic Focus	
* Lung		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic, Minimal
* Lymph Node, Bronchial		Hyperplasia	Plasma Cell, Mild
* Lymph Node, Mediastinal		Hyperplasia	Plasma Cell, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
* Ovary		Cyst	Mild
	[ Cyst TGLs = 2-9 ]		
* Pancreas		Hyperplasia	Mild
* Parathyroid Gland		Hyperplasia	Mild
* Pituitary Gland	Pars Distalis	Adenoma	
	[ Adenoma TGLs = 1-10 ]		
* Thyroid Gland	C Cell	Hyperplasia	Mild
* Uterus	Endometrium	Hyperplasia	Cystic, Minimal

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 112

TRT#: 2

SEX: Female

DAY ON TEST: 645

DOSE: Control

DISP: Moribund Sacrifice

HISTO: 60232

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Kidney	* Larynx	* Liver	* Lung
* Lymph Node, Mesenteric	* Mammary Gland	* Ovary	* Pancreas
* Pituitary Gland	* Salivary Glands	* Skin	* Stomach, Glandular
* Thymus	* Trachea	* Urinary Bladder	

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Parathyroid Gland
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OBSERVATIONS

* Adrenal Cortex		Hematopoietic Cell Proliferation	Mild
* Clitoral Gland		Inflammation	Minimal
* Lymph Node, Mediastinal		Hyperplasia	Plasma Cell, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
* Spleen		Hematopoietic Cell Proliferation	Mild
[ Hematopoietic Cell Proliferation	TGLs = 4-6 ]		
* Stomach, Forestomach	Epithelium	Hyperplasia	Mild
		Inflammation	Minimal
* Thyroid Gland	C Cell	Hyperplasia	Minimal
* Uterus		Histiocytic Sarcoma	
[ Histiocytic Sarcoma	TGLs = 1,2,3-14+15+16+17+18+19+20 ]		

PRIMARY CAUSE OF DEATH - Uterus Histiocytic Sarcoma

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 113

TRT#: 2

SEX: Female

DAY ON TEST: 534

DOSE: Control

DISP: Moribund Sacrifice

HISTO: 60233

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Clitoral Gland	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Liver	* Lung	* Lymph Node, Bronchial
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Ovary	* Pancreas	* Parathyroid Gland	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Trachea	* Urinary Bladder	* Uterus	

**OBSERVATIONS**

* Adrenal Cortex		Angiectasis	Minimal
		Hypertrophy	Minimal
* Brain		Compression	Marked
* Kidney	Pelvis	Inflammation	Minimal
		Nephropathy	Minimal
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Mild
* Pituitary Gland	Pars Distalis	Adenoma	
	[ Adenoma TGLs = 1-10 ]		
* Thymus		Atrophy	Mild
* Thyroid Gland	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH - Pituitary Gland Pars Distalis Adenoma

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 115

TRT#: 2

SEX: Female

DAY ON TEST: 585

DOSE: Control

DISP: Moribund Sacrifice

HISTO: 60235

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex          | * Adrenal Medulla           | Blood Vessel             | * Bone                     |
| * Bone Marrow             | * Clitoral Gland            | * Esophagus              | * Eye                      |
| * Harderian Gland         | * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic      | * Kidney                    | * Larynx                 | * Lung                     |
| * Lymph Node, Mandibular  | * Lymph Node, Mediastinal   | * Lymph Node, Mesenteric | * Mammary Gland            |
| * Ovary                   | * Pancreas                  | * Parathyroid Gland      | * Salivary Glands          |
| * Skin                    | * Stomach, Forestomach      | * Stomach, Glandular     | * Trachea                  |
| * Urinary Bladder         |                             |                          |                            |

MISSING

- \* Lymph Node, Bronchial

OBSERVATIONS

- |                   |                           |                               |                 |
|-------------------|---------------------------|-------------------------------|-----------------|
| * Brain           |                           | Compression                   | Mild            |
| * Liver           | Sinusoid                  | Dilatation                    | Mild            |
|                   |                           | Eosinophilic Focus            |                 |
|                   | [ Dilatation TGLs = 4-7 ] |                               |                 |
| * Nose            | Olfactory Epi             | Accumulation, Hyaline Droplet | Minimal         |
| * Pituitary Gland | Pars Distalis             | Adenoma                       |                 |
|                   | [ Adenoma TGLs = 3-10 ]   |                               |                 |
| * Spleen          | Lymph Follic              | Atrophy                       | Mild            |
| * Thymus          |                           | Atrophy                       | Mild            |
| * Thyroid Gland   | Follicle                  | Hyperplasia                   | Minimal         |
| * Uterus          | Endometrium               | Hyperplasia                   | Cystic, Minimal |

PRIMARY CAUSE OF DEATH - Pituitary Gland Pars Distalis Adenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 116

TRT#: 2

SEX: Female

DAY ON TEST: 547

DOSE: Control

DISP: Natural Death

HISTO: 60236

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Larynx	* Lymph Node, Bronchial
* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Mammary Gland	* Pancreas
* Parathyroid Gland	* Salivary Glands	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thyroid Gland	* Trachea	* Urinary Bladder

OBSERVATIONS

* Brain		Compression	Minimal
* Liver		Basophilic Focus	
* Lung		Fibrosis	Minimal
		Infiltration Cellular	Histiocyte, Minimal
	[ Infiltration Cellular TGLs = 6-4+5+14 ]		
Lymph Node	Lumbar	Hyperplasia	Plasma Cell, Moderate
	[ Hyperplasia TGLs = 4-7 ]		
* Lymph Node, Mediastinal		Hyperplasia	Plasma Cell, Moderate
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
* Ovary		Cyst	Mild
	[ Cyst TGLs = 1-9 ]		
* Pituitary Gland	Pars Distalis	Adenoma	
	[ Adenoma TGLs = 3-10 ]		
* Spleen		Hematopoietic Cell Proliferation	Minimal
* Thymus		Atrophy	Mild
* Uterus	Endometrium	Hyperplasia	Cystic, Moderate
	[ Hyperplasia TGLs = 2-10 ]		

PRIMARY CAUSE OF DEATH - Uterus Endometrium Hyperplasia  
 CONTRIBUTORY CAUSE OF DEATH - Pituitary Gland Pars Distalis Adenoma

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 117

TRT#: 2

SEX: Female

DAY ON TEST: 618

DOSE: Control

DISP: Moribund Sacrifice

HISTO: 60237

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Clitoral Gland	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Kidney	* Larynx	* Lymph Node, Bronchial	* Lymph Node, Mandibular
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Nose	* Ovary
* Pancreas	* Parathyroid Gland	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Trachea
* Urinary Bladder			

**OBSERVATIONS**

* Adrenal Cortex		Angiectasis	Minimal
		Vacuolization Cytoplasmic	Mild
* Brain		Compression	Moderate
* Liver		Basophilic Focus	
* Lung		Infiltration Cellular	Histiocyte, Mild
	Alveolus	Proteinosis	Minimal
	[ Infiltration Cellular TGLs = 4-4+5 ]		
* Mammary Gland	Duct	Cyst	Mild
	[ Cyst TGLs = 2-15 ]		
* Pituitary Gland	Pars Distalis	Adenoma	
	[ Adenoma TGLs = 5-10 ]		
* Thymus		Thymoma Benign	
	[ Thymoma Benign TGLs = 3-3 ]		
* Thyroid Gland	Bilateral, C Cell	Adenoma	
* Uterus		Polyp Stromal	

PRIMARY CAUSE OF DEATH - Pituitary Gland Pars Distalis Adenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 118

TRT#: 2

SEX: Female

DAY ON TEST: 733

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 60238

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lymph Node, Bronchial	* Lymph Node, Mandibular
* Lymph Node, Mesenteric	* Mammary Gland	* Ovary	* Pancreas
* Salivary Glands	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Urinary Bladder	* Uterus	

MISSING

* Lymph Node, Mediastinal	* Parathyroid Gland	* Thymus
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INSUFFICIENT TISSUE

* Thyroid Gland	* Trachea
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OBSERVATIONS

* Adrenal Cortex		Hypertrophy	Minimal
		Vacuolization Cytoplasmic	
* Kidney	Pelvis	Inflammation	Minimal
* Liver		Basophilic Focus	
* Lung		Infiltration Cellular	Histiocyte, Minimal
* Nose	Goblet Cell	Hyperplasia	Minimal
* Pituitary Gland	Pars Distalis	Adenoma	

[ Adenoma TGLs = 1-10 ]

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 119

TRT#: 2

SEX: Female

DAY ON TEST: 697

DOSE: Control

DISP: Moribund Sacrifice

HISTO: 60239

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Larynx	* Lymph Node, Bronchial
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Ovary	* Pancreas	* Parathyroid Gland	* Salivary Glands
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Trachea
* Urinary Bladder	* Uterus		

OBSERVATIONS

* Adrenal Cortex		Vacuolization Cytoplasmic	Minimal
* Liver		Basophilic Focus	
* Lung		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Minimal
* Nose	Goblet Cell	Hyperplasia	Minimal
	Olfactory Epi	Metaplasia	Respiratory, Minimal
* Pituitary Gland	Pars Distalis	Adenoma	
	[ Adenoma TGLs = 3-10 ]		
* Spleen	Lymph Follic	Atrophy	Mild
* Thymus		Atrophy	Marked
* Thyroid Gland	Follicle	Carcinoma	
	[ Carcinoma TGLs = 1,2,3-3+14 ]		

PRIMARY CAUSE OF DEATH - Thyroid Gland Follicle Carcinoma  
 CONTRIBUTORY CAUSE OF DEATH - Pituitary Gland Pars Distalis Adenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 120

TRT#: 2

SEX: Female

DAY ON TEST: 708

DOSE: Control

DISP: Moribund Sacrifice

HISTO: 60240

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lung	* Lymph Node, Bronchial
* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Mammary Gland	* Ovary
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Salivary Glands
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Trachea	* Urinary Bladder		

MISSING

\* Lymph Node, Mediastinal

OBSERVATIONS

* Adrenal Cortex		Angiectasis	Minimal
* Kidney	Pelvis	Inflammation	Mild
* Liver		Basophilic Focus	
Mesentery	Fat	Necrosis	Moderate
[ Necrosis TGLs = 1-14 ]			
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
* Spleen		Hematopoietic Cell Proliferation	Mild
[ Hematopoietic Cell Proliferation TGLs = 3-6 ]			
* Thyroid Gland	C Cell	Hyperplasia	Mild
* Uterus		Sarcoma Stromal	
[ Sarcoma Stromal TGLs = 2-10 ]			

PRIMARY CAUSE OF DEATH - Uterus Sarcoma Stromal

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 121

TRT#: 2

SEX: Female

DAY ON TEST: 733

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 60241

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lung	* Lymph Node, Mandibular
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Ovary
* Pancreas	* Parathyroid Gland	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Trachea	* Urinary Bladder	* Uterus	

**OBSERVATIONS**

* Adrenal Cortex		Angiectasis	Mild
* Kidney	Pelvis	Inflammation	Mild
* Liver		Basophilic Focus	
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocytosis, Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
* Pituitary Gland	Pars Distalis	Adenoma	
[ Adenoma TGLs = 1-10 ]			
* Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Mild

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

**ANIMAL ID:** 122

**TRT#:** 2

**SEX:** Female

**DAY ON TEST:** 606

**DOSE:** Control

**DISP:** Moribund Sacrifice

**HISTO:** 60242

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * Adrenal Cortex            | * Adrenal Medulla        | Blood Vessel               | * Bone                    |
| * Bone Marrow               | * Esophagus              | * Eye                      | * Harderian Gland         |
| * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   | * Intestine Large, Rectum |
| * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic      |
| * Larynx                    | * Liver                  | * Lung                     | * Lymph Node, Mandibular  |
| * Lymph Node, Mediastinal   | * Lymph Node, Mesenteric | * Nose                     | * Ovary                   |
| * Pancreas                  | * Parathyroid Gland      | * Salivary Glands          | * Skin                    |
| * Spleen                    | * Stomach, Forestomach   | * Stomach, Glandular       | * Trachea                 |
| * Urinary Bladder           | * Uterus                 |                            |                           |

**MISSING**

- \* Lymph Node, Bronchial

**OBSERVATIONS**

- |                         |               |               |          |
|-------------------------|---------------|---------------|----------|
| * Brain                 |               | Compression   | Moderate |
|                         |               | Hydrocephalus | Moderate |
| * Clitoral Gland        |               | Inflammation  | Minimal  |
| * Kidney                | Pelvis        | Inflammation  | Minimal  |
| * Mammary Gland         |               | Adenoma       |          |
|                         | Duct          | Cyst          | Mild     |
| [ Adenoma TGLs = 4-15 ] |               |               |          |
| [ Cyst TGLs = 3-14 ]    |               |               |          |
| * Pituitary Gland       | Pars Intermed | Adenoma       |          |
| [ Adenoma TGLs = 5-10 ] |               |               |          |
| * Thymus                |               | Atrophy       | Mild     |
| * Thyroid Gland         | C Cell        | Hyperplasia   | Minimal  |

**PRIMARY CAUSE OF DEATH** - Pituitary Gland Pars Intermed Adenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 123

TRT#: 2

SEX: Female

DAY ON TEST: 733

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 60243

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Esophagus	* Eye	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx
* Liver	* Lung	* Lymph Node, Bronchial	* Lymph Node, Mandibular
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Pancreas	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Trachea	* Urinary Bladder

**MISSING**

\* Parathyroid Gland

**OBSERVATIONS**

* Brain		Compression	Mild
* Clitoral Gland		Inflammation	Minimal
* Harderian Gland		Inflammation	Minimal
* Kidney	Pelvis	Inflammation	Minimal
		Nephropathy	Minimal
* Ovary		Cyst	Marked
		Granulosa Cell Tumor Malignant	
	[ Cyst TGLs = 2-9 ]		
	[ Granulosa Cell Tumor Malignant TGLs = 3-14 ]		
* Pituitary Gland	Pars Distalis	Adenoma	
	[ Adenoma TGLs = 1-10 ]		
* Thymus		Thymoma Benign	
* Thyroid Gland	C Cell	Hyperplasia	Mild
* Uterus	Endometrium	Hyperplasia	Cystic, Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 124

**TRT#:** 2

**SEX:** Female

**DAY ON TEST:** 733

**DOSE:** Control

**DISP:** Terminal Sacrifice

**HISTO:** 60244

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Larynx	* Lung
* Lymph Node, Mesenteric	* Mammary Gland	* Nose	* Ovary
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder
* Uterus			

**MISSING**

* Lymph Node, Bronchial	* Lymph Node, Mandibular
-------------------------	--------------------------

**OBSERVATIONS**

* Adrenal Cortex	Angiectasis	Minimal
	Hypertrophy	Minimal
* Liver	Basophilic Focus	
* Lymph Node, Mediastinal	Hyperplasia	Plasma Cell, Minimal



**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 125

**TRT#:** 2

**SEX:** Female

**DAY ON TEST:** 732

**DOSE:** Control

**DISP:** Moribund Sacrifice

**HISTO:** 60245

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Clitoral Gland	* Esophagus	* Eye
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Kidney	* Larynx	* Lung	* Lymph Node, Bronchial
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Ovary	* Pancreas
* Parathyroid Gland	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Trachea	* Urinary Bladder

**MISSING**

\* Lymph Node, Mandibular

**OBSERVATIONS**

* Brain		Compression	Moderate
* Harderian Gland		Atrophy	Minimal
* Liver		Fatty Change	Mild
	Bile Duct	Hyperplasia	Minimal
* Mammary Gland		Carcinoma	
	[ Carcinoma TGLs = 2-14 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
* Pituitary Gland	Pars Distalis	Adenoma	
	[ Adenoma TGLs = 1-10 ]		
* Thymus		Thymoma Benign	
* Thyroid Gland	C Cell	Hyperplasia	Minimal
* Uterus		Adenocarcinoma	
	[ Adenocarcinoma TGLs = 3-9 ]		

**PRIMARY CAUSE OF DEATH** - Pituitary Gland Pars Distalis Adenoma

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 126

TRT#: 2

SEX: Female

DAY ON TEST: 731

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 60246

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lymph Node, Bronchial	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Nose	* Ovary
* Pancreas	* Parathyroid Gland	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Trachea	* Urinary Bladder	* Uterus	

MISSING

\* Lymph Node, Mandibular

OBSERVATIONS

* Adrenal Cortex		Angiectasis	Minimal
* Kidney	Pelvis	Inflammation	Minimal
* Liver		Basophilic Focus	
* Lung		Infiltration Cellular	Histiocyte, Minimal
Mesentery	Fat	Necrosis	Mild
[ Necrosis TGLs = 2-14 ]			
* Pituitary Gland	Pars Distalis	Adenoma	
[ Adenoma TGLs = 1-10 ]			
* Thyroid Gland	C Cell	Hyperplasia	Mild

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 127

**TRT#:** 2

**SEX:** Female

**DAY ON TEST:** 733

**DOSE:** Control

**DISP:** Terminal Sacrifice

**HISTO:** 60247

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Esophagus	* Eye	* Harderian Gland	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Lung
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Nose	* Ovary	* Pancreas
* Salivary Glands	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Trachea	* Urinary Bladder	

**OBSERVATIONS**

* Adrenal Cortex		Angiectasis	Moderate
* Brain		Compression	Moderate
* Clitoral Gland		Inflammation	Minimal
* Heart		Cardiomyopathy	Minimal
* Kidney	Pelvis	Inflammation	Minimal
* Liver		Clear Cell Focus	
	[ Clear Cell Focus TGLs = 1-14 ]		
* Parathyroid Gland		Adenoma	
* Pituitary Gland	Pars Distalis	Adenoma	
	[ Adenoma TGLs = 2-10 ]		
* Thymus		Atrophy	Moderate
* Thyroid Gland	C Cell	Hyperplasia	Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 128

**TRT#:** 2

**SEX:** Female

**DAY ON TEST:** 352

**DOSE:** Control

**DISP:** Moribund Sacrifice

**HISTO:** 60248

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * Adrenal Medulla           | Blood Vessel             | * Bone                     | * Bone Marrow             |
| * Brain                     | * Esophagus              | * Eye                      | * Harderian Gland         |
| * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   | * Intestine Large, Rectum |
| * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic      |
| * Kidney                    | * Larynx                 | * Liver                    | * Lung                    |
| * Lymph Node, Bronchial     | * Lymph Node, Mandibular | * Lymph Node, Mediastinal  | * Lymph Node, Mesenteric  |
| * Mammary Gland             | * Nose                   | * Ovary                    | * Pancreas                |
| * Parathyroid Gland         | * Pituitary Gland        | * Salivary Glands          | * Skin                    |
| * Stomach, Forestomach      | * Stomach, Glandular     | * Trachea                  | * Urinary Bladder         |

**OBSERVATIONS**

- |                  |   |                                  |          |
|------------------|---|----------------------------------|----------|
| * Adrenal Cortex |   | Hematopoietic Cell Proliferation | Mild     |
| * Clitoral Gland |   | Inflammation                     | Mild     |
| * Spleen         |   | Hematopoietic Cell Proliferation | Moderate |
|                  | [ Hematopoietic Cell Proliferation TGLs = 1-6 ] |                                  |          |
| * Thymus         |   | Atrophy                          | Minimal  |
| * Thyroid Gland  | C Cell  | Hyperplasia                      | Minimal  |
| * Uterus         |   | Histiocytic Sarcoma              |          |
|                  | [ Histiocytic Sarcoma TGLs = 2-15+16 ]          |                                  |          |

**PRIMARY CAUSE OF DEATH** - Uterus Histiocytic Sarcoma

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 129

**TRT#:** 2

**SEX:** Female

**DAY ON TEST:** 733

**DOSE:** Control

**DISP:** Terminal Sacrifice

**HISTO:** 60249

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex           | * Adrenal Medulla         | Blood Vessel                | * Bone                   |
| * Bone Marrow              | * Brain                   | * Clitoral Gland            | * Esophagus              |
| * Eye                      | * Harderian Gland         | * Heart                     | * Intestine Large, Cecum |
| * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic      | * Kidney                    | * Larynx                 |
| * Liver                    | * Lung                    | * Lymph Node, Bronchial     | * Lymph Node, Mandibular |
| * Lymph Node, Mediastinal  | * Lymph Node, Mesenteric  | * Mammary Gland             | * Nose                   |
| * Pancreas                 | * Parathyroid Gland       | * Salivary Glands           | * Skin                   |
| * Spleen                   | * Stomach, Forestomach    | * Stomach, Glandular        | * Trachea                |
| * Urinary Bladder          |                           |                             |                          |

**OBSERVATIONS**

- |                               |               |                |                 |
|-------------------------------|---------------|----------------|-----------------|
| * Ovary                       |               | Cyst           | Mild            |
| [ Cyst TGLs = 1,2-9 ]         |               |                |                 |
| * Pituitary Gland             | Pars Distalis | Hyperplasia    | Moderate        |
| [ Hyperplasia TGLs = 4-10 ]   |               |                |                 |
| * Thymus                      |               | Thymoma Benign |                 |
| [ Thymoma Benign TGLs = 3-3 ] |               |                |                 |
| * Thyroid Gland               | C Cell        | Hyperplasia    | Minimal         |
| * Uterus                      | Endometrium   | Hyperplasia    | Cystic, Minimal |

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 130

**TRT#:** 2

**SEX:** Female

**DAY ON TEST:** 731

**DOSE:** Control

**DISP:** Terminal Sacrifice

**HISTO:** 60250

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex          | * Adrenal Medulla           | Blood Vessel             | * Bone                     |
| * Bone Marrow             | * Clitoral Gland            | * Esophagus              | * Eye                      |
| * Harderian Gland         | * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic      | * Larynx                    | * Lung                   | * Lymph Node, Bronchial    |
| * Lymph Node, Mandibular  | * Lymph Node, Mediastinal   | * Lymph Node, Mesenteric | * Mammary Gland            |
| * Nose                    | * Ovary                     | * Pancreas               | * Parathyroid Gland        |
| * Salivary Glands         | * Skin                      | * Spleen                 | * Stomach, Forestomach     |
| * Stomach, Glandular      | * Thymus                    | * Trachea                | * Urinary Bladder          |

**OBSERVATIONS**

- |  |               |                            |              |
|--|---------------|----------------------------|--------------|
| * Brain                                    |               | Compression                | Minimal      |
| * Kidney                                   | Pelvis        | Inflammation               | Mild         |
| * Liver                                    |               | Basophilic Focus           |              |
| * Pituitary Gland                          | Pars Distalis | Adenoma                    |              |
| [ Adenoma TGLs = 3-10 ]                    |               |                            |              |
| * Thyroid Gland                            | C Cell        | Hyperplasia                | Minimal      |
| * Uterus                                   | Endometrium   | Granular Cell Tumor Benign |              |
| [ Granular Cell Tumor Benign TGLs = 1-14 ] |               | Hyperplasia                | Cystic, Mild |
| [ Hyperplasia TGLs = 2-10 ]                |               |                            |              |

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 131

**TRT#:** 2

**SEX:** Female

**DAY ON TEST:** 716

**DOSE:** Control

**DISP:** Moribund Sacrifice

**HISTO:** 60251

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Blood Vessel	* Bone	* Bone Marrow	* Clitoral Gland
* Esophagus	* Eye	* Harderian Gland	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Liver	* Lung
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Nose	* Ovary	* Pancreas
* Parathyroid Gland	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Trachea
* Urinary Bladder	* Uterus		

**OBSERVATIONS**

* Adrenal Cortex		Angiectasis	Mild
* Adrenal Medulla		Hyperplasia	Minimal
* Brain		Compression	Moderate
		Hydrocephalus	Mild
	[ Hydrocephalus TGLs = 4,5-1+14 ]		
* Heart		Cardiomyopathy	Minimal
* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
* Pituitary Gland	Pars Distalis	Adenoma	
	[ Adenoma TGLs = 3-10 ]		
* Thyroid Gland	C Cell	Hyperplasia	Minimal

**PRIMARY CAUSE OF DEATH** - Pituitary Gland Pars Distalis Adenoma

Experiment Number: 20523 - 03  
Test Type: CHRONIC  
Route: RESPIRATORY EXPOSURE WHOLE BODY  
Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Metal working fluids (Trim VX)  
CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
Time Report Requested: 09:56:24  
First Dose M/F: 07/20/09 / 07/20/09  
Lab: BNW

ANIMAL ID: 132

TRT#: 2

SEX: Female

DAY ON TEST: 733

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 60252

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lung	* Lymph Node, Bronchial
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Nose	* Ovary	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Trachea
* Urinary Bladder	* Uterus		

OBSERVATIONS

* Adrenal Cortex		Angiectasis	Minimal
* Kidney	Pelvis	Inflammation	Minimal
* Liver		Basophilic Focus	
		Clear Cell Focus	
* Thyroid Gland	C Cell	Hyperplasia	Minimal



**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 133

**TRT#:** 2

**SEX:** Female

**DAY ON TEST:** 733

**DOSE:** Control

**DISP:** Terminal Sacrifice

**HISTO:** 60253

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex           | * Adrenal Medulla         | Blood Vessel                | * Bone                   |
| * Bone Marrow              | * Brain                   | * Clitoral Gland            | * Esophagus              |
| * Eye                      | * Harderian Gland         | * Heart                     | * Intestine Large, Cecum |
| * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic      | * Larynx                    | * Lymph Node, Bronchial  |
| * Lymph Node, Mediastinal  | * Lymph Node, Mesenteric  | * Mammary Gland             | * Nose                   |
| * Ovary                    | * Pancreas                | * Parathyroid Gland         | * Salivary Glands        |
| * Skin                     | * Spleen                  | * Stomach, Forestomach      | * Stomach, Glandular     |
| * Thymus                   | * Thyroid Gland           | * Trachea                   | * Urinary Bladder        |
| * Uterus                   |                           |                             |                          |

**MISSING**

- \* Lymph Node, Mandibular

**OBSERVATIONS**

- |                   |                         |                       |                     |
|-------------------|-------------------------|-----------------------|---------------------|
| * Kidney          | Pelvis                  | Inflammation          | Minimal             |
| * Liver           |                         | Basophilic Focus      |                     |
|                   |                         | Clear Cell Focus      |                     |
|                   |                         | Mixed Cell Focus      |                     |
| * Lung            |                         | Fibrosis              | Minimal             |
|                   | Alveolar Epith          | Hyperplasia           | Minimal             |
|                   |                         | Infiltration Cellular | Histiocyte, Minimal |
| * Pituitary Gland | Pars Distalis           | Adenoma               |                     |
|                   | [ Adenoma TGLs = 1-10 ] |                       |                     |

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

**ANIMAL ID:** 134

**TRT#:** 2

**SEX:** Female

**DAY ON TEST:** 536

**DOSE:** Control

**DISP:** Moribund Sacrifice

**HISTO:** 60254

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex           | * Adrenal Medulla         | Blood Vessel                | * Bone                   |
| * Bone Marrow              | * Brain                   | * Clitoral Gland            | * Esophagus              |
| * Eye                      | * Harderian Gland         | * Heart                     | * Intestine Large, Cecum |
| * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic      | * Larynx                    | * Lymph Node, Bronchial  |
| * Lymph Node, Mesenteric   | * Nose                    | * Ovary                     | * Pancreas               |
| * Parathyroid Gland        | * Pituitary Gland         | * Salivary Glands           | * Skin                   |
| * Stomach, Forestomach     | * Stomach, Glandular      | * Trachea                   | * Urinary Bladder        |

**MISSING**

- \* Lymph Node, Mandibular

**OBSERVATIONS**

- |                           |   |                                  |                       |
|---------------------------|---|----------------------------------|-----------------------|
| * Kidney                  | Pelvis  | Inflammation                     | Minimal               |
| * Liver                   |   | Basophilic Focus                 |                       |
| * Lung                    | Alv/Bron Epith                                  | Hyperplasia                      | Minimal               |
| Lymph Node                | Renal   | Hyperplasia                      | Plasma Cell, Moderate |
|                           | Lumbar  | Hyperplasia                      | Plasma Cell, Mild     |
|                           |   |                                  |                       |
|                           | [ Hyperplasia TGLs = 4-7 ]                      |                                  |                       |
|                           | [ Hyperplasia TGLs = 5-14 ]                     |                                  |                       |
| * Lymph Node, Mediastinal |   | Hyperplasia                      | Plasma Cell, Moderate |
| * Mammary Gland           | Duct  | Cyst                             | Mild                  |
|                           | [ Cyst TGLs = 6,7-14+15 ]                       |                                  |                       |
| * Spleen                  |   | Hematopoietic Cell Proliferation | Mild                  |
|                           | [ Hematopoietic Cell Proliferation TGLs = 2-6 ] |                                  |                       |
| * Thymus                  |   | Atrophy                          | Mild                  |
| * Thyroid Gland           | C Cell  | Hyperplasia                      | Minimal               |
| * Uterus                  |   | Schwannoma Malignant             |                       |
|                           | [ Schwannoma Malignant TGLs = 1,3-15+16+17 ]    |                                  |                       |

**PRIMARY CAUSE OF DEATH** - Uterus Schwannoma Malignant

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 135

**TRT#:** 2

**SEX:** Female

**DAY ON TEST:** 598

**DOSE:** Control

**DISP:** Moribund Sacrifice

**HISTO:** 60255

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Esophagus	* Eye	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney
* Larynx	* Liver	* Lung	* Lymph Node, Mandibular
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Ovary	* Pancreas	Peripheral Nerve	* Salivary Glands
Skeletal Muscle	* Skin	Spinal Cord	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Trachea	* Urinary Bladder
* Uterus			

**MISSING**

* Lymph Node, Bronchial	* Parathyroid Gland
-------------------------	---------------------

**OBSERVATIONS**

* Adrenal Cortex		Hypertrophy	Minimal
		Vacuolization Cytoplasmic	Minimal
* Brain		Compression	Moderate
		Hydrocephalus	Mild
* Clitoral Gland		Inflammation	Minimal
* Pituitary Gland	Pars Distalis	Adenoma	
[ Adenoma TGLs = 3-10 ]			
* Thymus		Atrophy	Minimal
* Thyroid Gland	C Cell	Hyperplasia	Minimal

**PRIMARY CAUSE OF DEATH** - Pituitary Gland Pars Distalis Adenoma

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 136

**TRT#:** 2

**SEX:** Female

**DAY ON TEST:** 613

**DOSE:** Control

**DISP:** Moribund Sacrifice

**HISTO:** 60256

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Esophagus	* Eye	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney
* Larynx	* Lung	* Lymph Node, Bronchial	* Lymph Node, Mandibular
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Ovary	* Pancreas	* Parathyroid Gland	Peripheral Nerve
* Salivary Glands	Skeletal Muscle	* Skin	Spinal Cord
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Trachea
* Urinary Bladder	* Uterus		

**OBSERVATIONS**

* Adrenal Cortex		Angiectasis	Minimal
		Vacuolization Cytoplasmic	Minimal
* Brain		Compression	Marked
		Hydrocephalus	Mild
* Clitoral Gland		Inflammation	Minimal
* Liver		Fatty Change	Minimal
* Pituitary Gland	Pars Distalis	Adenoma	
	[ Adenoma TGLs = 1-10 ]		
* Thymus		Thymoma Benign	
* Thyroid Gland	C Cell	Hyperplasia	Minimal

**PRIMARY CAUSE OF DEATH** - Pituitary Gland Pars Distalis Adenoma

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 137

**TRT#:** 2

**SEX:** Female

**DAY ON TEST:** 732

**DOSE:** Control

**DISP:** Terminal Sacrifice

**HISTO:** 60257

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Larynx	* Lung
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Ovary	* Pancreas	* Parathyroid Gland	* Salivary Glands
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Trachea	* Urinary Bladder		

**OBSERVATIONS**

* Adrenal Cortex		Angiectasis	Minimal
* Liver		Clear Cell Focus	
* Mammary Gland		Hyperplasia	Mild
[ Hyperplasia TGLs = 1-14 ]			
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
* Pituitary Gland	Pars Distalis	Hyperplasia	Moderate
[ Hyperplasia TGLs = 2-10 ]			
* Skin		Cyst Epithelial Inclusion	
[ Cyst Epithelial Inclusion TGLs = 3-15 ]			
* Thyroid Gland	C Cell	Adenoma	
* Uterus		Polyp Stromal	
[ Polyp Stromal TGLs = 4-10 ]			

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 138

**TRT#:** 2

**SEX:** Female

**DAY ON TEST:** 654

**DOSE:** Control

**DISP:** Moribund Sacrifice

**HISTO:** 60258

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Esophagus	* Eye	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney
* Larynx	* Liver	* Lymph Node, Bronchial	* Lymph Node, Mandibular
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Ovary
* Pancreas	* Parathyroid Gland	* Salivary Glands	* Skin
* Spleen	* Stomach, Glandular	* Trachea	* Urinary Bladder

**OBSERVATIONS**

* Adrenal Cortex		Hypertrophy	Mild
		Vacuolization Cytoplasmic	Mild
* Brain		Compression	Marked
		Hydrocephalus	Moderate
* Clitoral Gland		Fibrosis	Mild
* Lung		Infiltration Cellular	Histiocyte, Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
* Pituitary Gland	Pars Distalis	Adenoma	
	[ Adenoma TGLs = 1-10 ]		
* Stomach, Forestomach	Epithelium	Hyperplasia	Mild
		Inflammation	Minimal
* Thymus		Atrophy	Mild
* Thyroid Gland	C Cell	Hyperplasia	Minimal
* Uterus		Schwannoma Malignant	
	[ Schwannoma Malignant TGLs = 2,3-14+15+16 ]		

**PRIMARY CAUSE OF DEATH** - Uterus Schwannoma Malignant  
**CONTRIBUTORY CAUSE OF DEATH** - Pituitary Gland Pars Distalis Adenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 139

TRT#: 2

SEX: Female

DAY ON TEST: 586

DOSE: Control

DISP: Moribund Sacrifice

HISTO: 60259

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone Marrow	* Brain
* Clitoral Gland	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Ovary	* Pancreas	* Parathyroid Gland	* Salivary Glands
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Trachea
* Urinary Bladder	* Uterus		

OBSERVATIONS

* Adrenal Cortex		Angiectasis	Mild
		Hematopoietic Cell Proliferation	Mild
		Hypertrophy	Mild
* Bone		Osteopetrosis	Marked
	[ Osteopetrosis TGLs = 1-14 ]		
* Kidney	Pelvis	Inflammation	Minimal
* Liver	Centrilobular	Degeneration	Mild
		Hematopoietic Cell Proliferation	Moderate
* Lung		Infiltration Cellular	Histiocyte, Minimal
	[ Infiltration Cellular TGLs = 4-4+5+15 ]		
* Lymph Node, Bronchial		Hematopoietic Cell Proliferation	Moderate
* Lymph Node, Mandibular		Hematopoietic Cell Proliferation	Mild
* Lymph Node, Mediastinal		Hematopoietic Cell Proliferation	Moderate
* Pituitary Gland	Pars Distalis	Adenoma	
	[ Adenoma TGLs = 3-10 ]		
* Spleen		Hematopoietic Cell Proliferation	Marked
	[ Hematopoietic Cell Proliferation TGLs = 2-6 ]		
* Thymus		Atrophy	Marked
* Thyroid Gland	C Cell	Hyperplasia	Minimal

PRIMARY CAUSE OF DEATH - Pituitary Gland Pars Distalis Adenoma

CONTRIBUTORY CAUSE OF DEATH - Bone Osteopetrosis

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 140

**TRT#:** 2

**SEX:** Female

**DAY ON TEST:** 732

**DOSE:** Control

**DISP:** Terminal Sacrifice

**HISTO:** 60260

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Kidney	* Larynx	* Liver	* Lung
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Nose	* Ovary	* Parathyroid Gland
* Pituitary Gland	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Trachea	* Urinary Bladder
* Uterus			

**OBSERVATIONS**

* Adrenal Cortex		Angiectasis	Minimal
* Heart		Cardiomyopathy	Minimal
* Pancreas	Acinus	Atrophy	Mild
* Thymus		Thymoma Benign	
* Thyroid Gland	C Cell	Hyperplasia	Mild



**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 141

**TRT#:** 2

**SEX:** Female

**DAY ON TEST:** 732

**DOSE:** Control

**DISP:** Terminal Sacrifice

**HISTO:** 60261

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Liver	* Lung	* Lymph Node, Mandibular
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Nose	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Salivary Glands	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Trachea	* Urinary Bladder

**MISSING**

\* Lymph Node, Bronchial

**OBSERVATIONS**

* Adrenal Cortex		Angiectasis	Mild
* Clitoral Gland		Inflammation	Mild
* Kidney	Pelvis	Inflammation	Minimal
* Mammary Gland	Duct	Cyst	Mild
* Ovary		Cyst	Mild
	[ Cyst TGLs = 1-9 ]		
* Skin		Ulcer	Mild
	[ Ulcer TGLs = 4-14 ]		
* Thymus		Atrophy	Moderate
* Thyroid Gland	C Cell	Hyperplasia	Mild
* Uterus		Adenoma	
	Endometrium	Hyperplasia	Cystic, Moderate
		Inflammation	Suppurative, Moderate
	[ Adenoma TGLs = 3-10 ]		
	[ Inflammation TGLs = 2-14 ]		

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 142

**TRT#:** 2

**SEX:** Female

**DAY ON TEST:** 732

**DOSE:** Control

**DISP:** Terminal Sacrifice

**HISTO:** 60262

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Clitoral Gland	* Esophagus	* Eye	* Harderian Gland
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Nose	* Ovary	* Parathyroid Gland	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Trachea	* Urinary Bladder	* Uterus

**OBSERVATIONS**

* Adrenal Cortex		Angiectasis	Minimal
* Brain		Compression	Marked
* Heart		Cardiomyopathy	Minimal
* Kidney	Pelvis	Inflammation	Minimal
* Liver		Basophilic Focus	
* Lung		Fibrosis	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Minimal
* Mammary Gland		Carcinoma	
[ Carcinoma TGLs = 1-14 ]			
* Pancreas	Acinus	Atrophy	Minimal
* Pituitary Gland	Pars Distalis	Adenoma	
[ Adenoma TGLs = 2-10 ]			
* Thyroid Gland	C Cell	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 143

TRT#: 2

SEX: Female

DAY ON TEST: 733

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 60263

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Nose	* Ovary	* Pancreas
* Parathyroid Gland	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

\* Lymph Node, Bronchial

OBSERVATIONS

* Adrenal Cortex		Angiectasis	Mild
* Kidney	Pelvis	Inflammation	Minimal
* Liver		Eosinophilic Focus	
* Lung	Alveolar Epith	Hyperplasia	Minimal
	[ Hyperplasia TGLs = 4-5 ]		
* Mammary Gland		Adenoma	Multiple
	[ Adenoma TGLs = 1,2-14+15 ]	Hyperplasia	Mild
* Pituitary Gland	Pars Distalis	Adenoma	
	[ Adenoma TGLs = 5-10 ]		
* Uterus		Polyp Stromal	
	[ Polyp Stromal TGLs = 3-10 ]		

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 144

TRT#: 2

SEX: Female

DAY ON TEST: 733

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 60264

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Larynx	* Lymph Node, Mandibular
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Ovary
* Pancreas	* Parathyroid Gland	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Trachea
* Urinary Bladder	* Uterus		

MISSING

\* Lymph Node, Bronchial

OBSERVATIONS

* Adrenal Cortex		Angiectasis	Minimal
* Liver		Clear Cell Focus	
		Mixed Cell Focus	
* Lung	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Minimal
* Nose	Transit Epithe	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Adenoma	
	[ Adenoma TGLs = 1-10 ]		
* Thymus		Thymoma Benign	
	[ Thymoma Benign TGLs = 2-3 ]		
* Thyroid Gland	C Cell	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 145

**TRT#:** 2

**SEX:** Female

**DAY ON TEST:** 674

**DOSE:** Control

**DISP:** Moribund Sacrifice

**HISTO:** 60265

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone Marrow	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Larynx	* Liver
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Ovary	* Pancreas	* Salivary Glands	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Trachea	* Urinary Bladder
* Uterus			

**MISSING**

\* Parathyroid Gland

**OBSERVATIONS**

* Adrenal Cortex		Hypertrophy	Minimal
		Vacuolization Cytoplasmic	Minimal
* Bone	Joint	Inflammation	Mild
[ Inflammation TGLs = 6-14 ]			
* Brain		Compression	Marked
		Hydrocephalus	Moderate
* Clitoral Gland		Inflammation	Minimal
* Kidney	Pelvis	Inflammation	Minimal
* Lung	Alveolar Epith	Fibrosis	Minimal
		Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Minimal
[ Infiltration Cellular TGLs = 1-4+5 ]			
Lymph Node	Lumbar	Hyperplasia	Plasma Cell, Moderate
	Popliteal	Hyperplasia	Plasma Cell, Marked
[ Hyperplasia TGLs = 5-19 ]			
[ Hyperplasia TGLs = 8-20 ]			
* Mammary Gland		Adenoma	
[ Adenoma TGLs = 4-18 ]			

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 145

**TRT#:** 2

**SEX:** Female

**DAY ON TEST:** 674

**DOSE:** Control

**DISP:** Moribund Sacrifice

**HISTO:** 60265

**ORGAN AND ACCOUNTABLE SITE STATUS**

* Nose	Transit Epithe	Hyperplasia	Mild
	Transit Epithe	Metaplasia	Squamous, Minimal
* Pituitary Gland	Pars Distalis	Adenoma	
	[ Adenoma TGLs = 2-10 ]		
* Skin		Ulcer	Mild
	[ Ulcer TGLs = 3,7-16+17 ]		
* Spleen		Hematopoietic Cell Proliferation	Minimal
* Thyroid Gland	C Cell	Hyperplasia	Moderate

**PRIMARY CAUSE OF DEATH** - Pituitary Gland Pars Distalis Adenoma

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 146

**TRT#:** 2

**SEX:** Female

**DAY ON TEST:** 733

**DOSE:** Control

**DISP:** Terminal Sacrifice

**HISTO:** 60266

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Larynx	* Liver
* Lymph Node, Bronchial	* Lymph Node, Mesenteric	* Mammary Gland	* Ovary
* Pancreas	* Parathyroid Gland	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Trachea
* Urinary Bladder	* Uterus		

**MISSING**

* Lymph Node, Mandibular	* Lymph Node, Mediastinal
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**OBSERVATIONS**

* Adrenal Cortex		Angiectasis	Minimal
* Lung		Fibrosis	Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
* Pituitary Gland	Pars Distalis	Adenoma	
[ Adenoma TGLs = 1-10 ]			
* Thymus		Thymoma Benign	
* Thyroid Gland	C Cell	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 147

TRT#: 2

SEX: Female

DAY ON TEST: 576

DOSE: Control

DISP: Moribund Sacrifice

HISTO: 60267

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Liver	* Lymph Node, Bronchial
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Nose
* Ovary	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Salivary Glands	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Trachea	* Urinary Bladder	* Uterus	

**OBSERVATIONS**

* Adrenal Cortex		Hypertrophy	Minimal
		Vacuolization Cytoplasmic	Minimal
* Kidney	Pelvis	Inflammation	Minimal
* Lung		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Minimal
	[ Infiltration Cellular TGLs = 3-4 ]		
* Mammary Gland		Hyperplasia	Minimal
	[ Hyperplasia TGLs = 1-17 ]		
* Skin		Ulcer	Mild
	[ Ulcer TGLs = 6-18 ]		
* Spleen		Hematopoietic Cell Proliferation	Minimal
	[ Hematopoietic Cell Proliferation TGLs = 4-14 ]		
* Thyroid Gland	C Cell	Hyperplasia	Minimal
Vagina		Fibrosarcoma	
	[ Fibrosarcoma TGLs = 2,5-15+16 ]		

PRIMARY CAUSE OF DEATH - Vagina Fibrosarcoma



**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 148

**TRT#:** 2

**SEX:** Female

**DAY ON TEST:** 732

**DOSE:** Control

**DISP:** Terminal Sacrifice

**HISTO:** 60268

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Clitoral Gland	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Nose	* Pancreas
* Parathyroid Gland	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

**OBSERVATIONS**

* Adrenal Cortex		Angiectasis	Moderate
[ Angiectasis TGLs = 4-7 ]			
* Brain		Degeneration	Minimal
* Kidney	Pelvis	Inflammation	Minimal
* Liver		Basophilic Focus	
* Lung	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Minimal
* Ovary		Cyst	Mild
[ Cyst TGLs = 1-9 ]			
* Pituitary Gland	Pars Distalis	Hyperplasia	Mild
* Uterus		Polyp Stromal	Multiple
[ Polyp Stromal TGLs = 2,3-10+14 ]			

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 149

TRT#: 2

SEX: Female

DAY ON TEST: 732

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 60269

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Larynx	* Lung	* Lymph Node, Mandibular
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Salivary Glands	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Trachea	* Urinary Bladder

MISSING

* Lymph Node, Bronchial	* Parathyroid Gland
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OBSERVATIONS

* Adrenal Cortex		Angiectasis	Mild
		Hypertrophy	Moderate
* Kidney	Pelvis	Inflammation	Minimal
* Liver		Basophilic Focus	
	Bile Duct	Hyperplasia	Minimal
		Inflammation	Granulomatous, Minimal
* Ovary		Cyst	Mild
[ Cyst TGLs = 1-9 ]			
* Pancreas	Acinus	Atrophy	Mild
* Pituitary Gland	Pars Distalis	Adenoma	
* Thyroid Gland	C Cell	Hyperplasia	Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Mild

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 150

TRT#: 2

SEX: Female

DAY ON TEST: 733

DOSE: Control

DISP: Terminal Sacrifice

HISTO: 60270

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Clitoral Gland	* Esophagus	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Larynx	* Liver
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Ovary
* Pancreas	* Parathyroid Gland	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Trachea
* Urinary Bladder	* Uterus		

MISSING

\* Lymph Node, Mediastinal

OBSERVATIONS

* Adrenal Cortex		Angiectasis	Minimal
		Hypertrophy	Minimal
* Brain		Compression	Minimal
* Eye	Retina	Atrophy	Mild
* Islets, Pancreatic		Hyperplasia	Marked
* Kidney	Pelvis	Inflammation	Minimal
* Lung		Infiltration Cellular	Histiocyte, Minimal
* Mammary Gland		Fibroadenoma	
	[ Fibroadenoma TGLs = 1-14 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal
* Pituitary Gland	Pars Distalis	Adenoma	
	[ Adenoma TGLs = 2-10 ]		
* Thymus		Atrophy	Mild
* Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Mild

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 301

TRT#: 4

SEX: Female

DAY ON TEST: 733

DOSE: 10 mg/m3

DISP: Terminal Sacrifice

HISTO: 60521

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Clitoral Gland	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Mammary Gland	* Ovary
* Pancreas	* Parathyroid Gland	* Salivary Glands	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Trachea	* Urinary Bladder

**OBSERVATIONS**

* Adrenal Cortex		Angiectasis	Minimal
* Brain		Compression	Moderate
* Kidney		Nephropathy	Mild
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
	Epiglottis	Metaplasia	Squamous, Minimal
* Liver		Basophilic Focus	
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Minimal
	[ Infiltration Cellular TGLs = 2-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Mild
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Adenoma	
	[ Adenoma TGLs = 1-10 ]		
* Spleen		Hematopoietic Cell Proliferation	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 301

**TRT#:** 4

**SEX:** Female

**DAY ON TEST:** 733

**DOSE:** 10 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60521

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Thymus		Atrophy	Moderate
* Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Mild

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 302

TRT#: 4

SEX: Female

DAY ON TEST: 732

DOSE: 10 mg/m3

DISP: Terminal Sacrifice

HISTO: 60522

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Pancreas	* Parathyroid Gland	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Trachea	* Urinary Bladder	* Uterus

OBSERVATIONS

* Heart		Cardiomyopathy	Minimal
* Kidney	Pelvis	Inflammation	Minimal
* Larynx		Inflammation	Chronic Active, Mild
	Epiglottis	Metaplasia	Squamous, Mild
* Liver		Basophilic Focus	
		Clear Cell Focus	
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Minimal
	Alveolus	Proteinosis	Minimal
	[ Infiltration Cellular TGLs = 1,2-4 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Glands, Olfactory Epi	Hyperplasia	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Transit Epithe	Hyperplasia	Minimal
		Inflammation	Suppurative, Mild
* Ovary		Granulosa Cell Tumor Benign	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 302

**TRT#:** 4

**SEX:** Female

**DAY ON TEST:** 732

**DOSE:** 10 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60522

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* Pituitary Gland

Pars Distalis

Adenoma

\* Thyroid Gland

Pars Distalis

Hyperplasia

Mild

C Cell

Hyperplasia

Mild

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 303

TRT#: 4

SEX: Female

DAY ON TEST: 731

DOSE: 10 mg/m3

DISP: Terminal Sacrifice

HISTO: 60523

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Ovary	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Salivary Glands	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Trachea	* Urinary Bladder	* Uterus

MISSING

\* Lymph Node, Bronchial

OBSERVATIONS

* Adrenal Cortex		Angiectasis	Minimal
* Kidney		Metaplasia	Lipocyte, Mild
[ Metaplasia TGLs = 7-17 ]			
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
	Epiglottis	Inflammation	Chronic Active, Minimal
		Metaplasia	Squamous, Minimal
* Liver		Basophilic Focus	
[ Basophilic Focus TGLs = 6-15 ]			
* Lung	Alveolar Epith	Fibrosis	Minimal
		Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Minimal
[ Infiltration Cellular TGLs = 4,5-4 ]			
* Mammary Gland		Fibroadenoma	
[ Fibroadenoma TGLs = 1-16 ]			
Mesentery	Fat	Necrosis	Mild
[ Necrosis TGLs = 3-15 ]			
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 303

**TRT#:** 4

**SEX:** Female

**DAY ON TEST:** 731

**DOSE:** 10 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60523

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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	Goblet Cell	Hyperplasia	Mild
	Glands, Olfactory Epi	Hyperplasia	Mild
	Respirat Epith	Hyperplasia	Minimal
		Inflammation	Suppurative, Mild
* Thymus		Thymoma Benign	
	[ Thymoma Benign TGLs = 2-3+14 ]		
* Thyroid Gland	C Cell	Hyperplasia	Mild

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 304

TRT#: 4

SEX: Female

DAY ON TEST: 354

DOSE: 10 mg/m3

DISP: Moribund Sacrifice

HISTO: 60524

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex           | * Adrenal Medulla         | Blood Vessel                | * Bone                   |
| * Bone Marrow              | * Brain                   | * Clitoral Gland            | * Esophagus              |
| * Eye                      | * Harderian Gland         | * Heart                     | * Intestine Large, Cecum |
| * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic      | * Kidney                    | * Liver                  |
| * Lymph Node, Bronchial    | * Lymph Node, Mandibular  | * Lymph Node, Mediastinal   | * Lymph Node, Mesenteric |
| * Pancreas                 | Peripheral Nerve          | * Pituitary Gland           | * Salivary Glands        |
| Skeletal Muscle            | * Skin                    | Spinal Cord                 | * Spleen                 |
| * Stomach, Forestomach     | * Stomach, Glandular      | * Thymus                    | * Trachea                |
| * Urinary Bladder          |                           |                             |                          |

MISSING

- \* Parathyroid Gland

OBSERVATIONS

- |                 |  |                               |                         |
|-----------------|--|-------------------------------|-------------------------|
| * Larynx        | Epiglottis                               | Metaplasia                    | Squamous, Minimal       |
| * Lung          |  | Infiltration Cellular         | Histiocyte, Minimal     |
|                 |  | Inflammation                  | Chronic Active, Minimal |
|                 | [ Infiltration Cellular TGLs = 3,4-4+5 ] |                               |                         |
| * Mammary Gland |  | Fibroadenoma                  |                         |
|                 | [ Fibroadenoma TGLs = 1-14 ]             |                               |                         |
| * Nose          | Olfactory Epi                            | Accumulation, Hyaline Droplet | Mild                    |
|                 | Respirat Epith                           | Accumulation, Hyaline Droplet | Minimal                 |
|                 | Glands, Olfactory Epi                    | Hyperplasia                   | Minimal                 |
|                 |  | Inflammation                  | Suppurative, Minimal    |
| * Ovary         |  | Cyst                          | Minimal                 |
|                 | [ Cyst TGLs = 2-9 ]                      |                               |                         |
| * Thyroid Gland | C Cell                                   | Hyperplasia                   | Minimal                 |
| * Uterus        | Endometrium                              | Hyperplasia                   | Cystic, Minimal         |

PRIMARY CAUSE OF DEATH - Mammary Gland Fibroadenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 305

TRT#: 4

SEX: Female

DAY ON TEST: 732

DOSE: 10 mg/m3

DISP: Terminal Sacrifice

HISTO: 60525

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Kidney	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Ovary	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Salivary Glands	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Trachea	* Urinary Bladder	* Uterus

**MISSING**

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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**OBSERVATIONS**

* Adrenal Cortex		Angiectasis	Minimal
* Harderian Gland		Inflammation	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
	Epiglottis	Metaplasia	Squamous, Mild
* Liver		Basophilic Focus	
* Lung		Fibrosis	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Minimal
	[ Infiltration Cellular TGLs = 1,2-4+5 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Respirat Epith	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
	Transit Epithe	Hyperplasia	Minimal
		Inflammation	Suppurative, Mild
* Thymus		Atrophy	Mild
* Thyroid Gland	Follicle	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 305

**TRT#:** 4

**SEX:** Female

**DAY ON TEST:** 732

**DOSE:** 10 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60525

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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C Cell

Hyperplasia

Mild

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 306

TRT#: 4

SEX: Female

DAY ON TEST: 733

DOSE: 10 mg/m3

DISP: Terminal Sacrifice

HISTO: 60526

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Lymph Node, Mandibular
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Ovary
* Parathyroid Gland	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Trachea
* Urinary Bladder	* Uterus		

**OBSERVATIONS**

* Larynx	Epiglottis	Hyperplasia Infiltration Cellular	Squamous, Minimal Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Mild
* Liver	Bile Duct	Basophilic Focus Hyperplasia	Minimal
* Lung	Alv/Bron Epith	Fibrosis Hyperplasia	Minimal Mild
	Alveolar Epith	Hyperplasia Infiltration Cellular Inflammation	Minimal Histocyte, Mild Chronic Active, Minimal
	Alveolus	Proteinosis	Minimal
	[ Infiltration Cellular TGLs = 2-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Respirat Epith	Hyperplasia	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia Inflammation	Minimal Suppurative, Mild
* Pancreas	Acinus	Atrophy	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 306

**TRT#:** 4

**SEX:** Female

**DAY ON TEST:** 733

**DOSE:** 10 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60526

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Pituitary Gland	Pars Distalis	Adenoma	Multiple
	Pars Distalis	Hyperplasia	Mild
[ Adenoma TGLs = 1-10 ]			
* Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Minimal

---

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 307

TRT#: 4

SEX: Female

DAY ON TEST: 104

DOSE: 10 mg/m3

DISP: Natural Death

HISTO: 60527

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Mammary Gland	* Ovary	* Pancreas	* Pituitary Gland
* Salivary Glands	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Thyroid Gland	* Trachea	* Urinary Bladder	* Uterus

**MISSING**

* Lymph Node, Mediastinal	* Parathyroid Gland
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**OBSERVATIONS**

* Heart		Lymphoma Malignant	
* Larynx	Epiglottis	Hyperplasia	Squamous, Moderate
	Epiglottis	Infiltration Cellular	Mixed Cell, Minimal
		Metaplasia	Squamous, Moderate
* Liver		Fibrosis	Minimal
* Lung		Lymphoma Malignant	
	[ Lymphoma Malignant TGLs = 3-5 ]		
* Lymph Node, Bronchial		Lymphoma Malignant	
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
* Spleen		Lymphoma Malignant	
* Thymus		Lymphoma Malignant	
	[ Lymphoma Malignant TGLs = 2-14 ]		

PRIMARY CAUSE OF DEATH - Thymus Lymphoma Malignant

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 308

TRT#: 4

SEX: Female

DAY ON TEST: 649

DOSE: 10 mg/m3

DISP: Moribund Sacrifice

HISTO: 60528

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Liver	* Lymph Node, Bronchial
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Ovary	* Pancreas	* Parathyroid Gland	* Salivary Glands
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Trachea
* Urinary Bladder			

OBSERVATIONS

* Adrenal Cortex		Angiectasis	Mild
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
	Epiglottis	Metaplasia	Squamous, Mild
* Lung		Fibrosis	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Minimal
	Alveolus	Proteinosis	Minimal
[ Infiltration Cellular TGLs = 2-4+5+14 ]			
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Mild
* Spleen		Hematopoietic Cell Proliferation	Minimal
* Thymus		Atrophy	Moderate
* Thyroid Gland	C Cell	Hyperplasia	Minimal
* Uterus	Endometrium	Adenocarcinoma	
		Hyperplasia	Cystic, Moderate
[ Adenocarcinoma TGLs = 3-16 ]			

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 308

**TRT#:** 4

**SEX:** Female

**DAY ON TEST:** 649

**DOSE:** 10 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60528

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Hyperplasia TGLs = 4-15 ]

Zymbal's Gland

Carcinoma

[ Carcinoma TGLs = 1-16+17 ]

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PRIMARY CAUSE OF DEATH - Zymbal's Gland Carcinoma

CONTRIBUTORY CAUSE OF DEATH - Uterus Adenocarcinoma

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 309

TRT#: 4

SEX: Female

DAY ON TEST: 733

DOSE: 10 mg/m3

DISP: Terminal Sacrifice

HISTO: 60529

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Ovary	* Pancreas	* Parathyroid Gland	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Trachea	* Urinary Bladder	* Uterus

OBSERVATIONS

* Adrenal Cortex		Angiectasis	Minimal
* Harderian Gland		Inflammation	Minimal
* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Metaplasia	Squamous, Mild
* Liver		Basophilic Focus	
* Lung		Fibrosis	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Minimal
	Alveolus	Proteinosis	Minimal
	[ Infiltration Cellular TGLs = 2-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Adenoma	Multiple
	[ Adenoma TGLs = 1-10 ]		
* Thyroid Gland	C Cell	Hyperplasia	Mild

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 310

TRT#: 4

SEX: Female

DAY ON TEST: 731

DOSE: 10 mg/m3

DISP: Terminal Sacrifice

HISTO: 60530

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Esophagus	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Trachea
* Urinary Bladder	* Uterus		

OBSERVATIONS

* Clitoral Gland		Inflammation	Minimal
* Eye	Retina	Atrophy	Mild
* Kidney	Pelvis	Inflammation	Minimal
		Nephropathy	Mild
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Mild
* Liver		Basophilic Focus	
	Bile Duct	Hyperplasia	Minimal
* Lung		Fibrosis	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Minimal
	[ Infiltration Cellular TGLs = 3-4+5 ]		
* Mammary Gland		Fibroadenoma	
	[ Fibroadenoma TGLs = 1-14 ]		
Mesentery	Fat	Necrosis	Minimal
	[ Necrosis TGLs = 4-15 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Transit Epithe	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 310

**TRT#:** 4

**SEX:** Female

**DAY ON TEST:** 731

**DOSE:** 10 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60530

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Ovary		Inflammation	Suppurative, Minimal
[ Cyst TGLs = 2-9 ]		Cyst	Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
[ Hyperplasia TGLs = 5-10 ]			
* Thymus		Atrophy	Mild
* Thyroid Gland	C Cell	Hyperplasia	Mild

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**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 311

**TRT#:** 4

**SEX:** Female

**DAY ON TEST:** 674

**DOSE:** 10 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60531

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Clitoral Gland	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Ovary	* Pancreas	* Parathyroid Gland	* Salivary Glands
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Trachea
* Urinary Bladder	* Uterus		

**OBSERVATIONS**

* Adrenal Cortex		Angiectasis	Moderate
* Brain		Compression	Mild
* Kidney	Renal Tubule	Hyperplasia	Minimal
* Larynx	Epiglottis	Metaplasia	Squamous, Minimal
* Liver		Basophilic Focus	
		Cholangioma	
	[ Cholangioma TGLs = 3-6 ]		
* Lung		Fibrosis	Minimal
	Alveolar Epith	Hyperplasia	Minimal
	Alv/Bron Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Minimal
	[ Infiltration Cellular TGLs = 5-4+5 ]		
* Mammary Gland		Fibroadenoma	
	[ Fibroadenoma TGLs = 1-15+16 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Adenoma	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 311

**TRT#:** 4

**SEX:** Female

**DAY ON TEST:** 674

**DOSE:** 10 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60531

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Adenoma TGLs = 4-10 ]			
* Spleen		Hematopoietic Cell Proliferation	Minimal
[ Hematopoietic Cell Proliferation TGLs = 2-14 ]			
* Thymus		Atrophy	Mild
* Thyroid Gland	Follicle	Hyperplasia	Minimal
	C Cell	Hyperplasia	Moderate

---

PRIMARY CAUSE OF DEATH - Pituitary Gland Pars Distalis Adenoma

CONTRIBUTORY CAUSE OF DEATH - Mammary Gland Fibroadenoma

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 312

TRT#: 4

SEX: Female

DAY ON TEST: 713

DOSE: 10 mg/m3

DISP: Natural Death

HISTO: 60532

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex          | * Adrenal Medulla           | Blood Vessel             | * Bone                     |
| * Bone Marrow             | * Clitoral Gland            | * Esophagus              | * Eye                      |
| * Harderian Gland         | * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic      | * Liver                     | * Lung                   | * Lymph Node, Mandibular   |
| * Lymph Node, Mediastinal | * Lymph Node, Mesenteric    | * Ovary                  | * Pancreas                 |
| * Salivary Glands         | * Skin                      | * Spleen                 | * Stomach, Forestomach     |
| * Stomach, Glandular      | * Thymus                    | * Trachea                | * Urinary Bladder          |
| * Uterus                  |                             |                          |                            |

**MISSING**

- |                         |                     |
|-------------------------|---------------------|
| * Lymph Node, Bronchial | * Parathyroid Gland |
|-------------------------|---------------------|

**OBSERVATIONS**

- |                   |                               |                               |                      |
|-------------------|-------------------------------|-------------------------------|----------------------|
| * Brain           |                               | Compression                   | Moderate             |
| * Kidney          |                               | Hydronephrosis                | Mild                 |
|                   | Pelvis                        | Inflammation                  | Minimal              |
|                   | [ Hydronephrosis TGLs = 2-7 ] |                               |                      |
| * Larynx          | Epiglottis                    | Hyperplasia                   | Squamous, Mild       |
|                   |                               | Infiltration Cellular         | Mixed Cell, Minimal  |
|                   | Epiglottis                    | Metaplasia                    | Squamous, Mild       |
| * Mammary Gland   | Duct                          | Cyst                          | Mild                 |
| * Nose            | Olfactory Epi                 | Accumulation, Hyaline Droplet | Mild                 |
|                   | Respirat Epith                | Accumulation, Hyaline Droplet | Minimal              |
|                   | Glands, Olfactory Epi         | Hyperplasia                   | Minimal              |
|                   | Transit Epithe                | Hyperplasia                   | Minimal              |
|                   |                               | Inflammation                  | Suppurative, Minimal |
|                   | Transit Epithe                | Metaplasia                    | Squamous, Minimal    |
| * Pituitary Gland | Pars Distalis                 | Adenoma                       |                      |
|                   | [ Adenoma TGLs = 1-10 ]       |                               |                      |
| * Thyroid Gland   | C Cell                        | Hyperplasia                   | Mild                 |

PRIMARY CAUSE OF DEATH - Pituitary Gland Pars Distalis Adenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 313

TRT#: 4

SEX: Female

DAY ON TEST: 731

DOSE: 10 mg/m3

DISP: Terminal Sacrifice

HISTO: 60533

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Lymph Node, Bronchial	* Lymph Node, Mandibular
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Ovary
* Pancreas	* Parathyroid Gland	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Trachea	* Urinary Bladder	* Uterus	

OBSERVATIONS

* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Metaplasia	Squamous, Minimal
* Liver		Angiectasis	Minimal
		Basophilic Focus	
		Clear Cell Focus	
		Eosinophilic Focus	
	[ Eosinophilic Focus TGLs = 1-14 ]		
* Lung	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Mild
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
	Pars Intermed	Hyperplasia	Minimal
* Thyroid Gland	C Cell	Hyperplasia	Mild

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 314

TRT#: 4

SEX: Female

DAY ON TEST: 732

DOSE: 10 mg/m3

DISP: Terminal Sacrifice

HISTO: 60534

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                            |                           |                             |
|--------------------------|----------------------------|---------------------------|-----------------------------|
| * Adrenal Medulla        | Blood Vessel               | * Bone                    | * Bone Marrow               |
| * Brain                  | * Esophagus                | * Eye                     | * Harderian Gland           |
| * Intestine Large, Cecum | * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum |
| * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic      | * Lymph Node, Mandibular    |
| * Lymph Node, Mesenteric | * Mammary Gland            | * Ovary                   | * Pancreas                  |
| * Salivary Glands        | * Skin                     | * Spleen                  | * Stomach, Forestomach      |
| * Stomach, Glandular     | * Thymus                   | * Trachea                 | * Urinary Bladder           |
| * Uterus                 |                            |                           |                             |

MISSING

- |                         |                     |
|-------------------------|---------------------|
| * Lymph Node, Bronchial | * Parathyroid Gland |
|-------------------------|---------------------|

OBSERVATIONS

- |                           |  |                               |                         |
|---------------------------|--|-------------------------------|-------------------------|
| * Adrenal Cortex          |  | Angiectasis                   | Mild                    |
| * Clitoral Gland          |  | Inflammation                  | Minimal                 |
| * Heart                   |  | Cardiomyopathy                | Minimal                 |
| * Kidney                  | Pelvis                                     | Inflammation                  | Minimal                 |
|                           |  | Nephropathy                   | Minimal                 |
| * Larynx                  | Epiglottis                                 | Hyperplasia                   | Squamous, Mild          |
|                           | Epiglottis                                 | Metaplasia                    | Squamous, Minimal       |
| * Liver                   |  | Basophilic Focus              |                         |
| * Lung                    |  | Infiltration Cellular         | Histiocyte, Minimal     |
|                           |  | Inflammation                  | Chronic Active, Minimal |
|                           | [ Infiltration Cellular TGLs = 2,3,4-4+5 ] |                               |                         |
| * Lymph Node, Mediastinal |  | Hyperplasia                   | Lymphohistiocy, Minimal |
| * Nose                    | Olfactory Epi                              | Accumulation, Hyaline Droplet | Mild                    |
|                           | Respirat Epith                             | Accumulation, Hyaline Droplet | Minimal                 |
|                           | Goblet Cell                                | Hyperplasia                   | Minimal                 |
|                           | Glands, Olfactory Epi                      | Hyperplasia                   | Minimal                 |
|                           |  | Inflammation                  | Suppurative, Minimal    |
| * Pituitary Gland         | Pars Distalis                              | Adenoma                       |                         |
|                           | [ Adenoma TGLs = 1-10 ]                    |                               |                         |

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 314

**TRT#:** 4

**SEX:** Female

**DAY ON TEST:** 732

**DOSE:** 10 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60534

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

\* Thyroid Gland

C Cell  
Follicle

Hyperplasia  
Hyperplasia

Moderate  
Mild

---

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 315

TRT#: 4

SEX: Female

DAY ON TEST: 603

DOSE: 10 mg/m3

DISP: Moribund Sacrifice

HISTO: 60535

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Ovary	* Pancreas	* Parathyroid Gland
* Salivary Glands	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Trachea	* Urinary Bladder	* Uterus	

OBSERVATIONS

* Brain		Compression	Marked
		Hydrocephalus	Mild
* Kidney	Transit Epithe	Carcinoma	
	[ Carcinoma TGLs = 5-16+17+18 ]		
* Larynx	Epiglottis	Metaplasia	Squamous, Minimal
* Liver		Clear Cell Focus	
* Lung		Carcinoma	Metastatic (Kidney)
		Fibrosis	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Minimal
	Alveolus	Proteinosis	Minimal
	[ Carcinoma TGLs = 6-14 ]		
	[ Infiltration Cellular TGLs = 7-4+5 ]		
* Mammary Gland	Duct	Cyst	Minimal
	[ Cyst TGLs = 1-15 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Adenoma	
	[ Adenoma TGLs = 3-10 ]		

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 315

**TRT#:** 4

**SEX:** Female

**DAY ON TEST:** 603

**DOSE:** 10 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60535

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

* Spleen		Hematopoietic Cell Proliferation	Mild
	[ Hematopoietic Cell Proliferation TGLs = 4-6 ]		
* Thymus		Atrophy	Mild
* Thyroid Gland	C Cell	Hyperplasia	Minimal

---

**PRIMARY CAUSE OF DEATH** - Pituitary Gland Pars Distalis Adenoma

---

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 316

TRT#: 4

SEX: Female

DAY ON TEST: 732

DOSE: 10 mg/m3

DISP: Terminal Sacrifice

HISTO: 60536

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Ovary	* Pancreas	* Parathyroid Gland	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Trachea	* Urinary Bladder	* Uterus

**MISSING**

\* Lymph Node, Bronchial

**OBSERVATIONS**

* Adrenal Cortex		Angiectasis	Minimal
		Hypertrophy	Minimal
		Vacuolization Cytoplasmic	Minimal
* Clitoral Gland		Inflammation	Minimal
* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
	Epiglottis	Metaplasia	Squamous, Mild
* Liver		Basophilic Focus	
* Lung		Fibrosis	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Minimal
	Alveolar Epith	Metaplasia	Squamous, Minimal
	[ Infiltration Cellular TGLs = 2-4+5 ]		
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Adenoma	
	[ Adenoma TGLs = 1-10 ]		

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 316

**TRT#:** 4

**SEX:** Female

**DAY ON TEST:** 732

**DOSE:** 10 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60536

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

\* Thyroid Gland

C Cell

Hyperplasia

Minimal

---

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 317

TRT#: 4

SEX: Female

DAY ON TEST: 654

DOSE: 10 mg/m3

DISP: Moribund Sacrifice

HISTO: 60537

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Clitoral Gland	* Esophagus	* Eye	* Harderian Gland
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Ovary	* Pancreas	* Parathyroid Gland
* Salivary Glands	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Trachea	* Urinary Bladder	* Uterus

**OBSERVATIONS**

* Adrenal Cortex		Hypertrophy	Minimal
		Vacuolization Cytoplasmic	Minimal
* Brain		Compression	Moderate
		Hydrocephalus	Moderate
* Heart		Cardiomyopathy	Minimal
* Larynx	Epiglottis	Metaplasia	Squamous, Minimal
* Liver		Basophilic Focus	
* Lung		Fibrosis	Minimal
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Minimal
	Alveolus	Proteinosis	Minimal
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Adenoma	
	[ Adenoma TGLs = 2-10 ]		
* Thymus		Atrophy	Mild
* Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH - Pituitary Gland Pars Distalis Adenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 318

TRT#: 4

SEX: Female

DAY ON TEST: 731

DOSE: 10 mg/m3

DISP: Terminal Sacrifice

HISTO: 60538

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Mammary Gland	* Pancreas
* Parathyroid Gland	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Trachea
* Urinary Bladder	* Uterus		

OBSERVATIONS

* Adrenal Cortex		Angiectasis	Mild
* Heart		Cardiomyopathy	Minimal
* Kidney	Pelvis	Inflammation	Mild
* Larynx	Epiglottis	Metaplasia	Squamous, Minimal
* Liver		Basophilic Focus	
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Minimal
	[ Infiltration Cellular TGLs = 2-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Minimal
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Ovary		Cyst	Mild
	[ Cyst TGLs = 1-9 ]		
* Pituitary Gland	Pars Distalis	Hyperplasia	Moderate
	[ Hyperplasia TGLs = 3-10 ]		

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 318

**TRT#:** 4

**SEX:** Female

**DAY ON TEST:** 731

**DOSE:** 10 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60538

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

\* Thyroid Gland

C Cell

Hyperplasia

Moderate

---

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 319

**TRT#:** 4

**SEX:** Female

**DAY ON TEST:** 733

**DOSE:** 10 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60539

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Trachea	* Urinary Bladder	* Uterus

**OBSERVATIONS**

* Clitoral Gland		Inflammation	Minimal
* Kidney	Renal Tubule	Cyst	Mild
		Hydronephrosis	Mild
	Pelvis	Inflammation	Minimal
		Nephropathy	Minimal
	[ Cyst TGLs = 5-7 ]		
	[ Hydronephrosis TGLs = 6-7 ]		
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
	Epiglottis	Metaplasia	Squamous, Mild
* Liver		Basophilic Focus	
		Clear Cell Focus	
	Bile Duct	Hyperplasia	Minimal
* Lung		Fibrosis	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Minimal
	Alveolus	Proteinosis	Minimal
	[ Infiltration Cellular TGLs = 2,3-4+5 ]		
* Mammary Gland		Adenoma	
		Carcinoma	
	[ Carcinoma TGLs = 1-14 ]		

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 319

**TRT#:** 4

**SEX:** Female

**DAY ON TEST:** 733

**DOSE:** 10 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60539

**ORGAN AND ACCOUNTABLE SITE STATUS**

* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Transit Epithe	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Ovary		Cyst	Mild
	[ Cyst TGLs = 7-9 ]		
* Pituitary Gland	Pars Distalis	Adenoma	
		Cyst	Minimal
	[ Adenoma TGLs = 4-10 ]		
* Thyroid Gland	C Cell	Hyperplasia	Mild

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 320

TRT#: 4

SEX: Female

DAY ON TEST: 725

DOSE: 10 mg/m3

DISP: Moribund Sacrifice

HISTO: 60540

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Pancreas	* Salivary Glands	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Trachea
* Urinary Bladder	* Uterus		

OBSERVATIONS

* Heart		Cardiomyopathy	Minimal
* Kidney	Pelvis	Inflammation	Mild
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
	Epiglottis	Metaplasia	Squamous, Mild
* Liver		Angiectasis	Minimal
		Basophilic Focus	
		Clear Cell Focus	
	[ Angiectasis TGLs = 6-14 ]		
* Lung		Infiltration Cellular	Histiocyte, Minimal
* Mammary Gland		Carcinoma	Multiple
	[ Carcinoma TGLs = 2,3-15+16 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Ovary		Cyst	Minimal
	[ Cyst TGLs = 4-9 ]		
* Parathyroid Gland		Fibrosis	Minimal
* Pituitary Gland	Pars Distalis	Adenoma	
	Pars Distalis	Hyperplasia	Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 320

**TRT#:** 4

**SEX:** Female

**DAY ON TEST:** 725

**DOSE:** 10 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60540

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Adenoma TGLs = 1-10 ]

\* Spleen

Hematopoietic Cell Proliferation

Mild

[ Hematopoietic Cell Proliferation TGLs = 5-6 ]

\* Thyroid Gland

C Cell

Hyperplasia

Mild

---

**PRIMARY CAUSE OF DEATH** - Mammary Gland Carcinoma

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 321

TRT#: 4

SEX: Female

DAY ON TEST: 731

DOSE: 10 mg/m3

DISP: Terminal Sacrifice

HISTO: 60541

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex          | * Adrenal Medulla           | Blood Vessel             | * Bone                     |
| * Bone Marrow             | * Brain                     | * Esophagus              | * Eye                      |
| * Harderian Gland         | * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic      | * Lymph Node, Mandibular    | * Lymph Node, Mesenteric | * Mammary Gland            |
| * Pancreas                | * Parathyroid Gland         | * Salivary Glands        | * Skin                     |
| * Spleen                  | * Stomach, Forestomach      | * Stomach, Glandular     | * Trachea                  |
| * Urinary Bladder         |                             |                          |                            |

OBSERVATIONS

- |                           |  |                               |                         |
|---------------------------|--|-------------------------------|-------------------------|
| * Clitoral Gland          |  | Squamous Cell Papilloma       |                         |
|                           | [ Squamous Cell Papilloma TGLs = 2-9 ] |                               |                         |
| * Kidney                  | Pelvis                                 | Inflammation                  | Minimal                 |
| * Larynx                  | Epiglottis                             | Hyperplasia                   | Squamous, Mild          |
|                           | Epiglottis                             | Metaplasia                    | Squamous, Mild          |
| * Liver                   |  | Clear Cell Focus              |                         |
|                           |  | Inflammation                  | Granulomatous, Minimal  |
|                           |  | Mixed Cell Focus              |                         |
| * Lung                    |  | Fibrosis                      | Minimal                 |
|                           | Alveolar Epith                         | Hyperplasia                   | Minimal                 |
|                           |  | Infiltration Cellular         | Histiocyte, Minimal     |
|                           |  | Inflammation                  | Chronic Active, Minimal |
| * Lymph Node, Bronchial   |  | Hyperplasia                   | Lymphohistiocy, Minimal |
| * Lymph Node, Mediastinal |  | Hyperplasia                   | Lymphohistiocy, Mild    |
| * Nose                    | Olfactory Epi                          | Accumulation, Hyaline Droplet | Mild                    |
|                           | Respirat Epith                         | Accumulation, Hyaline Droplet | Mild                    |
|                           | Goblet Cell                            | Hyperplasia                   | Minimal                 |
|                           | Glands, Olfactory Epi                  | Hyperplasia                   | Minimal                 |
|                           |  | Inflammation                  | Suppurative, Minimal    |
| * Ovary                   |  | Cyst                          | Mild                    |
|                           | [ Cyst TGLs = 3,4-9 ]                  |                               |                         |

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 321

**TRT#:** 4

**SEX:** Female

**DAY ON TEST:** 731

**DOSE:** 10 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60541

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Pituitary Gland [ Adenoma TGLs = 1-10 ]	Pars Distalis	Adenoma	
* Thymus		Atrophy	Minimal
* Thyroid Gland	C Cell	Hyperplasia	Mild
* Uterus [ Hyperplasia TGLs = 5-10 ]	Endometrium	Hyperplasia	Cystic, Mild

---

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 322

TRT#: 4

SEX: Female

DAY ON TEST: 731

DOSE: 10 mg/m3

DISP: Moribund Sacrifice

HISTO: 60542

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Mammary Gland
* Ovary	* Pancreas	* Parathyroid Gland	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder
* Uterus			

MISSING

\* Lymph Node, Bronchial

OBSERVATIONS

* Brain		Compression	Moderate
		Hydrocephalus	Mild
* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Metaplasia	Squamous, Mild
* Liver		Angiectasis	Minimal
		Eosinophilic Focus	
	[ Angiectasis TGLs = 6-14 ]		
	[ Eosinophilic Focus TGLs = 7,8-15+16 ]		
* Lung	BALT	Hyperplasia	Lymphohistiocy, Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Minimal
	[ Infiltration Cellular TGLs = 3-4 ]		
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

---

**ANIMAL ID:** 322

**TRT#:** 4

**SEX:** Female

**DAY ON TEST:** 731

**DOSE:** 10 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60542

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

\* Pituitary Gland

Pars Distalis

Adenoma

[ Adenoma TGLs = 5-10 ]

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PRIMARY CAUSE OF DEATH

- Pituitary Gland Pars Distalis Adenoma

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**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 323

**TRT#:** 4

**SEX:** Female

**DAY ON TEST:** 586

**DOSE:** 10 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60543

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Brain
* Clitoral Gland	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Liver	* Lymph Node, Bronchial
* Lymph Node, Mandibular	* Mammary Gland	* Ovary	* Parathyroid Gland
* Pituitary Gland	* Salivary Glands	* Trachea	* Uterus

**OBSERVATIONS**

* Adrenal Cortex		Vacuolization Cytoplasmic	Minimal
* Bone Marrow		Neoplasm Nos	
	[ Neoplasm Nos TGLs = 3-14 ]		
* Intestine Large, Cecum		Neoplasm Nos	
* Intestine Large, Colon		Neoplasm Nos	
* Kidney		Neoplasm Nos	
	[ Neoplasm Nos TGLs = 10-7 ]		
* Larynx	Epiglottis	Metaplasia	Squamous, Minimal
* Lung		Fibrosis	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Minimal
		Neoplasm Nos	
	[ Infiltration Cellular TGLs = 4-4+5 ]		
* Lymph Node, Mediastinal		Neoplasm Nos	
	[ Neoplasm Nos TGLs = 5,6-3+7 ]		
* Lymph Node, Mesenteric		Neoplasm Nos	
Mesentery		Neoplasm Nos	
	[ Neoplasm Nos TGLs = 9-16 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal
* Pancreas		Neoplasm Nos	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 323

**TRT#:** 4

**SEX:** Female

**DAY ON TEST:** 586

**DOSE:** 10 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60543

**ORGAN AND ACCOUNTABLE SITE STATUS**

[ Neoplasm Nos TGLs = 8-15 ]			
* Skin	Subcut Tiss	Neoplasm Nos	
[ Neoplasm Nos TGLs = 7-17+18 ]			
* Spleen		Hematopoietic Cell Proliferation	Minimal
* Stomach, Forestomach		Neoplasm Nos	
* Stomach, Glandular		Neoplasm Nos	
* Thymus		Atrophy	Moderate
* Thyroid Gland	C Cell	Hyperplasia	Minimal
* Urinary Bladder		Neoplasm Nos	

**PRIMARY CAUSE OF DEATH** - Bone Marrow Neoplasm Nos

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 324

TRT#: 4

SEX: Female

DAY ON TEST: 492

DOSE: 10 mg/m3

DISP: Moribund Sacrifice

HISTO: 60544

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Liver	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Ovary	* Pancreas	* Parathyroid Gland
* Salivary Glands	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Trachea	* Urinary Bladder	* Uterus

**OBSERVATIONS**

* Brain		Compression	Marked
		Hydrocephalus	Moderate
* Clitoral Gland		Inflammation	Minimal
* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Metaplasia	Squamous, Minimal
* Lung	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Minimal
	[ Infiltration Cellular TGLs = 2-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Mild
* Pituitary Gland	Pars Distalis	Adenoma	
	[ Adenoma TGLs = 1-10 ]		
* Spleen	Lymph Follic	Atrophy	Minimal
* Thyroid Gland	C Cell	Hyperplasia	Minimal

PRIMARY CAUSE OF DEATH - Pituitary Gland Pars Distalis Adenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 325

TRT#: 4

SEX: Female

DAY ON TEST: 590

DOSE: 10 mg/m3

DISP: Moribund Sacrifice

HISTO: 60545

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Clitoral Gland	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Liver	* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Ovary	* Pancreas
* Parathyroid Gland	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Trachea
* Urinary Bladder	* Uterus		

**OBSERVATIONS**

* Adrenal Cortex		Angiectasis	Mild
* Brain		Compression	Marked
		Hydrocephalus	Mild
* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Metaplasia	Squamous, Minimal
* Lung		Fibrosis	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Mild
	[ Infiltration Cellular TGLs = 1-4+5 ]	Inflammation	Chronic Active, Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Adenoma	
	[ Adenoma TGLs = 2-10 ]		
* Thyroid Gland	C Cell	Hyperplasia	Minimal

PRIMARY CAUSE OF DEATH - Pituitary Gland Pars Distalis Adenoma

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 326

**TRT#:** 4

**SEX:** Female

**DAY ON TEST:** 733

**DOSE:** 10 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60546

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Clitoral Gland	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Ovary
* Pancreas	* Parathyroid Gland	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Trachea	* Urinary Bladder	* Uterus	

**OBSERVATIONS**

* Adrenal Cortex		Angiectasis	Minimal
* Brain		Compression	Mild
* Kidney	Pelvis	Inflammation	Mild
* Larynx	Epiglottis	Metaplasia	Squamous, Minimal
* Liver		Basophilic Focus	
	Bile Duct	Hyperplasia	Minimal
	[ Mixed Cell Focus TGLs = 1-14 ]	Mixed Cell Focus	
* Lung	Alveolar Epith	Hyperplasia	Minimal
	BALT	Hyperplasia	Lymphohistiocy, Minimal
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Minimal
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Minimal
* Mammary Gland		Carcinoma	
	[ Carcinoma TGLs = 2-14 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Adenoma	
	[ Adenoma TGLs = 3-10 ]		

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 326

**TRT#:** 4

**SEX:** Female

**DAY ON TEST:** 733

**DOSE:** 10 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60546

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* Thyroid Gland

C Cell

Hyperplasia

Mild

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**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 327

**TRT#:** 4

**SEX:** Female

**DAY ON TEST:** 635

**DOSE:** 10 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60547

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Esophagus	* Eye	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Liver
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Ovary
* Pancreas	* Parathyroid Gland	Peripheral Nerve	* Salivary Glands
Skeletal Muscle	* Skin	Spinal Cord	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Trachea
* Urinary Bladder	* Uterus		

**MISSING**

\* Lymph Node, Bronchial

**OBSERVATIONS**

* Adrenal Cortex		Vacuolization Cytoplasmic	Mild
* Brain		Compression	Marked
* Clitoral Gland		Inflammation	Mild
* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Metaplasia	Squamous, Minimal
* Lung		Fibrosis	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Minimal
	Alveolus	Proteinosis	Minimal
	[ Infiltration Cellular TGLs = 2-4+5 ]		
* Mammary Gland		Fibroadenoma	
	[ Fibroadenoma TGLs = 1-14 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
	Respirat Epith	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 327

**TRT#:** 4

**SEX:** Female

**DAY ON TEST:** 635

**DOSE:** 10 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60547

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Pituitary Gland [ Adenoma TGLs = 3-10 ]	Pars Distalis	Inflammation Adenoma	Suppurative, Minimal
* Thyroid Gland	Follicle C Cell	Hyperplasia Hyperplasia	Moderate Minimal

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**PRIMARY CAUSE OF DEATH** - Pituitary Gland Pars Distalis Adenoma

---

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 328

TRT#: 4

SEX: Female

DAY ON TEST: 638

DOSE: 10 mg/m3

DISP: Moribund Sacrifice

HISTO: 60548

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Esophagus	* Eye	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Lymph Node, Bronchial
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Pancreas	* Parathyroid Gland	Peripheral Nerve	* Salivary Glands
Skeletal Muscle	* Skin	Spinal Cord	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Trachea
* Urinary Bladder			

MISSING

\* Clitoral Gland

OBSERVATIONS

* Adrenal Cortex		Vacuolization Cytoplasmic	Minimal
* Brain		Compression	Marked
		Hydrocephalus	Mild
* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Metaplasia	Squamous, Minimal
* Liver		Basophilic Focus	
* Lung		Fibrosis	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Minimal
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Ovary		Cyst	Mild
	[ Cyst TGLs = 3,4-9 ]		
* Pituitary Gland	Pars Distalis	Adenoma	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 328

**TRT#:** 4

**SEX:** Female

**DAY ON TEST:** 638

**DOSE:** 10 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60548

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Adenoma TGLs = 2-10 ]			
* Thyroid Gland	C Cell	Hyperplasia	Mild
* Uterus	Endometrium	Hyperplasia	Cystic, Minimal
[ Hyperplasia TGLs = 5-10 ]			

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**PRIMARY CAUSE OF DEATH** - Pituitary Gland Pars Distalis Adenoma

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 329

TRT#: 4

SEX: Female

DAY ON TEST: 732

DOSE: 10 mg/m3

DISP: Terminal Sacrifice

HISTO: 60549

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Ovary	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Trachea	* Urinary Bladder	* Uterus	

OBSERVATIONS

* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Minimal
* Liver		Basophilic Focus	
		Clear Cell Focus	
* Lung		Fibrosis	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Minimal
	Alveolus	Proteinosis	Minimal
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Thyroid Gland	C Cell	Hyperplasia	Mild

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 330

TRT#: 4

SEX: Female

DAY ON TEST: 663

DOSE: 10 mg/m3

DISP: Moribund Sacrifice

HISTO: 60550

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Bronchial	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Ovary	* Pancreas	* Salivary Glands
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Trachea	* Urinary Bladder		

MISSING

* Lymph Node, Mandibular	* Parathyroid Gland
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OBSERVATIONS

* Brain		Compression	Moderate
		Hydrocephalus	Mild
* Kidney		Infarct	Minimal
	Pelvis	Inflammation	Minimal
	[ Infarct TGLs = 8-7 ]		
* Larynx	Epiglottis	Metaplasia	Squamous, Minimal
* Liver		Clear Cell Focus	
	[ Clear Cell Focus TGLs = 7-6 ]		
* Lung		Fibrosis	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Minimal
	[ Infiltration Cellular TGLs = 4-4+5 ]		
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Hyperplasia	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
	Transit Epithe	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 330

**TRT#:** 4

**SEX:** Female

**DAY ON TEST:** 663

**DOSE:** 10 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60550

**ORGAN AND ACCOUNTABLE SITE STATUS**

* Pituitary Gland	Pars Distalis	Inflammation Adenoma	Suppurative, Minimal
[ Adenoma TGLs = 5-10 ]			
* Skin		Inflammation	Minimal
[ Inflammation TGLs = 3-14 ]			
* Thyroid Gland	C Cell	Hyperplasia	Mild
* Uterus	Endometrium	Hyperplasia	Cystic, Mild
[ Hyperplasia TGLs = 6-10 ]			

**PRIMARY CAUSE OF DEATH** - Pituitary Gland Pars Distalis Adenoma

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 331

TRT#: 4

SEX: Female

DAY ON TEST: 733

DOSE: 10 mg/m3

DISP: Terminal Sacrifice

HISTO: 60551

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Ovary	* Pancreas	* Parathyroid Gland
* Salivary Glands	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Trachea	* Urinary Bladder

OBSERVATIONS

* Adrenal Cortex		Angiectasis	Minimal
* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
	Epiglottis	Metaplasia	Squamous, Minimal
* Liver		Basophilic Focus	
* Lung	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Minimal
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Mild
* Pituitary Gland	Pars Distalis	Adenoma	
	Pars Distalis	Hyperplasia	Minimal
* Thyroid Gland	C Cell	Hyperplasia	Mild
* Uterus	Endometrium	Hyperplasia	Cystic, Minimal

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 332

TRT#: 4

SEX: Female

DAY ON TEST: 732

DOSE: 10 mg/m3

DISP: Terminal Sacrifice

HISTO: 60552

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Mammary Gland	* Pancreas	* Parathyroid Gland	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Trachea	* Urinary Bladder	* Uterus	

OBSERVATIONS

* Adrenal Cortex		Angiectasis	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
	Epiglottis	Metaplasia	Squamous, Minimal
* Liver		Basophilic Focus	
* Lung		Fibrosis	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Minimal
	Alveolus	Proteinosis	Minimal
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Mild
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Transit Epithe	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
	Transit Epithe	Metaplasia	Squamous, Minimal
* Ovary		Cyst	Minimal
	[ Cyst TGLs = 3-9 ]		
* Pituitary Gland	Pars Distalis	Hyperplasia	Mild

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 332

**TRT#:** 4

**SEX:** Female

**DAY ON TEST:** 732

**DOSE:** 10 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60552

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Hyperplasia TGLs = 2-10 ]

\* Thymus

Atrophy

Minimal

\* Thyroid Gland

C Cell

Hyperplasia

Mild

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**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 333

**TRT#:** 4

**SEX:** Female

**DAY ON TEST:** 731

**DOSE:** 10 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60553

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Clitoral Gland	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Pancreas	* Parathyroid Gland	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Trachea
* Urinary Bladder	* Uterus		

**MISSING**

\* Lymph Node, Bronchial

**OBSERVATIONS**

* Adrenal Cortex		Angiectasis	Minimal
* Brain		Compression	Moderate
* Kidney		Infarct	Mild
	Pelvis	Inflammation	Minimal
		Nephropathy	Minimal
	[ Infarct TGLs = 3-7 ]		
* Larynx		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Minimal
* Liver		Basophilic Focus	
* Lung		Fibrosis	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Minimal
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
	Transit Epithe	Hyperplasia	Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 333

**TRT#:** 4

**SEX:** Female

**DAY ON TEST:** 731

**DOSE:** 10 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60553

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Ovary [ Cyst TGLs = 4-9 ]	Transit Epithe	Inflammation Metaplasia Cyst	Suppurative, Minimal Squamous, Mild Minimal
* Pituitary Gland [ Adenoma TGLs = 2-10 ]	Pars Distalis	Adenoma	
* Thymus		Thymoma Benign	
* Thyroid Gland	C Cell	Hyperplasia	Moderate

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 334

TRT#: 4

SEX: Female

DAY ON TEST: 732

DOSE: 10 mg/m3

DISP: Terminal Sacrifice

HISTO: 60554

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Esophagus	* Eye	* Harderian Gland
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Lymph Node, Mandibular
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Ovary	* Pancreas
* Parathyroid Gland	* Salivary Glands	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Trachea	* Urinary Bladder	

OBSERVATIONS

* Adrenal Cortex		Angiectasis	Minimal
* Clitoral Gland		Inflammation	Minimal
* Heart		Cardiomyopathy	Minimal
* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
	Epiglottis	Metaplasia	Squamous, Minimal
* Liver		Clear Cell Focus	
	Bile Duct	Hyperplasia	Minimal
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Mild
	Alveolus	Inflammation	Chronic Active, Minimal
* Lymph Node, Bronchial		Proteinosis	Minimal
* Mammary Gland		Hyperplasia	Lymphohistiocy, Minimal
	[ Fibroadenoma TGLs = 1,3-14+15+18 ]	Fibroadenoma	Multiple
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 334

**TRT#:** 4

**SEX:** Female

**DAY ON TEST:** 732

**DOSE:** 10 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60554

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Pituitary Gland	Pars Distalis	Adenoma	
[ Adenoma TGLs = 5-10 ]			
* Skin	Subcut Tiss	Lipoma	
[ Lipoma TGLs = 2,4-16+17+19 ]			
* Spleen		Hematopoietic Cell Proliferation	Minimal
* Thyroid Gland	C Cell	Hyperplasia	Mild
* Uterus	Endometrium	Hyperplasia	Cystic, Mild
[ Hyperplasia TGLs = 6,7,8-10+18+20 ]			

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 335

TRT#: 4

SEX: Female

DAY ON TEST: 596

DOSE: 10 mg/m3

DISP: Moribund Sacrifice

HISTO: 60555

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Clitoral Gland	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Liver	* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Ovary	* Pancreas	* Salivary Glands
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

**MISSING**

\* Parathyroid Gland

**OBSERVATIONS**

* Adrenal Cortex		Angiectasis	Minimal
* Brain		Compression	Marked
* Kidney	Pelvis	Inflammation	Minimal
* Larynx		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Minimal
* Lung	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Minimal
	[ Infiltration Cellular TGLs = 3-4+5 ]		
* Mammary Gland	Duct	Cyst	Minimal
	[ Cyst TGLs = 2-14 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild
		Inflammation	Suppurative, Mild
* Pituitary Gland	Pars Distalis	Adenoma	
	[ Adenoma TGLs = 1-10 ]		
* Spleen	Lymph Follic	Atrophy	Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 335

**TRT#:** 4

**SEX:** Female

**DAY ON TEST:** 596

**DOSE:** 10 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60555

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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PRIMARY CAUSE OF DEATH - Pituitary Gland Pars Distalis Adenoma

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**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 336

**TRT#:** 4

**SEX:** Female

**DAY ON TEST:** 732

**DOSE:** 10 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60556

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Ovary
* Pancreas	* Parathyroid Gland	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Trachea
* Urinary Bladder			

**OBSERVATIONS**

* Adrenal Cortex		Hypertrophy	Mild
		Vacuolization Cytoplasmic	Mild
* Clitoral Gland		Inflammation	Minimal
* Kidney	Pelvis	Inflammation	Minimal
* Larynx		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Minimal
* Liver		Basophilic Focus	
		Clear Cell Focus	
	Bile Duct	Dilatation	Marked
	[ Dilatation TGLs = 3-14 ]		
* Lung		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Minimal
	Alveolar Epith	Metaplasia	Squamous, Mild
	Alveolus	Proteinosis	Minimal
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Minimal
* Mammary Gland	Duct	Cyst	Minimal
	[ Cyst TGLs = 2-14 ]		

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 336

**TRT#:** 4

**SEX:** Female

**DAY ON TEST:** 732

**DOSE:** 10 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60556

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal
	Transit Epithe	Hyperplasia	Minimal
	Transit Epithe	Metaplasia	Squamous, Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Mild
* Thymus		Atrophy	Marked
* Thyroid Gland	C Cell	Hyperplasia	Mild
* Uterus		Adenoma	
	Endometrium	Hyperplasia	Cystic, Minimal

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 337

TRT#: 4

SEX: Female

DAY ON TEST: 346

DOSE: 10 mg/m3

DISP: Moribund Sacrifice

HISTO: 60557

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Liver	* Lymph Node, Mandibular
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Ovary	* Pancreas
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thyroid Gland	* Trachea	* Urinary Bladder	* Uterus

MISSING

* Lymph Node, Bronchial	* Thymus
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OBSERVATIONS

* Brain		Compression	Marked
		Hydrocephalus	Mild
* Larynx	Epiglottis	Metaplasia	Squamous, Mild
* Lung		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Minimal
* Mammary Gland	Duct	Cyst	Minimal
[ Cyst TGLs = 2-14 ]			
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
* Parathyroid Gland		Fibrosis	Mild
* Pituitary Gland	Pars Distalis	Adenoma	
[ Adenoma TGLs = 1-10 ]			
* Salivary Glands	Sublingul GI	Inflammation	Mild

PRIMARY CAUSE OF DEATH - Pituitary Gland Pars Distalis Adenoma

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 338

TRT#: 4

SEX: Female

DAY ON TEST: 732

DOSE: 10 mg/m3

DISP: Terminal Sacrifice

HISTO: 60558

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Esophagus	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Lymph Node, Bronchial
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Ovary
* Pancreas	* Parathyroid Gland	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Trachea	* Urinary Bladder	* Uterus	

**MISSING**

\* Lymph Node, Mandibular

**OBSERVATIONS**

* Adrenal Cortex	Zona Fascult	Atrophy	Mild
* Clitoral Gland		Inflammation	Mild
	[ Inflammation TGLs = 3-9 ]		
* Eye	Retina	Atrophy	Mild
* Kidney	Pelvis	Inflammation	Mild
* Larynx		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Minimal
* Liver		Angiectasis	Minimal
		Basophilic Focus	
		Eosinophilic Focus	
	[ Eosinophilic Focus TGLs = 2-14 ]		
* Lung		Fibrosis	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Minimal
	[ Infiltration Cellular TGLs = 1-5 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 338

**TRT#:** 4

**SEX:** Female

**DAY ON TEST:** 732

**DOSE:** 10 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60558

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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	Respirat Epith	Hyperplasia	Minimal
		Inflammation	Suppurative, Mild
* Pituitary Gland	Pars Distalis	Adenoma	
* Thyroid Gland	Bilateral, C Cell	Adenoma	

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 339

TRT#: 4

SEX: Female

DAY ON TEST: 732

DOSE: 10 mg/m3

DISP: Terminal Sacrifice

HISTO: 60559

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Mammary Gland
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Trachea	* Urinary Bladder	* Uterus

OBSERVATIONS

* Adrenal Cortex		Angiectasis	Minimal
* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
	Epiglottis	Metaplasia	Squamous, Minimal
* Liver		Clear Cell Focus	
		Mixed Cell Focus	
	[ Mixed Cell Focus TGLs = 1-14 ]		
* Lung		Fibrosis	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Minimal
	Alveolus	Proteinosis	Minimal
	[ Infiltration Cellular TGLs = 2-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Mild
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Ovary		Granulosa Cell Tumor Benign	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 339

**TRT#:** 4

**SEX:** Female

**DAY ON TEST:** 732

**DOSE:** 10 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60559

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Granulosa Cell Tumor Benign TGLs = 3-9 ]  
\* Thyroid Gland C Cell

Hyperplasia

Mild

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 340

TRT#: 4

SEX: Female

DAY ON TEST: 732

DOSE: 10 mg/m3

DISP: Terminal Sacrifice

HISTO: 60560

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Trachea
* Urinary Bladder	* Uterus		

OBSERVATIONS

* Adrenal Cortex		Angiectasis	Mild
* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
	Epiglottis	Metaplasia	Squamous, Mild
* Liver		Basophilic Focus	
	Bile Duct	Hyperplasia	Minimal
* Lung		Fibrosis	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Minimal
	[ Infiltration Cellular TGLs = 2-4 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Minimal
* Mammary Gland		Fibroadenoma	
	[ Fibroadenoma TGLs = 1-14 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Ovary		Granulosa Cell Tumor Malignant	
	[ Granulosa Cell Tumor Malignant TGLs = 4-9 ]		

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 340

**TRT#:** 4

**SEX:** Female

**DAY ON TEST:** 732

**DOSE:** 10 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60560

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Pituitary Gland [ Adenoma TGLs = 3-10 ]	Pars Distalis	Adenoma	
* Thymus		Cyst	Minimal
* Thyroid Gland	C Cell	Hyperplasia	Minimal

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 341

TRT#: 4

SEX: Female

DAY ON TEST: 732

DOSE: 10 mg/m3

DISP: Terminal Sacrifice

HISTO: 60561

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Ovary	* Pancreas	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Trachea	* Urinary Bladder	* Uterus	

MISSING

\* Parathyroid Gland

OBSERVATIONS

* Adrenal Cortex		Angiectasis	Minimal
		Hypertrophy	Mild
		Vacuolization Cytoplasmic	Mild
* Larynx	Epiglottis	Metaplasia	Squamous, Mild
* Liver	Bile Duct	Clear Cell Focus	
		Hyperplasia	Minimal
		Inflammation	Granulomatous, Minimal
* Lung	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Minimal
	Alveolus	Proteinosis	Minimal
	[ Infiltration Cellular TGLs = 5-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Mild
* Mammary Gland		Fibroadenoma	Multiple
	[ Fibroadenoma TGLs = 1,2-15+16 ]		
Mesentery	Fat	Necrosis	Minimal
	[ Necrosis TGLs = 4-17 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 341

**TRT#:** 4

**SEX:** Female

**DAY ON TEST:** 732

**DOSE:** 10 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60561

**ORGAN AND ACCOUNTABLE SITE STATUS**

	Goblet Cell	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Adenoma	
[ Adenoma TGLs = 8-10 ]			
* Thymus		Thymoma Benign	
[ Thymoma Benign TGLs = 6-3 ]			
* Thyroid Gland	Follicle	Carcinoma	
	C Cell	Hyperplasia	Mild
[ Carcinoma TGLs = 3-3 ]			
Zymbal's Gland		Squamous Cell Papilloma	
[ Squamous Cell Papilloma TGLs = 7-14 ]			

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 342

TRT#: 4

SEX: Female

DAY ON TEST: 732

DOSE: 10 mg/m3

DISP: Terminal Sacrifice

HISTO: 60562

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Blood Vessel	* Bone	* Bone Marrow	* Brain
* Esophagus	* Eye	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney
* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Mammary Gland	* Pancreas
* Parathyroid Gland	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thyroid Gland	* Trachea
* Urinary Bladder			

**INSUFFICIENT TISSUE**

\* Lymph Node, Bronchial

**OBSERVATIONS**

* Adrenal Cortex		Angiectasis	Minimal
* Adrenal Medulla		Hyperplasia	Minimal
* Clitoral Gland		Inflammation	Mild
* Larynx	Epiglottis	Metaplasia	Squamous, Mild
* Liver		Basophilic Focus	
* Lung		Fibrosis	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Minimal
[ Infiltration Cellular TGLs = 2-4+5 ]			
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal
	Respirat Epith	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Ovary		Cyst	Minimal
[ Cyst TGLs = 1-9 ]			
* Pituitary Gland	Pars Distalis	Adenoma	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 342

**TRT#:** 4

**SEX:** Female

**DAY ON TEST:** 732

**DOSE:** 10 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60562

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Adenoma TGLs = 3-10 ]

\* Thymus

Thymoma Benign

\* Uterus

Endometrium

Hyperplasia

Cystic, Minimal

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 343

TRT#: 4

SEX: Female

DAY ON TEST: 733

DOSE: 10 mg/m3

DISP: Terminal Sacrifice

HISTO: 60563

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Ovary	* Pancreas	* Parathyroid Gland	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Trachea	* Urinary Bladder	* Uterus

OBSERVATIONS

* Adrenal Cortex		Angiectasis	Mild
* Clitoral Gland		Inflammation	Minimal
* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
	Epiglottis	Metaplasia	Squamous, Mild
* Liver		Basophilic Focus	
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Minimal
	Alveolar Epith	Metaplasia	Squamous, Minimal
	Alveolus	Proteinosis	Minimal
	[ Infiltration Cellular TGLs = 1,2,3-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Glands, Olfactory Epi	Hyperplasia	Mild
	Transit Epithe	Hyperplasia	Minimal
		Inflammation	Suppurative, Mild
* Pituitary Gland	Pars Distalis	Adenoma	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 343

**TRT#:** 4

**SEX:** Female

**DAY ON TEST:** 733

**DOSE:** 10 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60563

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Adenoma TGLs = 4-10 ]

\* Thyroid Gland

C Cell

Hyperplasia

Mild

---

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 344

TRT#: 4

SEX: Female

DAY ON TEST: 732

DOSE: 10 mg/m3

DISP: Terminal Sacrifice

HISTO: 60564

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Ovary	* Parathyroid Gland	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Trachea	* Urinary Bladder	* Uterus

INSUFFICIENT TISSUE

\* Lymph Node, Bronchial

OBSERVATIONS

* Adrenal Cortex		Angiectasis	Minimal
* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
	Epiglottis	Metaplasia	Squamous, Mild
* Liver		Clear Cell Focus	
* Lung	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Minimal
	[ Infiltration Cellular TGLs = 2-4+5 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
	Transit Epithe	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
	Transit Epithe	Metaplasia	Squamous, Minimal
* Pancreas	Acinus	Atrophy	Minimal
* Pituitary Gland	Pars Distalis	Adenoma	
	[ Adenoma TGLs = 1-10 ]		
* Thyroid Gland	C Cell	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 345

**TRT#:** 4

**SEX:** Female

**DAY ON TEST:** 731

**DOSE:** 10 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60565

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Ovary	* Pancreas	* Parathyroid Gland
* Salivary Glands	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Trachea	* Urinary Bladder

**INSUFFICIENT TISSUE**

\* Lymph Node, Bronchial

**OBSERVATIONS**

* Adrenal Cortex		Angiectasis	Mild
		Hypertrophy	Mild
		Vacuolization Cytoplasmic	Minimal
[ Hypertrophy TGLs = 2-7 ]			
* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Metaplasia	Squamous, Minimal
* Liver		Mixed Cell Focus	
* Lung		Fibrosis	Mild
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Minimal
[ Infiltration Cellular TGLs = 3-4+5 ]			
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
[ Hyperplasia TGLs = 1-10 ]			

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 345

**TRT#:** 4

**SEX:** Female

**DAY ON TEST:** 731

**DOSE:** 10 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60565

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

\* Thyroid Gland

Follicle

Carcinoma

\* Uterus

C Cell

Hyperplasia

Mild

Cervix

Hyperplasia

Minimal

[ Hyperplasia TGLs = 4-14 ]

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**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Metal working fluids (Trim VX)

**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014

**Time Report Requested:** 09:56:24

**First Dose M/F:** 07/20/09 / 07/20/09

**Lab:** BNW

**ANIMAL ID:** 346

**TRT#:** 4

**SEX:** Female

**DAY ON TEST:** 733

**DOSE:** 10 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60566

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

- |                             |                           |                            |                           |
|-----------------------------|---------------------------|----------------------------|---------------------------|
| * Adrenal Medulla           | Blood Vessel              | * Bone                     | * Bone Marrow             |
| * Brain                     | * Clitoral Gland          | * Esophagus                | * Eye                     |
| * Heart                     | * Intestine Large, Cecum  | * Intestine Large, Colon   | * Intestine Large, Rectum |
| * Intestine Small, Duodenum | * Intestine Small, Ileum  | * Intestine Small, Jejunum | * Islets, Pancreatic      |
| * Lymph Node, Mandibular    | * Lymph Node, Mediastinal | * Lymph Node, Mesenteric   | * Ovary                   |
| * Pancreas                  | * Parathyroid Gland       | * Salivary Glands          | * Skin                    |
| * Spleen                    | * Stomach, Forestomach    | * Stomach, Glandular       | * Trachea                 |
| * Urinary Bladder           | * Uterus                  |                            |                           |

**OBSERVATIONS**

- |                         |  |                               |                         |
|-------------------------|--|-------------------------------|-------------------------|
| * Adrenal Cortex        |  | Hyperplasia                   | Minimal                 |
| * Harderian Gland       |  | Inflammation                  | Minimal                 |
| * Kidney                | Pelvis                                     | Inflammation                  | Minimal                 |
| * Larynx                | Epiglottis                                 | Hyperplasia                   | Squamous, Minimal       |
|                         | Epiglottis                                 | Metaplasia                    | Squamous, Minimal       |
| * Liver                 |  | Basophilic Focus              |                         |
|                         |  | Clear Cell Focus              |                         |
| * Lung                  |  | Fibrosis                      | Minimal                 |
|                         | Alveolar Epith                             | Hyperplasia                   | Minimal                 |
|                         |  | Infiltration Cellular         | Histiocyte, Minimal     |
|                         |  | Inflammation                  | Chronic Active, Minimal |
|                         | [ Infiltration Cellular TGLs = 2,3,4-4+5 ] |                               |                         |
|                         | Lymph Node Lumbar                          | Hemangiosarcoma               |                         |
|                         | [ Hemangiosarcoma TGLs = 5-14 ]            |                               |                         |
| * Lymph Node, Bronchial |  | Hyperplasia                   | Lymphohistiocy, Minimal |
| * Mammary Gland         |  | Fibroadenoma                  |                         |
|                         | [ Fibroadenoma TGLs = 1-14 ]               |                               |                         |
| * Nose                  | Olfactory Epi                              | Accumulation, Hyaline Droplet | Moderate                |
|                         | Respirat Epith                             | Accumulation, Hyaline Droplet | Minimal                 |
|                         | Goblet Cell                                | Hyperplasia                   | Minimal                 |
|                         |  | Inflammation                  | Suppurative, Minimal    |

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

---

**ANIMAL ID:** 346

**TRT#:** 4

**SEX:** Female

**DAY ON TEST:** 733

**DOSE:** 10 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60566

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Pituitary Gland [ Hyperplasia TGLs = 6-10 ]	Pars Distalis	Hyperplasia	Mild
* Thymus		Atrophy	Moderate
* Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Mild

---

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 347

TRT#: 4

SEX: Female

DAY ON TEST: 732

DOSE: 10 mg/m3

DISP: Terminal Sacrifice

HISTO: 60567

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Lymph Node, Bronchial	* Lymph Node, Mandibular
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Ovary	* Pancreas
* Parathyroid Gland	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Trachea
* Urinary Bladder	* Uterus		

OBSERVATIONS

* Adrenal Cortex		Angiectasis	Mild
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
	Epiglottis	Metaplasia	Squamous, Minimal
* Liver		Basophilic Focus	
* Lung		Fibrosis	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Minimal
	[ Infiltration Cellular TGLs = 2-4 ]		
* Mammary Gland	Duct	Cyst	Minimal
	[ Cyst TGLs = 1-14 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
* Thyroid Gland	C Cell	Hyperplasia	Mild

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 348

TRT#: 4

SEX: Female

DAY ON TEST: 533

DOSE: 10 mg/m3

DISP: Moribund Sacrifice

HISTO: 60588

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Larynx	* Liver	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Ovary	* Pancreas	* Parathyroid Gland	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Trachea	* Urinary Bladder	* Uterus

OBSERVATIONS

* Brain		Compression	Marked
		Hydrocephalus	Moderate
* Clitoral Gland		Inflammation	Minimal
* Kidney	Pelvis	Inflammation	Mild
* Lung		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Minimal
	[ Infiltration Cellular TGLs = 5-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Minimal
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Mild
* Mammary Gland	Duct	Cyst	Minimal
	[ Cyst TGLs = 3-14 ]		
Mesentery	Fat	Necrosis	Minimal
	[ Necrosis TGLs = 6-14 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Adenoma	
	[ Adenoma TGLs = 4-10 ]		
* Thyroid Gland	C Cell	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 348

**TRT#:** 4

**SEX:** Female

**DAY ON TEST:** 533

**DOSE:** 10 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60588

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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PRIMARY CAUSE OF DEATH - Pituitary Gland Pars Distalis Adenoma

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 349

TRT#: 4

SEX: Female

DAY ON TEST: 733

DOSE: 10 mg/m3

DISP: Terminal Sacrifice

HISTO: 60569

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Kidney	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Ovary	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Salivary Glands	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Trachea	* Urinary Bladder
* Uterus			

MISSING

\* Lymph Node, Mandibular

INSUFFICIENT TISSUE

\* Lymph Node, Bronchial

OBSERVATIONS

* Adrenal Cortex		Angiectasis	Minimal
* Heart		Cardiomyopathy	Minimal
* Larynx	Epiglottis	Metaplasia	Squamous, Minimal
* Liver		Basophilic Focus	
		Clear Cell Focus	
	Bile Duct	Hyperplasia	Mild
		Inflammation	Granulomatous, Minimal
* Lung		Fibrosis	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Minimal
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 349

**TRT#:** 4

**SEX:** Female

**DAY ON TEST:** 733

**DOSE:** 10 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60569

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Thyroid Gland	C Cell	Hyperplasia	Mild

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 350

TRT#: 4

SEX: Female

DAY ON TEST: 732

DOSE: 10 mg/m3

DISP: Terminal Sacrifice

HISTO: 60570

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Ovary	* Pancreas	* Parathyroid Gland
* Salivary Glands	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Trachea	* Urinary Bladder
* Uterus			

MISSING

\* Clitoral Gland

OBSERVATIONS

* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
	Epiglottis	Metaplasia	Squamous, Minimal
* Liver		Basophilic Focus	
		Clear Cell Focus	
		Mixed Cell Focus	
* Lung		Fibrosis	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Minimal
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Minimal
* Mammary Gland		Carcinoma	Multiple
	[ Carcinoma TGLs = 1,2,3-14+15+16 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Adenoma	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 350

**TRT#:** 4

**SEX:** Female

**DAY ON TEST:** 732

**DOSE:** 10 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60570

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

[ Adenoma TGLs = 4-10 ]

\* Thyroid Gland

Follicle

Adenoma

C Cell

Hyperplasia

Mild

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 501

TRT#: 6

SEX: Female

DAY ON TEST: 604

DOSE: 30 mg/m3

DISP: Moribund Sacrifice

HISTO: 60421

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Liver	* Lymph Node, Mandibular
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Salivary Glands	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Trachea	* Urinary Bladder
* Uterus			

**OBSERVATIONS**

* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
	Epiglottis	Metaplasia	Squamous, Mild
* Lung		Fibrosis	Minimal
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Mild
	Alveolar Epith	Metaplasia	Squamous, Minimal
	Alveolus	Proteinosis	Minimal
	[ Infiltration Cellular TGLs = 2-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocytosis, Minimal
* Mammary Gland	Duct	Cyst	Mild
		Fibroadenoma	
	[ Cyst TGLs = 4-7 ]		
	[ Fibroadenoma TGLs = 1-14+15 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 501

**TRT#:** 6

**SEX:** Female

**DAY ON TEST:** 604

**DOSE:** 30 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60421

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Ovary		Cyst	Minimal
[ Cyst TGLs = 3-9 ]			
* Spleen		Hematopoietic Cell Proliferation	Minimal
* Thyroid Gland	C Cell	Hyperplasia	Minimal

---

PRIMARY CAUSE OF DEATH - Mammary Gland Duct Cyst

---

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 502

TRT#: 6

SEX: Female

DAY ON TEST: 732

DOSE: 30 mg/m3

DISP: Terminal Sacrifice

HISTO: 60422

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Ovary	* Pancreas	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Trachea	* Urinary Bladder		

OBSERVATIONS

* Heart		Cardiomyopathy	Minimal
* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
	Epiglottis	Metaplasia	Squamous, Mild
* Liver		Basophilic Focus	
		Clear Cell Focus	
* Lung		Fibrosis	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Mild
	Alveolar Epith	Metaplasia	Squamous, Minimal
	Alveolus	Proteinosis	Minimal
	[ Infiltration Cellular TGLs = 2-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocytosis, Mild
* Mammary Gland		Carcinoma	Multiple
	[ Carcinoma TGLs = 1,4-14+15 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Parathyroid Gland		Fibrosis	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 502

**TRT#:** 6

**SEX:** Female

**DAY ON TEST:** 732

**DOSE:** 30 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60422

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

* Pituitary Gland [ Adenoma TGLs = 3-10 ]	Pars Distalis	Adenoma	
* Thyroid Gland	C Cell	Hyperplasia	Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Minimal

---

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 503

TRT#: 6

SEX: Female

DAY ON TEST: 684

DOSE: 30 mg/m3

DISP: Moribund Sacrifice

HISTO: 60423

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Lymph Node, Mesenteric	* Mammary Gland
* Ovary	* Pancreas	* Parathyroid Gland	* Salivary Glands
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Trachea
* Urinary Bladder	* Uterus		

**MISSING**

\* Lymph Node, Mandibular

**OBSERVATIONS**

* Clitoral Gland		Inflammation	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Moderate
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Moderate
* Liver		Fatty Change	Moderate
* Lung		Fibrosis	Mild
	Alveolar Epith	Hyperplasia	Mild
	Alv/Bron Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Chronic Active, Mild
	Alveolus	Proteinosis	Mild
[ Infiltration Cellular	TGLs = 2-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Mild
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Moderate
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 503

**TRT#:** 6

**SEX:** Female

**DAY ON TEST:** 684

**DOSE:** 30 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60423

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Pituitary Gland [ Adenoma TGLs = 3-10 ]	Pars Distalis	Adenoma	
* Spleen	Lymph Follic	Atrophy	Minimal
* Thymus		Atrophy	Mild
* Thyroid Gland	C Cell	Hyperplasia	Mild

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**PRIMARY CAUSE OF DEATH** - Pituitary Gland Pars Distalis Adenoma

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 504

TRT#: 6

SEX: Female

DAY ON TEST: 646

DOSE: 30 mg/m3

DISP: Moribund Sacrifice

HISTO: 60424

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	* Salivary Glands	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Trachea	* Urinary Bladder
* Uterus			

OBSERVATIONS

* Brain		Compression	Marked
		Hydrocephalus	Marked
* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Moderate
* Liver		Basophilic Focus	
	Bile Duct	Hyperplasia	Minimal
* Lung		Fibrosis	Minimal
	Alveolar Epith	Hyperplasia	Mild
	BALT	Hyperplasia	Lymphohistiocy, Minimal
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Mild
	Alveolus	Proteinosis	Minimal
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Mild
* Mammary Gland		Fibroadenoma	
	[ Fibroadenoma TGLs = 3-14 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 504

**TRT#:** 6

**SEX:** Female

**DAY ON TEST:** 646

**DOSE:** 30 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60424

**ORGAN AND ACCOUNTABLE SITE STATUS**

	Glands, Olfactory Epi	Hyperplasia Inflammation Cyst	Minimal Suppurative, Minimal Minimal
* Ovary [ Cyst TGLs = 5-9 ]			
* Pituitary Gland [ Adenoma TGLs = 2-10 ]	Pars Distalis	Adenoma	
* Skin [ Ulcer TGLs = 4-15 ]		Ulcer	Mild
* Spleen		Hematopoietic Cell Proliferation	Minimal
* Thyroid Gland	C Cell	Hyperplasia	Minimal

**PRIMARY CAUSE OF DEATH** - Pituitary Gland Pars Distalis Adenoma

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 505

TRT#: 6

SEX: Female

DAY ON TEST: 626

DOSE: 30 mg/m3

DISP: Moribund Sacrifice

HISTO: 60425

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Esophagus	* Eye	* Harderian Gland	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Ovary	* Pancreas	* Parathyroid Gland
Peripheral Nerve	* Salivary Glands	Skeletal Muscle	* Skin
Spinal Cord	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Trachea	* Urinary Bladder	* Uterus	

MISSING

\* Clitoral Gland

OBSERVATIONS

* Adrenal Cortex		Vacuolization Cytoplasmic	Minimal
* Brain		Compression	Mild
* Heart		Cardiomyopathy	Minimal
* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Moderate
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Moderate
* Liver	Bile Duct	Dilatation	Moderate
		Hepatodiaphragmatic Nodule	
	[ Dilatation TGLs = 6-19 ]		
	[ Hepatodiaphragmatic Nodule TGLs = 7-19 ]		
* Lung		Fibrosis	Minimal
	Alveolar Epith	Hyperplasia	Mild
	Alv/Bron Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Mild
	Alveolus	Proteinosis	Mild
	[ Infiltration Cellular TGLs = 8-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 505

**TRT#:** 6

**SEX:** Female

**DAY ON TEST:** 626

**DOSE:** 30 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60425

**ORGAN AND ACCOUNTABLE SITE STATUS**

* Mammary Gland		Adenoma	
		Carcinoma	
	Duct	Cyst	Mild
	[ Adenoma TGLs = 1-14 ]		
	[ Carcinoma TGLs = 2-15 ]		
	[ Cyst TGLs = 3,4-16+17 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
	Respirat Epith	Hyperplasia	Minimal
		Inflammation	Suppurative, Mild
* Pituitary Gland	Pars Distalis	Adenoma	
	[ Adenoma TGLs = 9-10 ]		
* Spleen		Hematopoietic Cell Proliferation	Minimal
	[ Hematopoietic Cell Proliferation TGLs = 5-20 ]		
* Thyroid Gland	C Cell	Hyperplasia	Minimal

**PRIMARY CAUSE OF DEATH** - Pituitary Gland Pars Distalis Adenoma

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 506

**TRT#:** 6

**SEX:** Female

**DAY ON TEST:** 516

**DOSE:** 30 mg/m3

**DISP:** Natural Death

**HISTO:** 60426

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * Adrenal Cortex            | * Adrenal Medulla        | Blood Vessel               | * Bone                    |
| * Bone Marrow               | * Esophagus              | * Eye                      | * Harderian Gland         |
| * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   | * Intestine Large, Rectum |
| * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic      |
| * Liver                     | * Lymph Node, Bronchial  | * Lymph Node, Mandibular   | * Lymph Node, Mediastinal |
| * Lymph Node, Mesenteric    | * Mammary Gland          | * Ovary                    | * Pancreas                |
| * Parathyroid Gland         | * Salivary Glands        | * Skin                     | * Stomach, Forestomach    |
| * Stomach, Glandular        | * Thymus                 | * Thyroid Gland            | * Trachea                 |
| * Urinary Bladder           | * Uterus                 |                            |                           |

**AUTO PRECLUDES DIAG.**

- \* Nose

**OBSERVATIONS**

- |                   |  |                       |                         |
|-------------------|--|-----------------------|-------------------------|
| * Brain           |  | Compression           | Moderate                |
| * Clitoral Gland  |  | Inflammation          | Minimal                 |
| * Kidney          | Pelvis                                 | Inflammation          | Minimal                 |
| * Larynx          | Epiglottis                             | Hyperplasia           | Squamous, Mild          |
|                   | Epiglottis                             | Metaplasia            | Squamous, Mild          |
| * Lung            |  | Infiltration Cellular | Histiocyte, Minimal     |
|                   |  | Inflammation          | Chronic Active, Minimal |
|                   | [ Infiltration Cellular TGLs = 3-4+5 ] |                       |                         |
| * Pituitary Gland | Pars Distalis                          | Adenoma               |                         |
|                   | [ Adenoma TGLs = 2-10 ]                |                       |                         |
| * Spleen          | Lymph Follic                           | Atrophy               | Minimal                 |

**PRIMARY CAUSE OF DEATH** - Pituitary Gland Pars Distalis Adenoma

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 507

TRT#: 6

SEX: Female

DAY ON TEST: 733

DOSE: 30 mg/m3

DISP: Terminal Sacrifice

HISTO: 60427

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Ovary	* Pancreas	* Parathyroid Gland	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Trachea	* Urinary Bladder	

**OBSERVATIONS**

* Adrenal Cortex		Angiectasis	Mild
* Clitoral Gland		Inflammation	Minimal
* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Moderate
	Epiglottis	Infiltration Cellular	Mixed Cell, Minimal
		Metaplasia	Squamous, Mild
* Liver		Basophilic Focus	
* Lung		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Mild
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Mild
	Alveolus	Proteinosis	Mild
	[ Infiltration Cellular TGLs = 2-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Adenoma	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 507

**TRT#:** 6

**SEX:** Female

**DAY ON TEST:** 733

**DOSE:** 30 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60427

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Adenoma TGLs = 1-10 ]

\* Thyroid Gland

C Cell

Hyperplasia

Mild

\* Uterus

Endometrium

Hyperplasia

Cystic, Minimal

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 508

TRT#: 6

SEX: Female

DAY ON TEST: 590

DOSE: 30 mg/m3

DISP: Moribund Sacrifice

HISTO: 60428

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Ovary	* Pancreas
* Parathyroid Gland	Peripheral Nerve	* Pituitary Gland	* Salivary Glands
Skeletal Muscle	* Skin	Spinal Cord	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Trachea	

MISSING

\* Lymph Node, Bronchial

OBSERVATIONS

* Intestine Large, Colon		Schwannoma Malignant	Metastatic (Uterus)
[ Schwannoma Malignant	TGLs = 7-7 ]		
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
	Epiglottis	Metaplasia	Squamous, Mild
* Liver		Basophilic Focus	
* Lung		Fibrosis	Mild
	Alveolar Epith	Hyperplasia	Moderate
	Alv/Bron Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Mild
	Alveolus	Proteinosis	Minimal
		Schwannoma Malignant	Metastatic (Uterus)
[ Infiltration Cellular	TGLs = 1-4+5 ]		
Lymph Node	Renal	Schwannoma Malignant	Metastatic (Uterus)
[ Schwannoma Malignant	TGLs = 6-7 ]		
Mesentery		Schwannoma Malignant	Metastatic (Uterus)
[ Schwannoma Malignant	TGLs = 5-14 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 508

**TRT#:** 6

**SEX:** Female

**DAY ON TEST:** 590

**DOSE:** 30 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60428

**ORGAN AND ACCOUNTABLE SITE STATUS**

	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
	Respirat Epith	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Spleen		Hematopoietic Cell Proliferation	Mild
	[ Hematopoietic Cell Proliferation TGLs = 2-6 ]		
* Thyroid Gland	C Cell	Hyperplasia	Mild
* Urinary Bladder		Schwannoma Malignant	Metastatic (Uterus)
* Uterus		Schwannoma Malignant	
	[ Schwannoma Malignant TGLs = 3,4-14+15+16+17+18+19 ]		

**PRIMARY CAUSE OF DEATH** - Uterus Schwannoma Malignant

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 509

TRT#: 6

SEX: Female

DAY ON TEST: 733

DOSE: 30 mg/m3

DISP: Terminal Sacrifice

HISTO: 60429

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Clitoral Gland	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Mammary Gland	* Ovary
* Pancreas	* Parathyroid Gland	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Trachea
* Urinary Bladder			

**MISSING**

\* Lymph Node, Mediastinal

**OBSERVATIONS**

* Adrenal Cortex		Angiectasis	Minimal
* Brain		Compression	Moderate
		Granular Cell Tumor Benign	
	[ Granular Cell Tumor Benign TGLs = 3-14 ]		
* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
	Epiglottis	Metaplasia	Squamous, Mild
* Liver		Basophilic Focus	
* Lung		Fibrosis	Minimal
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Mild
	[ Infiltration Cellular TGLs = 2-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
	Respirat Epith	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 509

**TRT#:** 6

**SEX:** Female

**DAY ON TEST:** 733

**DOSE:** 30 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60429

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Pituitary Gland [ Adenoma TGLs = 4-10 ]	Pars Distalis	Inflammation Adenoma	Suppurative, Minimal Multiple
* Thymus		Atrophy Hyperplasia	Mild Lymphohistiocy, Mild
* Thyroid Gland	C Cell	Hyperplasia	Minimal
* Uterus [ Polyp Stromal TGLs = 1-15 ] [ Schwannoma Malignant TGLs = 1-15 ]		Polyp Stromal Schwannoma Malignant	

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 510

TRT#: 6

SEX: Female

DAY ON TEST: 733

DOSE: 30 mg/m3

DISP: Terminal Sacrifice

HISTO: 60430

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Pancreas
* Parathyroid Gland	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Trachea
* Urinary Bladder	* Uterus		

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mandibular
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OBSERVATIONS

* Adrenal Cortex		Hypertrophy	Moderate
		Vacuolization Cytoplasmic	Mild
[ Hypertrophy TGLs = 5-7 ]			
* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
	Epiglottis	Metaplasia	Squamous, Moderate
* Liver		Basophilic Focus	
* Lung		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Mild
	Alveolar Epith	Hyperplasia	Moderate
		Infiltration Cellular	Histiocyte, Mild
	Alveolus	Inflammation	Chronic Active, Mild
		Proteinosis	Mild
[ Infiltration Cellular TGLs = 3-4+5 ]			
* Mammary Gland		Fibroadenoma	
[ Fibroadenoma TGLs = 1-14 ]			
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
* Ovary		Cyst	Mild
[ Cyst TGLs = 4-9 ]			

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 510

**TRT#:** 6

**SEX:** Female

**DAY ON TEST:** 733

**DOSE:** 30 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60430

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Pituitary Gland [ Adenoma TGLs = 2-10 ]	Pars Distalis	Adenoma	Multiple
* Thyroid Gland	C Cell	Hyperplasia	Minimal

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 511

TRT#: 6

SEX: Female

DAY ON TEST: 731

DOSE: 30 mg/m3

DISP: Terminal Sacrifice

HISTO: 60431

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Ovary	* Pancreas	* Parathyroid Gland	* Salivary Glands
* Stomach, Forestomach	* Stomach, Glandular	* Trachea	* Urinary Bladder

**OBSERVATIONS**

* Adrenal Cortex		Angiectasis	Minimal
* Heart		Cardiomyopathy	Minimal
* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
	Epiglottis	Metaplasia	Squamous, Moderate
* Liver		Basophilic Focus	
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Mild
	Alveolus	Proteinosis	Minimal
	[ Infiltration Cellular TGLs = 3-4+5 ]		
* Mammary Gland		Hyperplasia	Mild
	[ Hyperplasia TGLs = 5-15 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Squamous, Minimal
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Adenoma	
	[ Adenoma TGLs = 2-10 ]		

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

---

**ANIMAL ID:** 511

**TRT#:** 6

**SEX:** Female

**DAY ON TEST:** 731

**DOSE:** 30 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60431

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Skin		Ulcer	Moderate
	[ Ulcer TGLs = 1-14 ]		
* Spleen		Hematopoietic Cell Proliferation	Minimal
* Thymus		Atrophy	Minimal
* Thyroid Gland	Follicle	Hyperplasia	Minimal
	C Cell	Hyperplasia	Mild
* Uterus	Endometrium	Hyperplasia	Cystic, Moderate
	[ Hyperplasia TGLs = 4-10 ]		

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 512

TRT#: 6

SEX: Female

DAY ON TEST: 733

DOSE: 30 mg/m3

DISP: Terminal Sacrifice

HISTO: 60432

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Liver	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Ovary	* Pancreas
* Parathyroid Gland	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Trachea	* Urinary Bladder
* Uterus			

MISSING

\* Lymph Node, Bronchial

OBSERVATIONS

* Adrenal Cortex		Angiectasis	Minimal
* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
	Epiglottis	Metaplasia	Squamous, Mild
* Lung		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Moderate
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Mild
	Alveolar Epith	Metaplasia	Squamous, Minimal
	Alveolus	Proteinosis	Minimal
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Mild

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 512

**TRT#:** 6

**SEX:** Female

**DAY ON TEST:** 733

**DOSE:** 30 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60432

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Thymus		Atrophy	Minimal
* Thyroid Gland	C Cell	Hyperplasia	Mild
	Follicle	Hyperplasia	Minimal

---

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 513

TRT#: 6

SEX: Female

DAY ON TEST: 732

DOSE: 30 mg/m3

DISP: Terminal Sacrifice

HISTO: 60433

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Clitoral Gland	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Liver	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Pancreas	* Parathyroid Gland	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Trachea	* Urinary Bladder	* Uterus	

**OBSERVATIONS**

* Adrenal Cortex		Angiectasis	Minimal
* Brain		Compression	Minimal
* Kidney	Pelvis	Inflammation	Mild
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Mild
* Lung		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Mild
	Alveolus	Proteinosis	Minimal
	[ Infiltration Cellular TGLs = 2-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Mild
Mesentery	Fat	Necrosis	Mild
	[ Necrosis TGLs = 3-14 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 513

**TRT#:** 6

**SEX:** Female

**DAY ON TEST:** 732

**DOSE:** 30 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60433

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Ovary		Cyst	Minimal
[ Cyst TGLs = 1-9 ]			
* Pituitary Gland	Pars Distalis	Adenoma	Multiple
[ Adenoma TGLs = 4-10 ]			
* Thymus		Atrophy	Minimal
* Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Mild

---

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 514

TRT#: 6

SEX: Female

DAY ON TEST: 731

DOSE: 30 mg/m3

DISP: Terminal Sacrifice

HISTO: 60434

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Clitoral Gland	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Ovary
* Pancreas	* Parathyroid Gland	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Trachea
* Urinary Bladder			

OBSERVATIONS

* Adrenal Cortex		Angiectasis	Minimal
		Hypertrophy	Minimal
		Vacuolization Cytoplasmic	Minimal
* Brain		Compression	Moderate
* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
	Epiglottis	Metaplasia	Squamous, Mild
* Liver		Basophilic Focus	
* Lung		Fibrosis	Minimal
	Alveolar Epith	Hyperplasia	Minimal
	BALT	Hyperplasia	Lymphohistiocy, Minimal
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Mild
	Alveolus	Proteinosis	Minimal
	[ Infiltration Cellular TGLs = 5-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Minimal
* Mammary Gland		Fibroadenoma	
	[ Fibroadenoma TGLs = 1-14 ]		
Mesentery	Fat	Necrosis	Mild
	[ Necrosis TGLs = 4-14 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 514

**TRT#:** 6

**SEX:** Female

**DAY ON TEST:** 731

**DOSE:** 30 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60434

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Adenoma	
[ Adenoma TGLs = 3-10 ]			
* Thymus		Thymoma Benign	
[ Thymoma Benign TGLs = 2-3 ]			
* Thyroid Gland	C Cell	Hyperplasia	Mild
* Uterus	Endometrium	Hyperplasia	Cystic, Minimal

---

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 515

TRT#: 6

SEX: Female

DAY ON TEST: 731

DOSE: 30 mg/m3

DISP: Terminal Sacrifice

HISTO: 60435

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Liver	* Lymph Node, Mandibular
* Lymph Node, Mesenteric	* Mammary Gland	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Trachea	* Urinary Bladder

MISSING

\* Lymph Node, Mediastinal

OBSERVATIONS

* Adrenal Cortex		Angiectasis	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
	Epiglottis	Metaplasia	Squamous, Mild
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Mild
	Alveolar Epith	Hyperplasia	Marked
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Mild
	Alveolus	Proteinosis	Minimal
	[ Infiltration Cellular TGLs = 1,2,3-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Ovary		Cyst	Mild
	[ Cyst TGLs = 4,5-9 ]		
* Thymus		Atrophy	Marked

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 515

**TRT#:** 6

**SEX:** Female

**DAY ON TEST:** 731

**DOSE:** 30 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60435

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* Thyroid Gland

C Cell

Hyperplasia

Mild

\* Uterus

Polyp Stromal

---

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 516

TRT#: 6

SEX: Female

DAY ON TEST: 732

DOSE: 30 mg/m3

DISP: Terminal Sacrifice

HISTO: 60436

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Mammary Gland
* Ovary	* Pancreas	* Parathyroid Gland	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Trachea	* Urinary Bladder	* Uterus	

OBSERVATIONS

* Adrenal Cortex		Angiectasis	Minimal
		Hypertrophy	Minimal
* Kidney	Renal Tubule	Cyst	Minimal
	Pelvis	Inflammation	Minimal
	[ Cyst TGLs = 4-15 ]		
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
	Epiglottis	Metaplasia	Squamous, Moderate
* Liver		Angiectasis	Minimal
	[ Angiectasis TGLs = 3-6+14 ]	Basophilic Focus	
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Mild
	Alveolus	Proteinosis	Minimal
	[ Infiltration Cellular TGLs = 2-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Minimal
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 516

**TRT#:** 6

**SEX:** Female

**DAY ON TEST:** 732

**DOSE:** 30 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60436

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Mild
[ Hyperplasia TGLs = 1-10 ]			
* Thymus		Atrophy	Mild
* Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Mild

---

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 517

TRT#: 6

SEX: Female

DAY ON TEST: 732

DOSE: 30 mg/m3

DISP: Terminal Sacrifice

HISTO: 60437

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Ovary	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Salivary Glands	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Trachea	* Urinary Bladder	* Uterus

OBSERVATIONS

* Adrenal Cortex		Angiectasis	Minimal
		Vacuolization Cytoplasmic	Mild
* Eye	Retina	Atrophy	Mild
		Cataract	Moderate
	[ Cataract TGLs = 2-13 ]		
* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
	Epiglottis	Metaplasia	Squamous, Moderate
* Liver		Basophilic Focus	
	Bile Duct	Hyperplasia	Minimal
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Mild
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Mild
	Alveolus	Proteinosis	Minimal
	[ Infiltration Cellular TGLs = 3-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 517

**TRT#:** 6

**SEX:** Female

**DAY ON TEST:** 732

**DOSE:** 30 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60437

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Thymus		Atrophy	Minimal
* Thyroid Gland	C Cell	Hyperplasia	Mild

---

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 518

TRT#: 6

SEX: Female

DAY ON TEST: 733

DOSE: 30 mg/m3

DISP: Terminal Sacrifice

HISTO: 60438

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Ovary
* Pancreas	* Parathyroid Gland	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Trachea	* Urinary Bladder		

OBSERVATIONS

* Adrenal Cortex		Angiectasis	Mild
* Kidney	Pelvis	Inflammation	Minimal
		Nephropathy	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
	Epiglottis	Metaplasia	Squamous, Mild
* Liver		Basophilic Focus	
		Clear Cell Focus	
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Minimal
	BALT	Hyperplasia	Lymphohistiocy, Minimal
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Mild
	Alveolar Epith	Metaplasia	Squamous, Minimal
	Alveolus	Proteinosis	Minimal
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Mild
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Mild
* Mammary Gland		Adenoma	
	[ Adenoma TGLs = 3-14 ]		
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 518

**TRT#:** 6

**SEX:** Female

**DAY ON TEST:** 733

**DOSE:** 30 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60438

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Adenoma	
[ Adenoma TGLs = 2-10 ]			
* Thyroid Gland	Follicle	Hyperplasia	Mild
	C Cell	Hyperplasia	Mild
* Uterus		Polyp Stromal	
[ Polyp Stromal TGLs = 4-10 ]			

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 519

TRT#: 6

SEX: Female

DAY ON TEST: 733

DOSE: 30 mg/m3

DISP: Terminal Sacrifice

HISTO: 60439

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Esophagus	* Eye	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Lymph Node, Mandibular
* Lymph Node, Mesenteric	* Ovary	* Pancreas	* Parathyroid Gland
* Salivary Glands	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Trachea	* Urinary Bladder	* Uterus

OBSERVATIONS

* Adrenal Cortex		Angiectasis	Mild
		Hypertrophy	Mild
		Vacuolization Cytoplasmic	Minimal
* Brain		Compression	Mild
* Clitoral Gland		Inflammation	Mild
* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Metaplasia	Squamous, Mild
* Liver		Basophilic Focus	
* Lung		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Moderate
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Mild
	Alveolus	Proteinosis	Minimal
	[ Infiltration Cellular TGLs = 4-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Mild
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Mild
* Mammary Gland		Hyperplasia	Minimal
	[ Hyperplasia TGLs = 1-14 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Moderate
	Goblet Cell	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 519

**TRT#:** 6

**SEX:** Female

**DAY ON TEST:** 733

**DOSE:** 30 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60439

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Adenoma	
	Pars Distalis	Hyperplasia	Minimal
	[ Adenoma TGLs = 2-10 ]		
* Thymus		Atrophy	Mild
* Thyroid Gland	C Cell	Hyperplasia	Minimal

---

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 520

TRT#: 6

SEX: Female

DAY ON TEST: 681

DOSE: 30 mg/m3

DISP: Moribund Sacrifice

HISTO: 60440

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Esophagus	* Eye	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Lymph Node, Mandibular
* Lymph Node, Mesenteric	* Ovary	* Pancreas	* Parathyroid Gland
* Salivary Glands	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Thyroid Gland	* Trachea	* Urinary Bladder	* Uterus

OBSERVATIONS

* Adrenal Cortex		Angiectasis	Minimal
		Vacuolization Cytoplasmic	Minimal
* Brain		Compression	Marked
		Hydrocephalus	Moderate
* Clitoral Gland		Inflammation	Minimal
* Kidney	Pelvis	Inflammation	Mild
		Nephropathy	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
	Epiglottis	Metaplasia	Squamous, Mild
* Liver		Fatty Change	Mild
* Lung		Fibrosis	Minimal
	Alveolar Epith	Hyperplasia	Minimal
	Alv/Bron Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Mild
	[ Infiltration Cellular TGLs = 3-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Mild
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Minimal
* Mammary Gland		Carcinoma	
	[ Carcinoma TGLs = 2-14 ]		
Mesentery	Fat	Necrosis	Minimal
	[ Necrosis TGLs = 4-15 ]		

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 520

**TRT#:** 6

**SEX:** Female

**DAY ON TEST:** 681

**DOSE:** 30 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60440

**ORGAN AND ACCOUNTABLE SITE STATUS**

* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Adenoma	
[ Adenoma TGLs = 5-9 ]			
* Spleen	Lymph Follic	Atrophy	Minimal
* Thymus		Atrophy	Mild

**PRIMARY CAUSE OF DEATH** - Pituitary Gland Pars Distalis Adenoma

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 521

TRT#: 6

SEX: Female

DAY ON TEST: 732

DOSE: 30 mg/m3

DISP: Terminal Sacrifice

HISTO: 60441

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Kidney	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Mammary Gland
* Ovary	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Salivary Glands	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Trachea	* Urinary Bladder	

OBSERVATIONS

* Adrenal Cortex		Angiectasis	Minimal
* Clitoral Gland		Inflammation	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
	Epiglottis	Metaplasia	Squamous, Moderate
* Liver		Basophilic Focus	
		Clear Cell Focus	
	[ Basophilic Focus TGLs = 3-6 ]		
* Lung		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Mild
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Mild
	Alveolus	Proteinosis	Mild
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Mild
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 521

**TRT#:** 6

**SEX:** Female

**DAY ON TEST:** 732

**DOSE:** 30 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60441

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Thymus		Atrophy	Minimal
		Cyst	Mild
[ Cyst TGLs = 2-3 ]			
* Thyroid Gland	C Cell	Hyperplasia	Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Minimal

---

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 522

TRT#: 6

SEX: Female

DAY ON TEST: 732

DOSE: 30 mg/m3

DISP: Terminal Sacrifice

HISTO: 60442

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Liver	* Lymph Node, Bronchial	* Lymph Node, Mandibular
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Ovary	* Pancreas
* Parathyroid Gland	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Trachea	* Urinary Bladder

OBSERVATIONS

* Clitoral Gland		Inflammation	Minimal
* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Moderate
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Mild
	BALT	Hyperplasia	Lymphohistiocytosis, Minimal
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Mild
	Alveolus	Proteinosis	Minimal
	[ Infiltration Cellular TGLs = 3-4+5 ]		
* Mammary Gland		Fibroadenoma	
	[ Fibroadenoma TGLs = 1-14 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Marked
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 522

**TRT#:** 6

**SEX:** Female

**DAY ON TEST:** 732

**DOSE:** 30 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60442

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

\* Thymus

Atrophy

Marked

\* Thyroid Gland

C Cell

Hyperplasia

Mild

\* Uterus

Adenocarcinoma

[ Adenocarcinoma TGLs = 2-10 ]

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 523

TRT#: 6

SEX: Female

DAY ON TEST: 732

DOSE: 30 mg/m3

DISP: Terminal Sacrifice

HISTO: 60443

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Clitoral Gland	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Pancreas	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Trachea	* Urinary Bladder

MISSING

\* Parathyroid Gland

OBSERVATIONS

* Adrenal Cortex		Angiectasis	Minimal
		Hypertrophy	Minimal
		Vacuolization Cytoplasmic	Minimal
* Brain		Compression	Minimal
* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Moderate
* Liver		Basophilic Focus	
* Lung		Fibrosis	Minimal
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Mild
	Alveolus	Proteinosis	Minimal
	[ Infiltration Cellular TGLs = 5-4+5 ]		
* Mammary Gland		Carcinoma	Multiple
		Fibroadenoma	
	[ Carcinoma TGLs = 2,3,4-16+17+18 ]		
	[ Fibroadenoma TGLs = 1-15 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 523

**TRT#:** 6

**SEX:** Female

**DAY ON TEST:** 732

**DOSE:** 30 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60443

**ORGAN AND ACCOUNTABLE SITE STATUS**

	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Ovary		Cyst	Mild
	[ Cyst TGLs = 7,8-9 ]		
* Pituitary Gland	Pars Distalis	Adenoma	Multiple
	[ Adenoma TGLs = 6-10 ]		
* Thymus		Thymoma Benign	
* Thyroid Gland	Follicle	Hyperplasia	Minimal
	C Cell	Hyperplasia	Minimal
* Uterus		Polyp Stromal	
	[ Polyp Stromal TGLs = 9-14 ]		

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 524

TRT#: 6

SEX: Female

DAY ON TEST: 732

DOSE: 30 mg/m3

DISP: Terminal Sacrifice

HISTO: 60444

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Ovary	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Trachea
* Urinary Bladder			

**OBSERVATIONS**

* Adrenal Cortex		Angiectasis	Minimal
* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
	Epiglottis	Infiltration Cellular	Mixed Cell, Minimal
		Metaplasia	Squamous, Moderate
* Liver		Basophilic Focus	
* Lung		Alveolar/Bronchiolar Adenoma	
		Fibrosis	Mild
	Alveolar Epith	Hyperplasia	Marked
	Alv/Bron Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Mild
	Alveolar Epith	Metaplasia	Squamous, Minimal
	Alveolus	Proteinosis	Minimal
	[ Alveolar/Bronchiolar Adenoma TGLs = 3-4 ]		
	[ Infiltration Cellular TGLs = 2-4+5 ]		
* Mammary Gland		Fibroadenoma	
	[ Fibroadenoma TGLs = 5-16 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 524

**TRT#:** 6

**SEX:** Female

**DAY ON TEST:** 732

**DOSE:** 30 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60444

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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	Goblet Cell	Hyperplasia	Mild
	Glands, Olfactory Epi	Hyperplasia	Mild
		Inflammation	Suppurative, Minimal
* Thyroid Gland	C Cell	Hyperplasia	Mild
* Uterus		Adenoma	
	Endometrium	Hyperplasia	Cystic, Mild

---

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 525

TRT#: 6

SEX: Female

DAY ON TEST: 733

DOSE: 30 mg/m3

DISP: Terminal Sacrifice

HISTO: 60445

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Trachea
* Urinary Bladder	* Uterus		

OBSERVATIONS

* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
	Epiglottis	Metaplasia	Squamous, Mild
* Liver	Bile Duct	Cyst	Mild
	Bile Duct	Hyperplasia	Minimal
	[ Cyst TGLs = 3-6 ]		
* Lung		Fibrosis	Mild
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Mild
	Alveolar Epith	Metaplasia	Squamous, Minimal
	Alveolus	Proteinosis	Mild
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Ovary		Cyst	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 525

**TRT#:** 6

**SEX:** Female

**DAY ON TEST:** 733

**DOSE:** 30 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60445

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Cyst TGLs = 2-9 ]

\* Thyroid Gland

C Cell

Hyperplasia

Mild

---

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 526

TRT#: 6

SEX: Female

DAY ON TEST: 733

DOSE: 30 mg/m3

DISP: Terminal Sacrifice

HISTO: 60446

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Clitoral Gland	* Esophagus	* Eye	* Harderian Gland
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Liver
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Ovary	* Pancreas	* Parathyroid Gland	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Trachea	* Urinary Bladder	* Uterus	

**MISSING**

\* Thymus

**OBSERVATIONS**

* Adrenal Cortex		Angiectasis	Minimal
* Brain		Compression	Moderate
* Heart		Cardiomyopathy	Mild
* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
	Epiglottis	Metaplasia	Squamous, Mild
* Lung		Fibrosis	Minimal
	Alveolar Epith	Hyperplasia	Minimal
	Alv/Bron Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Mild
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Moderate
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Adenoma	Multiple

[ Adenoma TGLs = 1-10 ]

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 526

**TRT#:** 6

**SEX:** Female

**DAY ON TEST:** 733

**DOSE:** 30 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60446

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* Thyroid Gland

Follicle  
C Cell

Adenoma  
Hyperplasia

Mild

---

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 527

TRT#: 6

SEX: Female

DAY ON TEST: 733

DOSE: 30 mg/m3

DISP: Terminal Sacrifice

HISTO: 60447

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Parathyroid Gland	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Trachea	* Urinary Bladder	* Uterus	

**OBSERVATIONS**

* Adrenal Cortex		Hypertrophy	Moderate
		Vacuolization Cytoplasmic	Minimal
* Kidney	Pelvis	Inflammation	Minimal
* Larynx		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Mild
* Liver		Basophilic Focus	
	Bile Duct	Hyperplasia	Minimal
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Mild
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Mild
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Ovary		Cyst	Minimal
	[ Cyst TGLs = 2-9 ]		

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

---

**ANIMAL ID:** 527

**TRT#:** 6

**SEX:** Female

**DAY ON TEST:** 733

**DOSE:** 30 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60447

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Pancreas	Acinus	Atrophy	Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Mild
* Thyroid Gland	C Cell	Hyperplasia	Mild

---

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 528

TRT#: 6

SEX: Female

DAY ON TEST: 732

DOSE: 30 mg/m3

DISP: Terminal Sacrifice

HISTO: 60448

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Kidney	* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Mammary Gland	* Pancreas	* Parathyroid Gland	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Trachea	* Urinary Bladder		

OBSERVATIONS

* Adrenal Cortex		Angiectasis	Minimal
		Hypertrophy	Minimal
* Clitoral Gland		Inflammation	Mild
* Larynx	Epiglottis	Metaplasia	Squamous, Mild
* Liver		Basophilic Focus	
* Lung		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Moderate
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Mild
	Alveolus	Proteinosis	Minimal
	[ Infiltration Cellular TGLs = 2-4+5 ]		
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Mild
	Glands, Olfactory Epi	Hyperplasia	Mild
	Transit Epithe	Hyperplasia	Minimal
		Inflammation	Suppurative, Mild
* Ovary		Cyst	Minimal
	[ Cyst TGLs = 3-9 ]		

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 528

**TRT#:** 6

**SEX:** Female

**DAY ON TEST:** 732

**DOSE:** 30 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60448

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Pituitary Gland [ Hyperplasia TGLs = 1-10 ]	Pars Distalis	Hyperplasia	Moderate
* Thymus		Cyst	Mild
* Thyroid Gland	C Cell	Hyperplasia	Mild
* Uterus	Endometrium	Hyperplasia Polyp Stromal	Cystic, Minimal

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 529

TRT#: 6

SEX: Female

DAY ON TEST: 733

DOSE: 30 mg/m3

DISP: Terminal Sacrifice

HISTO: 60449

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Clitoral Gland	* Esophagus	* Eye	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Lymph Node, Mandibular
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Ovary
* Pancreas	* Parathyroid Gland	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Trachea
* Urinary Bladder			

**OBSERVATIONS**

* Adrenal Cortex		Angiectasis	Minimal
		Hypertrophy	Minimal
		Vacuolization Cytoplasmic	Minimal
* Brain		Compression	Mild
* Harderian Gland		Inflammation	Minimal
* Kidney	Pelvis	Inflammation	Minimal
		Nephropathy	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
	Epiglottis	Metaplasia	Squamous, Mild
* Liver		Basophilic Focus	
		Clear Cell Focus	
* Lung		Fibrosis	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Mild
	[ Infiltration Cellular TGLs = 2-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Minimal
Mesentery	Fat	Necrosis	Mild
	[ Necrosis TGLs = 5-15 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 529

**TRT#:** 6

**SEX:** Female

**DAY ON TEST:** 733

**DOSE:** 30 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60449

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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	Goblet Cell	Hyperplasia	Mild
	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Adenoma	
[ Adenoma TGLs = 1-10 ]			
* Thymus		Thymoma Benign	
* Thyroid Gland	C Cell	Hyperplasia	Mild
* Uterus	Endometrium	Hyperplasia	Cystic, Mild
[ Hyperplasia TGLs = 3,4-14+15 ]			

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 530

TRT#: 6

SEX: Female

DAY ON TEST: 731

DOSE: 30 mg/m3

DISP: Terminal Sacrifice

HISTO: 60450

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Clitoral Gland	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Ovary	* Pancreas	* Parathyroid Gland	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Trachea	* Urinary Bladder		

INSUFFICIENT TISSUE

\* Lymph Node, Bronchial

OBSERVATIONS

* Adrenal Cortex		Hypertrophy	Minimal
		Vacuolization Cytoplasmic	Minimal
* Brain		Compression	Minimal
* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Mild
* Liver		Basophilic Focus	
* Lung		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Moderate
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Mild
	Alveolar Epith	Metaplasia	Squamous, Mild
	Alveolus	Proteinosis	Mild
	[ Infiltration Cellular TGLs = 2-4+5 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
Test Type: CHRONIC  
Route: RESPIRATORY EXPOSURE WHOLE BODY  
Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
Time Report Requested: 09:56:24  
First Dose M/F: 07/20/09 / 07/20/09  
Lab: BNW

ANIMAL ID: 530

TRT#: 6

SEX: Female

DAY ON TEST: 731

DOSE: 30 mg/m3

DISP: Terminal Sacrifice

HISTO: 60450

**ORGAN AND ACCOUNTABLE SITE STATUS**

* Pituitary Gland [ Adenoma TGLs = 1-10 ]	Pars Distalis	Inflammation Adenoma	Suppurative, Minimal
* Thymus		Atrophy	Mild
* Thyroid Gland	C Cell	Hyperplasia	Mild
* Uterus [ Adenocarcinoma TGLs = 4-10 ] [ Polyp Stromal TGLs = 3-10 ]		Adenocarcinoma Polyp Stromal	

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 531

TRT#: 6

SEX: Female

DAY ON TEST: 733

DOSE: 30 mg/m3

DISP: Terminal Sacrifice

HISTO: 60451

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Esophagus	* Eye	* Harderian Gland	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Ovary	* Pancreas
* Parathyroid Gland	* Salivary Glands	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Trachea	* Urinary Bladder	

**OBSERVATIONS**

* Adrenal Cortex		Angiectasis	Minimal
		Hypertrophy	Mild
* Brain		Compression	Moderate
* Clitoral Gland		Inflammation	Minimal
* Heart		Cardiomyopathy	Mild
* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Mild
* Liver		Basophilic Focus	
* Lung		Fibrosis	Mild
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Mild
	Alveolar Epith	Metaplasia	Squamous, Mild
	Alveolus	Proteinosis	Minimal
	[ Infiltration Cellular TGLs = 3-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Glands, Olfactory Epi	Hyperplasia	Mild
	Goblet Cell	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 531

**TRT#:** 6

**SEX:** Female

**DAY ON TEST:** 733

**DOSE:** 30 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60451

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Pituitary Gland	Pars Distalis	Inflammation	Suppurative, Minimal
	Pars Intermed	Adenoma	
	[ Adenoma TGLs = 1-10 ]	Adenoma	
* Spleen		Hematopoietic Cell Proliferation	Minimal
* Thymus		Atrophy	Mild
* Thyroid Gland	C Cell	Hyperplasia	Mild
* Uterus		Adenocarcinoma	
	[ Adenocarcinoma TGLs = 2-14 ]		

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 532

TRT#: 6

SEX: Female

DAY ON TEST: 613

DOSE: 30 mg/m3

DISP: Moribund Sacrifice

HISTO: 60452

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Liver	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	* Salivary Glands	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Trachea	* Urinary Bladder

**OBSERVATIONS**

* Adrenal Cortex		Hypertrophy	Mild
* Kidney	Pelvis	Inflammation	Mild
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Moderate
* Lung		Fibrosis	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Mild
	Alveolus	Proteinosis	Minimal
	[ Infiltration Cellular TGLs = 4-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocytosis, Mild
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocytosis, Minimal
* Mammary Gland	Duct	Cyst	Minimal
	[ Cyst TGLs = 2-16 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Mild
* Ovary		Cyst	Mild
	[ Cyst TGLs = 6-9 ]		

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 532

**TRT#:** 6

**SEX:** Female

**DAY ON TEST:** 613

**DOSE:** 30 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60452

**ORGAN AND ACCOUNTABLE SITE STATUS**

* Pituitary Gland	Pars Distalis	Hyperplasia	Mild
* Skin		Cyst Epithelial Inclusion	Mild
		Ulcer	Mild
	[ Cyst Epithelial Inclusion TGLs = 3-7 ]		
	[ Ulcer TGLs = 1-17 ]		
* Spleen		Hematopoietic Cell Proliferation	Minimal
* Thyroid Gland	C Cell	Hyperplasia	Minimal
* Uterus		Schwannoma Malignant	
	[ Schwannoma Malignant TGLs = 5-14+15 ]		

**PRIMARY CAUSE OF DEATH** - Uterus Schwannoma Malignant

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 533

TRT#: 6

SEX: Female

DAY ON TEST: 732

DOSE: 30 mg/m3

DISP: Terminal Sacrifice

HISTO: 60453

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Clitoral Gland	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Mammary Gland	* Ovary
* Parathyroid Gland	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Trachea	* Urinary Bladder

OBSERVATIONS

* Adrenal Cortex		Angiectasis	Minimal
* Brain		Compression	Mild
* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
	Epiglottis	Metaplasia	Squamous, Moderate
* Liver		Basophilic Focus	
* Lung		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Mild
	Alveolus	Proteinosis	Mild
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Mild
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Marked
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Pancreas	Acinus	Atrophy	Mild
* Pituitary Gland	Pars Distalis	Adenoma	Multiple
	[ Adenoma TGLs = 2-10 ]		

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 533

**TRT#:** 6

**SEX:** Female

**DAY ON TEST:** 732

**DOSE:** 30 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60453

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Thymus		Atrophy	Marked
* Thyroid Gland	C Cell	Hyperplasia	Mild
* Uterus	Endometrium	Hyperplasia	Cystic, Minimal
		Polyp Stromal	Multiple

---

[ Polyp Stromal TGLs = 3,4-10+14 ]

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 534

TRT#: 6

SEX: Female

DAY ON TEST: 733

DOSE: 30 mg/m3

DISP: Terminal Sacrifice

HISTO: 60454

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Mammary Gland	* Pancreas	* Parathyroid Gland	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Trachea	* Urinary Bladder	* Uterus	

OBSERVATIONS

* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
	Epiglottis	Metaplasia	Squamous, Mild
* Liver		Basophilic Focus	
	Bile Duct	Hyperplasia	Minimal
* Lung		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Moderate
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Mild
	Alveolar Epith	Metaplasia	Squamous, Mild
	Alveolus	Proteinosis	Mild
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Minimal
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Glands, Olfactory Epi	Hyperplasia	Minimal
	Transit Epithe	Hyperplasia	Minimal
		Inflammation	Suppurative, Mild
	Transit Epithe	Metaplasia	Squamous, Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

---

**ANIMAL ID:** 534

**TRT#:** 6

**SEX:** Female

**DAY ON TEST:** 733

**DOSE:** 30 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60454

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

* Ovary		Cyst	Mild
[ Cyst TGLs = 3-9 ]			
* Pituitary Gland	Pars Distalis	Hyperplasia	Mild
[ Hyperplasia TGLs = 2-10 ]			
* Thymus		Atrophy	Marked
* Thyroid Gland	C Cell	Hyperplasia	Mild

---

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 535

TRT#: 6

SEX: Female

DAY ON TEST: 633

DOSE: 30 mg/m3

DISP: Moribund Sacrifice

HISTO: 60455

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Clitoral Gland	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Mammary Gland	* Ovary
* Pancreas	* Parathyroid Gland	* Salivary Glands	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Trachea	* Urinary Bladder
* Uterus			

MISSING

\* Lymph Node, Bronchial

OBSERVATIONS

* Adrenal Cortex		Angiectasis	Mild
* Brain		Oligodendroglioma Benign	
	[ Oligodendroglioma Benign TGLs = 1-1 ]		
* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Mild
* Liver		Basophilic Focus	
		Fatty Change	Minimal
* Lung		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Moderate
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Mild
	Alveolus	Proteinosis	Minimal
	[ Infiltration Cellular TGLs = 2-4+5 ]		
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 535

**TRT#:** 6

**SEX:** Female

**DAY ON TEST:** 633

**DOSE:** 30 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60455

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Mild
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
* Spleen		Hematopoietic Cell Proliferation	Minimal
* Thymus		Atrophy	Mild
* Thyroid Gland	C Cell	Hyperplasia	Mild

---

**PRIMARY CAUSE OF DEATH** - Brain Oligodendroglioma Benign

---

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 536

TRT#: 6

SEX: Female

DAY ON TEST: 732

DOSE: 30 mg/m3

DISP: Terminal Sacrifice

HISTO: 60456

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Esophagus	* Eye	* Harderian Gland
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Lymph Node, Mandibular
* Lymph Node, Mesenteric	* Mammary Gland	* Ovary	* Pancreas
* Parathyroid Gland	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Trachea	* Urinary Bladder
* Uterus			

MISSING

\* Lymph Node, Mediastinal

OBSERVATIONS

* Adrenal Cortex		Hypertrophy	Minimal
		Vacuolization Cytoplasmic	Minimal
* Clitoral Gland		Inflammation	Moderate
* Heart		Cardiomyopathy	Minimal
* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Mild
* Liver	Bile Duct	Cyst	Mild
* Lung		Fibrosis	Minimal
		Hyperplasia	Mild
	Alveolar Epith	Hyperplasia	Lymphohistiocy, Minimal
	BALT	Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Mild
		Proteinosis	Mild
	Alveolus		
	[ Infiltration Cellular TGLs = 3-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 20523 - 03  
Test Type: CHRONIC  
Route: RESPIRATORY EXPOSURE WHOLE BODY  
Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Metal working fluids (Trim VX)  
CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
Time Report Requested: 09:56:24  
First Dose M/F: 07/20/09 / 07/20/09  
Lab: BNW

ANIMAL ID: 536

TRT#: 6

SEX: Female

DAY ON TEST: 732

DOSE: 30 mg/m3

DISP: Terminal Sacrifice

HISTO: 60456

ORGAN AND ACCOUNTABLE SITE STATUS

	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
	[ Hyperplasia TGLs = 1-10 ]		
* Thymus		Thymoma Benign	
	[ Thymoma Benign TGLs = 2-3 ]		
* Thyroid Gland	Follicle	Hyperplasia	Minimal
	C Cell	Hyperplasia	Mild

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 537

TRT#: 6

SEX: Female

DAY ON TEST: 708

DOSE: 30 mg/m3

DISP: Moribund Sacrifice

HISTO: 60457

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Clitoral Gland	* Esophagus	* Eye	* Harderian Gland
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Liver
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Ovary	* Pancreas	* Parathyroid Gland	* Salivary Glands
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Trachea
* Urinary Bladder			

**OBSERVATIONS**

* Adrenal Cortex		Angiectasis	Marked
	[ Angiectasis TGLs = 4-7 ]		
* Brain		Compression	Moderate
* Heart		Cardiomyopathy	Mild
* Kidney		Nephropathy	Mild
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
	Epiglottis	Metaplasia	Squamous, Mild
* Lung		Fibrosis	Mild
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Mild
	Alveolus	Proteinosis	Mild
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Adenoma	
	[ Adenoma TGLs = 2-10 ]		

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 537

**TRT#:** 6

**SEX:** Female

**DAY ON TEST:** 708

**DOSE:** 30 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60457

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

* Spleen	Lymph Follic	Atrophy	Mild
* Thymus		Atrophy	Marked
* Thyroid Gland	C Cell	Hyperplasia	Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Minimal
		Polyp Stromal	

[ Polyp Stromal TGLs = 3-10 ]

---

**PRIMARY CAUSE OF DEATH** - Pituitary Gland Pars Distalis Adenoma

---

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 538

TRT#: 6

SEX: Female

DAY ON TEST: 674

DOSE: 30 mg/m3

DISP: Moribund Sacrifice

HISTO: 60458

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Blood Vessel	* Bone	* Bone Marrow	* Brain
* Clitoral Gland	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Kidney	* Liver	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Ovary	* Pancreas
* Salivary Glands	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Trachea	* Urinary Bladder
* Uterus			

MISSING

\* Parathyroid Gland

OBSERVATIONS

* Adrenal Cortex		Angiectasis	Minimal
		Hypertrophy	Mild
		Vacuolization Cytoplasmic	Minimal
* Adrenal Medulla		Pheochromocytoma Malignant	
	[ Pheochromocytoma Malignant TGLs = 5-7 ]		
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
	Epiglottis	Metaplasia	Squamous, Mild
* Lung		Fibrosis	Minimal
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Mild
	Alveolus	Proteinosis	Minimal
	[ Infiltration Cellular TGLs = 3-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 538

**TRT#:** 6

**SEX:** Female

**DAY ON TEST:** 674

**DOSE:** 30 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60458

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

\* Pituitary Gland

Pars Distalis

Adenoma

[ Adenoma TGLs = 4-10 ]

\* Thyroid Gland

C Cell

Hyperplasia

Mild

---

PRIMARY CAUSE OF DEATH

- Pituitary Gland Pars Distalis Adenoma

---

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 539

TRT#: 6

SEX: Female

DAY ON TEST: 667

DOSE: 30 mg/m3

DISP: Moribund Sacrifice

HISTO: 60459

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Clitoral Gland	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Liver	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Ovary
* Pancreas	* Parathyroid Gland	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thyroid Gland
* Trachea	* Urinary Bladder	* Uterus	

**OBSERVATIONS**

* Adrenal Cortex		Angiectasis	Mild
		Vacuolization Cytoplasmic	Minimal
* Brain		Compression	Marked
		Hydrocephalus	Marked
* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Metaplasia	Squamous, Mild
* Lung		Fibrosis	Minimal
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Mild
	Alveolus	Proteinosis	Minimal
	[ Infiltration Cellular TGLs = 3-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Minimal
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Minimal
* Mammary Gland	Duct	Cyst	Mild
	[ Cyst TGLs = 5-14 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Adenoma	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 539

**TRT#:** 6

**SEX:** Female

**DAY ON TEST:** 667

**DOSE:** 30 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60459

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

[ Adenoma TGLs = 4-10 ]

\* Thymus

Atrophy

Minimal

---

PRIMARY CAUSE OF DEATH

- Pituitary Gland Pars Distalis Adenoma

---

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 540

TRT#: 6

SEX: Female

DAY ON TEST: 516

DOSE: 30 mg/m3

DISP: Moribund Sacrifice

HISTO: 60460

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Liver	* Lymph Node, Bronchial	* Lymph Node, Mandibular
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Ovary	* Pancreas
* Parathyroid Gland	* Salivary Glands	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Trachea	* Urinary Bladder

OBSERVATIONS

* Adrenal Cortex		Angiectasis	Minimal
		Hypertrophy	Minimal
* Kidney	Pelvis	Inflammation	Mild
	[ Inflammation TGLs = 5-7 ]		
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
	Epiglottis	Metaplasia	Squamous, Mild
* Lung		Fibrosis	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Mild
	Alveolus	Proteinosis	Minimal
	[ Infiltration Cellular TGLs = 2-4+5 ]		
* Mammary Gland	Duct	Cyst	Mild
	[ Cyst TGLs = 1-15 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Adenoma	
	[ Adenoma TGLs = 4-10 ]		
* Spleen		Hematopoietic Cell Proliferation	Minimal

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 540

**TRT#:** 6

**SEX:** Female

**DAY ON TEST:** 516

**DOSE:** 30 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60460

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

* Thyroid Gland	C Cell	Hyperplasia	Mild
* Uterus	Endometrium	Hyperplasia	Cystic, Minimal
Zymbal's Gland		Carcinoma	
[ Carcinoma TGLs = 3-14 ]			

---

**PRIMARY CAUSE OF DEATH** - Zymbal's Gland Carcinoma

---

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 541

TRT#: 6

SEX: Female

DAY ON TEST: 677

DOSE: 30 mg/m3

DISP: Natural Death

HISTO: 60461

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Liver	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Mammary Gland	* Ovary	* Pancreas	* Salivary Glands
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Trachea
* Urinary Bladder			

MISSING

* Lymph Node, Mediastinal	* Parathyroid Gland
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OBSERVATIONS

* Adrenal Cortex		Necrosis	Marked
[ Necrosis TGLs = 5-7 ]			
* Kidney	Pelvis	Inflammation	Minimal
		Nephropathy	Mild
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
		Infiltration Cellular	Mixed Cell, Mild
	Epiglottis	Metaplasia	Squamous, Moderate
* Lung		Fibrosis	Mild
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Mild
	Alveolus	Proteinosis	Moderate
[ Infiltration Cellular TGLs = 3-4+5 ]			
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Adenoma	

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
Test Type: CHRONIC  
Route: RESPIRATORY EXPOSURE WHOLE BODY  
Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Metal working fluids (Trim VX)  
CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
Time Report Requested: 09:56:24  
First Dose M/F: 07/20/09 / 07/20/09  
Lab: BNW

ANIMAL ID: 541

TRT#: 6

SEX: Female

DAY ON TEST: 677

DOSE: 30 mg/m3

DISP: Natural Death

HISTO: 60461

ORGAN AND ACCOUNTABLE SITE STATUS

[ Adenoma TGLs = 6-10 ]			
* Skin		Inflammation	Mild
[ Inflammation TGLs = 2-15 ]			
* Spleen	Lymph Follic	Atrophy	Mild
* Thyroid Gland	Follicle	Adenoma	
[ Adenoma TGLs = 7-3 ]			
* Uterus		Adenoma	
[ Adenoma TGLs = 8-10 ]			

PRIMARY CAUSE OF DEATH - Adrenal Cortex Necrosis

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 542

TRT#: 6

SEX: Female

DAY ON TEST: 732

DOSE: 30 mg/m3

DISP: Terminal Sacrifice

HISTO: 60462

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Liver	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Ovary	* Pancreas	* Parathyroid Gland	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Trachea	* Urinary Bladder	* Uterus

MISSING

\* Lymph Node, Mandibular

OBSERVATIONS

* Adrenal Cortex		Hypertrophy	Minimal
		Vacuolization Cytoplasmic	Minimal
* Harderian Gland		Inflammation	Minimal
* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Mild
* Lung		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Mild
	Alveolus	Proteinosis	Mild
	[ Infiltration Cellular TGLs = 2-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Minimal
Mesentery	Fat	Necrosis	Minimal
	[ Necrosis TGLs = 3-7 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 542

**TRT#:** 6

**SEX:** Female

**DAY ON TEST:** 732

**DOSE:** 30 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60462

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Adenoma	
	Pars Distalis	Hyperplasia	Mild
[ Adenoma TGLs = 1-10 ]			
* Thyroid Gland	C Cell	Hyperplasia	Mild

---

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 543

TRT#: 6

SEX: Female

DAY ON TEST: 593

DOSE: 30 mg/m3

DISP: Moribund Sacrifice

HISTO: 60463

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Esophagus	* Eye
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Kidney	* Liver	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Mammary Gland	* Ovary	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Salivary Glands	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Trachea	* Urinary Bladder	

**OBSERVATIONS**

* Clitoral Gland		Inflammation	Minimal
* Harderian Gland		Inflammation	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
	Epiglottis	Metaplasia	Squamous, Mild
* Lung		Fibrosis	Minimal
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Mild
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Minimal
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Mild
Mesentery	Fat	Necrosis	Minimal
	[ Necrosis TGLs = 4-7 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild
		Inflammation	Suppurative, Mild
* Spleen		Hematopoietic Cell Proliferation	Minimal
	[ Hematopoietic Cell Proliferation TGLs = 2-6 ]		
* Thymus		Atrophy	Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 543

**TRT#:** 6

**SEX:** Female

**DAY ON TEST:** 593

**DOSE:** 30 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60463

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

\* Thyroid Gland

C Cell

Hyperplasia

Mild

\* Uterus

Schwannoma Malignant

[ Schwannoma Malignant TGLs = 3-14+15+16 ]

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PRIMARY CAUSE OF DEATH

- Uterus Schwannoma Malignant

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 544

TRT#: 6

SEX: Female

DAY ON TEST: 689

DOSE: 30 mg/m3

DISP: Moribund Sacrifice

HISTO: 60464

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Ovary
* Parathyroid Gland	* Salivary Glands	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Trachea	* Urinary Bladder	

OBSERVATIONS

* Clitoral Gland		Inflammation	Mild
* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Metaplasia	Squamous, Mild
* Liver	Bile Duct	Hyperplasia	Minimal
		Necrosis	Marked
	[ Necrosis TGLs = 9-6 ]		
* Lung		Carcinoma	Metastatic (Uterus)
		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Mild
	Alveolar Epith	Hyperplasia	Moderate
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Mild
	Alveolus	Proteinosis	Minimal
	[ Infiltration Cellular TGLs = 3-4+5 ]		
	Lymph Node Pancreatic	Adenocarcinoma	Metastatic (Uterus)
	[ Adenocarcinoma TGLs = 8-18 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Moderate
* Lymph Node, Mediastinal		Hyperplasia	Plasma Cell, Mild
	[ Hyperplasia TGLs = 5-3 ]		
* Mammary Gland		Hyperplasia	Minimal
	[ Hyperplasia TGLs = 1-14 ]		
Mesentery		Adenocarcinoma	Metastatic (Uterus)

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 544

**TRT#:** 6

**SEX:** Female

**DAY ON TEST:** 689

**DOSE:** 30 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60464

**ORGAN AND ACCOUNTABLE SITE STATUS**

* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Respirat Epith	Hyperplasia	Minimal
	Transit Epithe	Hyperplasia	Minimal
* Pancreas		Adenocarcinoma	Metastatic (Uterus)
	[ Adenocarcinoma TGLs = 6-16+17 ]		
* Pituitary Gland	Pars Distalis	Hyperplasia	Mild
	[ Hyperplasia TGLs = 11-10 ]		
Skeletal Muscle		Adenocarcinoma	Metastatic (Uterus)
	[ Adenocarcinoma TGLs = 2-19 ]		
* Spleen		Hematopoietic Cell Proliferation	Mild
	[ Hematopoietic Cell Proliferation TGLs = 7-17 ]		
* Thymus		Atrophy	Marked
* Thyroid Gland	C Cell	Hyperplasia	Mild
* Uterus		Adenocarcinoma	
		Sarcoma Stromal	
	[ Adenocarcinoma TGLs = 10-15 ]		
	[ Sarcoma Stromal TGLs = 12-20 ]		

PRIMARY CAUSE OF DEATH - Uterus Adenocarcinoma

CONTRIBUTORY CAUSE OF DEATH - Uterus Sarcoma Stromal

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 545

TRT#: 6

SEX: Female

DAY ON TEST: 614

DOSE: 30 mg/m3

DISP: Moribund Sacrifice

HISTO: 60465

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Clitoral Gland	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Liver	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Ovary	* Pancreas	* Parathyroid Gland
* Salivary Glands	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Trachea	* Urinary Bladder	* Uterus	

OBSERVATIONS

* Adrenal Cortex		Angiectasis	Minimal
* Brain		Compression	Moderate
* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Metaplasia	Squamous, Mild
* Lung		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Mild
	Alveolus	Proteinosis	Minimal
	[ Infiltration Cellular TGLs = 5-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Mild
Mesentery	Fat	Necrosis	Minimal
	[ Necrosis TGLs = 4-7 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Mild
	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Adenoma	
	[ Adenoma TGLs = 3-10 ]		

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 545

**TRT#:** 6

**SEX:** Female

**DAY ON TEST:** 614

**DOSE:** 30 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60465

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Spleen	Lymph Follic	Atrophy	Minimal
* Thymus		Thymoma Benign	
* Thyroid Gland	C Cell	Hyperplasia	Minimal
	Follicle	Hyperplasia	Minimal

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**PRIMARY CAUSE OF DEATH** - Pituitary Gland Pars Distalis Adenoma

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 546

TRT#: 6

SEX: Female

DAY ON TEST: 733

DOSE: 30 mg/m3

DISP: Terminal Sacrifice

HISTO: 60466

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Lymph Node, Mandibular
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Ovary
* Pancreas	* Parathyroid Gland	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Trachea
* Urinary Bladder	* Uterus		

OBSERVATIONS

* Larynx	Epiglottis	Metaplasia	Squamous, Minimal
* Liver		Basophilic Focus	
* Lung		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Moderate
	BALT	Hyperplasia	Lymphohistiocy, Minimal
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Mild
	Alveolus	Proteinosis	Minimal
[ Infiltration Cellular	TGLs = 1-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Respirat Epith	Hyperplasia	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Adenoma	
* Thymus		Thymoma Benign	
[ Thymoma Benign	TGLs = 2-14+15 ]		

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 546

**TRT#:** 6

**SEX:** Female

**DAY ON TEST:** 733

**DOSE:** 30 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60466

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* Thyroid Gland

C Cell

Adenoma

C Cell

Hyperplasia

Minimal

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**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 547

**TRT#:** 6

**SEX:** Female

**DAY ON TEST:** 732

**DOSE:** 30 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60467

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Clitoral Gland	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Liver	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Ovary	* Pancreas	* Parathyroid Gland	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Trachea	* Urinary Bladder	* Uterus	

**MISSING**

\* Lymph Node, Bronchial

**OBSERVATIONS**

* Adrenal Cortex		Necrosis	Mild
[ Necrosis TGLs = 3-7 ]			
* Brain		Compression	Moderate
* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Metaplasia	Squamous, Mild
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Mild
	BALT	Hyperplasia	Lymphohistiocy, Minimal
		Infiltration Cellular	Histiocyte, Mild
	Alveolus	Inflammation	Chronic Active, Mild
[ Infiltration Cellular TGLs = 5-4+5 ]		Proteinosis	Minimal
* Mammary Gland		Carcinoma	Multiple
[ Carcinoma TGLs = 1,2-14+15 ]			
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 547

**TRT#:** 6

**SEX:** Female

**DAY ON TEST:** 732

**DOSE:** 30 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60467

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Pituitary Gland [ Adenoma TGLs = 6-10 ]	Pars Distalis	Inflammation Adenoma	Suppurative, Mild
* Thymus [ Thymoma Benign TGLs = 4-3 ]		Thymoma Benign	
* Thyroid Gland	C Cell	Hyperplasia	Mild

---

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 548

TRT#: 6

SEX: Female

DAY ON TEST: 733

DOSE: 30 mg/m3

DISP: Terminal Sacrifice

HISTO: 60468

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * Adrenal Cortex            | * Adrenal Medulla        | Blood Vessel               | * Bone                    |
| * Bone Marrow               | * Esophagus              | * Eye                      | * Harderian Gland         |
| * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   | * Intestine Large, Rectum |
| * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic      |
| * Liver                     | * Lymph Node, Mandibular | * Lymph Node, Mediastinal  | * Lymph Node, Mesenteric  |
| * Pancreas                  | * Parathyroid Gland      | * Salivary Glands          | * Skin                    |
| * Spleen                    | * Stomach, Forestomach   | * Stomach, Glandular       | * Thymus                  |
| * Trachea                   | * Urinary Bladder        |                            |                           |

OBSERVATIONS

- |                         |  |                               |                         |
|-------------------------|--|-------------------------------|-------------------------|
| * Brain                 |  | Compression                   | Mild                    |
| * Clitoral Gland        |  | Inflammation                  | Minimal                 |
| * Kidney                | Pelvis                                 | Inflammation                  | Minimal                 |
| * Larynx                | Epiglottis                             | Hyperplasia                   | Squamous, Minimal       |
|                         |  | Infiltration Cellular         | Mixed Cell, Mild        |
|                         | Epiglottis                             | Metaplasia                    | Squamous, Mild          |
| * Lung                  |  | Fibrosis                      | Minimal                 |
|                         | Alveolar Epith                         | Hyperplasia                   | Minimal                 |
|                         |  | Infiltration Cellular         | Histiocyte, Mild        |
|                         |  | Inflammation                  | Chronic Active, Mild    |
|                         | [ Infiltration Cellular TGLs = 2-4+5 ] |                               |                         |
| * Lymph Node, Bronchial |  | Hyperplasia                   | Lymphohistiocy, Minimal |
| * Mammary Gland         |  | Hyperplasia                   | Mild                    |
| * Nose                  | Olfactory Epi                          | Accumulation, Hyaline Droplet | Mild                    |
|                         | Respirat Epith                         | Accumulation, Hyaline Droplet | Minimal                 |
|                         | Goblet Cell                            | Hyperplasia                   | Minimal                 |
|                         | Respirat Epith                         | Hyperplasia                   | Minimal                 |
|                         | Glands, Olfactory Epi                  | Hyperplasia                   | Minimal                 |
|                         |  | Inflammation                  | Suppurative, Minimal    |
| * Ovary                 |  | Cyst                          | Mild                    |
|                         | [ Cyst TGLs = 1-9 ]                    |                               |                         |

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 548

**TRT#:** 6

**SEX:** Female

**DAY ON TEST:** 733

**DOSE:** 30 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60468

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Pituitary Gland [ Adenoma TGLs = 3-10 ]	Pars Distalis	Adenoma	
* Thyroid Gland	C Cell	Adenoma	
* Uterus	Endometrium	Hyperplasia	Cystic, Minimal

---

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 549

TRT#: 6

SEX: Female

DAY ON TEST: 732

DOSE: 30 mg/m3

DISP: Terminal Sacrifice

HISTO: 60469

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Clitoral Gland	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Liver	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Ovary
* Pancreas	* Parathyroid Gland	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Trachea	* Urinary Bladder	* Uterus	

OBSERVATIONS

* Adrenal Cortex		Angiectasis	Mild
* Brain		Compression	Mild
* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Metaplasia	Squamous, Minimal
* Lung		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Mild
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Mild
	[ Infiltration Cellular TGLs = 3-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Mild
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Minimal
* Mammary Gland	Duct	Cyst	Minimal
	[ Cyst TGLs = 1,2-14 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Mild
	Glands, Olfactory Epi	Hyperplasia	Minimal
	Respirat Epith	Hyperplasia	Minimal
		Inflammation	Suppurative, Mild
* Pituitary Gland	Pars Distalis	Adenoma	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 549

**TRT#:** 6

**SEX:** Female

**DAY ON TEST:** 732

**DOSE:** 30 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60469

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

[ Adenoma TGLs = 4-10 ]

\* Thyroid Gland

C Cell

Hyperplasia

Mild

Follicle

Hyperplasia

Minimal

---

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 550

TRT#: 6

SEX: Female

DAY ON TEST: 731

DOSE: 30 mg/m3

DISP: Terminal Sacrifice

HISTO: 60470

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Clitoral Gland	* Esophagus	* Eye	* Harderian Gland
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Liver
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Ovary	* Pancreas	* Parathyroid Gland	* Salivary Glands
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Trachea	* Urinary Bladder	* Uterus	

OBSERVATIONS

* Adrenal Cortex		Angiectasis	Minimal
* Brain		Compression	Moderate
		Hydrocephalus	Minimal
* Heart		Cardiomyopathy	Minimal
* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Mild
* Lung		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Mild
	Alveolus	Proteinosis	Mild
[ Infiltration Cellular	TGLs = 2-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
	Transit Epithe	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 550

**TRT#:** 6

**SEX:** Female

**DAY ON TEST:** 731

**DOSE:** 30 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60470

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Pituitary Gland	Pars Distalis	Inflammation	Suppurative, Minimal
[ Adenoma TGLs = 3-10 ]		Adenoma	
* Skin	Epidermis	Squamous Cell Papilloma	
[ Squamous Cell Papilloma TGLs = 1-16 ]			
* Thyroid Gland	C Cell	Hyperplasia	Mild

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 701

TRT#: 8

SEX: Female

DAY ON TEST: 603

DOSE: 100 mg/m3

DISP: Moribund Sacrifice

HISTO: 60321

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Clitoral Gland	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Mammary Gland	* Ovary
* Pancreas	* Parathyroid Gland	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Trachea
* Urinary Bladder	* Uterus		

OBSERVATIONS

* Adrenal Cortex		Angiectasis	Minimal
		Vacuolization Cytoplasmic	Minimal
* Brain		Compression	Moderate
		Hydrocephalus	Moderate
* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Mild
* Liver		Basophilic Focus	
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Minimal
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Chronic Active, Moderate
	Alveolar Epith	Metaplasia	Squamous, Minimal
	Alveolus	Proteinosis	Moderate
	[ Infiltration Cellular TGLs = 2-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Mild
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 701

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 603

**DOSE:** 100 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60321

**ORGAN AND ACCOUNTABLE SITE STATUS**

	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Adenoma	
[ Adenoma TGLs = 3-10 ]			
* Thymus		Atrophy	Minimal
* Thyroid Gland	C Cell	Hyperplasia	Minimal

**PRIMARY CAUSE OF DEATH** - Pituitary Gland Pars Distalis Adenoma

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 702

TRT#: 8

SEX: Female

DAY ON TEST: 436

DOSE: 100 mg/m3

DISP: Moribund Sacrifice

HISTO: 60322

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex          | * Adrenal Medulla           | Blood Vessel             | * Bone                     |
| * Bone Marrow             | * Clitoral Gland            | * Esophagus              | * Eye                      |
| * Harderian Gland         | * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic      | * Kidney                    | * Liver                  | * Lymph Node, Mandibular   |
| * Lymph Node, Mesenteric  | * Mammary Gland             | * Ovary                  | * Pancreas                 |
| * Parathyroid Gland       | * Salivary Glands           | * Skin                   | * Spleen                   |
| * Stomach, Forestomach    | * Stomach, Glandular        | * Trachea                | * Urinary Bladder          |
| * Uterus                  |                             |                          |                            |

OBSERVATIONS

- |                           |  |                               |                          |
|---------------------------|--|-------------------------------|--------------------------|
| * Brain                   |  | Compression                   | Moderate                 |
|                           |  | Hydrocephalus                 | Mild                     |
| * Larynx                  | Epiglottis                             | Hyperplasia                   | Squamous, Minimal        |
|                           | Epiglottis                             | Metaplasia                    | Squamous, Moderate       |
| * Lung                    |  | Fibrosis                      | Minimal                  |
|                           | Alv/Bron Epith                         | Hyperplasia                   | Minimal                  |
|                           | Alveolar Epith                         | Hyperplasia                   | Mild                     |
|                           |  | Infiltration Cellular         | Histiocyte, Moderate     |
|                           |  | Inflammation                  | Chronic Active, Moderate |
|                           | Alveolus                               | Proteinosis                   | Moderate                 |
|                           | [ Infiltration Cellular TGLs = 3-4+5 ] |                               |                          |
| * Lymph Node, Bronchial   |  | Hyperplasia                   | Lymphohistiocy, Mild     |
| * Lymph Node, Mediastinal |  | Hyperplasia                   | Lymphohistiocy, Mild     |
| * Nose                    | Olfactory Epi                          | Accumulation, Hyaline Droplet | Moderate                 |
|                           | Respirat Epith                         | Accumulation, Hyaline Droplet | Minimal                  |
|                           | Goblet Cell                            | Hyperplasia                   | Minimal                  |
|                           | Glands, Olfactory Epi                  | Hyperplasia                   | Minimal                  |
|                           |  | Inflammation                  | Suppurative, Minimal     |
| * Pituitary Gland         | Pars Distalis                          | Adenoma                       |                          |
|                           | [ Adenoma TGLs = 4-10 ]                |                               |                          |

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 702

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 436

**DOSE:** 100 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60322

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* Thymus

Atrophy

Minimal

Thymoma Benign

\* Thyroid Gland

C Cell

Hyperplasia

Minimal

---

PRIMARY CAUSE OF DEATH

- Pituitary Gland Pars Distalis Adenoma

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 703

TRT#: 8

SEX: Female

DAY ON TEST: 733

DOSE: 100 mg/m3

DISP: Terminal Sacrifice

HISTO: 60323

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Mammary Gland	* Ovary
* Pancreas	* Parathyroid Gland	* Salivary Glands	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Trachea
* Urinary Bladder			

INSUFFICIENT TISSUE

\* Lymph Node, Bronchial

OBSERVATIONS

* Adrenal Cortex		Hyperplasia	Minimal
		Hypertrophy	Minimal
		Vacuolization Cytoplasmic	Minimal
* Eye	Retina	Atrophy	Mild
		Cataract	Moderate
	[ Cataract TGLs = 1-13 ]		
* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Moderate
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Moderate
* Liver		Basophilic Focus	
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Mild
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Chronic Active, Moderate
	Alveolus	Proteinosis	Moderate
	[ Infiltration Cellular TGLs = 5-4+5 ]		
* Lymph Node, Mediastinal		Hyperplasia	Plasma Cell, Marked

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 703

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 733

**DOSE:** 100 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60323

**ORGAN AND ACCOUNTABLE SITE STATUS**

* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
	Transit Epithe	Hyperplasia	Mild
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
* Spleen		Hematopoietic Cell Proliferation	Minimal
* Thyroid Gland	C Cell	Hyperplasia	Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Moderate
	Epithelium	Metaplasia	Squamous, Marked
		Thrombosis	Moderate
	[ Hyperplasia	TGLs = 3-10 ]	
	[ Metaplasia	TGLs = 2-15+16 ]	
	[ Thrombosis	TGLs = 4-14 ]	

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 704

TRT#: 8

SEX: Female

DAY ON TEST: 732

DOSE: 100 mg/m3

DISP: Terminal Sacrifice

HISTO: 60324

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Liver	* Lymph Node, Mandibular
* Lymph Node, Mediastinal	* Mammary Gland	* Ovary	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Trachea
* Urinary Bladder	* Uterus		

MISSING

\* Thymus

OBSERVATIONS

* Adrenal Cortex		Hypertrophy	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Moderate
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Moderate
* Lung		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Moderate
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Chronic Active, Moderate
	Alveolar Epith	Metaplasia	Squamous, Mild
	Alveolus	Proteinosis	Moderate
	[ Infiltration Cellular TGLs = 2-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Mild
* Lymph Node, Mesenteric		Hemangiosarcoma	
	[ Hemangiosarcoma TGLs = 3-14 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 704

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 732

**DOSE:** 100 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60324

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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	Glands, Olfactory Epi	Hyperplasia Inflammation	Minimal Suppurative, Minimal
* Thyroid Gland	Follicle C Cell	Hyperplasia Hyperplasia	Moderate Minimal

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 705

TRT#: 8

SEX: Female

DAY ON TEST: 732

DOSE: 100 mg/m3

DISP: Terminal Sacrifice

HISTO: 60325

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lymph Node, Mandibular	* Mammary Gland	* Pancreas	* Parathyroid Gland
* Salivary Glands	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Trachea	* Urinary Bladder
* Uterus			

OBSERVATIONS

* Adrenal Cortex		Angiectasis	Mild
		Vacuolization Cytoplasmic	Minimal
* Clitoral Gland		Inflammation	Moderate
* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Moderate
* Liver		Basophilic Focus	
		Clear Cell Focus	
* Lung		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Moderate
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Chronic Active, Moderate
	Alveolar Epith	Metaplasia	Squamous, Mild
	Alveolus	Proteinosis	Moderate
	[ Infiltration Cellular TGLs = 2-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Moderate
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Moderate
* Lymph Node, Mesenteric		Hyperplasia	Plasma Cell, Moderate
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 705

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 732

**DOSE:** 100 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60325

**ORGAN AND ACCOUNTABLE SITE STATUS**

	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Moderate
		Inflammation	Suppurative, Minimal
* Ovary		Cyst	Minimal
	[ Cyst TGLs = 3-9 ]		
* Pituitary Gland	Pars Distalis	Adenoma	Multiple
	[ Adenoma TGLs = 1-10 ]		
* Thyroid Gland	Follicle	Hyperplasia	Minimal
	C Cell	Hyperplasia	Minimal

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 706

TRT#: 8

SEX: Female

DAY ON TEST: 731

DOSE: 100 mg/m3

DISP: Terminal Sacrifice

HISTO: 60326

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Liver	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Mammary Gland
* Ovary	* Pancreas	* Parathyroid Gland	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Trachea	* Urinary Bladder	* Uterus

**OBSERVATIONS**

* Adrenal Cortex		Angiectasis	Mild
		Hypertrophy	Minimal
		Vacuolization Cytoplasmic	Minimal
* Clitoral Gland		Inflammation	Minimal
* Kidney	Pelvis	Inflammation	Mild
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
		Inflammation	Chronic Active, Minimal
	Epiglottis	Metaplasia	Squamous, Moderate
* Lung		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Marked
	Alveolar Epith	Hyperplasia	Moderate
		Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Chronic Active, Marked
	Alveolus	Proteinosis	Marked
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Mild
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Moderate
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 706

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 731

**DOSE:** 100 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60326

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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	Respirat Epith	Hyperplasia	Minimal
	Transit Epithe	Hyperplasia	Mild
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Mild
[ Hyperplasia TGLs = 2-10 ]			
* Thyroid Gland	C Cell	Hyperplasia	Mild

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 707

TRT#: 8

SEX: Female

DAY ON TEST: 731

DOSE: 100 mg/m3

DISP: Terminal Sacrifice

HISTO: 60327

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Lymph Node, Mandibular
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Pancreas
* Salivary Glands	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Trachea	* Urinary Bladder

**MISSING**

\* Parathyroid Gland

**OBSERVATIONS**

* Larynx	Epiglottis	Hyperplasia Infiltration Cellular	Squamous, Mild Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Moderate
* Liver		Basophilic Focus Clear Cell Focus	
* Lung		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Marked
	Alveolar Epith	Hyperplasia	Moderate
	BALT	Hyperplasia Infiltration Cellular	Lymphohistiocy, Minimal Histiocyte, Moderate
		Inflammation	Chronic Active, Marked
	Alveolar Epith	Metaplasia	Squamous, Minimal
	Alveolus	Proteinosis	Marked
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Mild
	Glands, Olfactory Epi	Hyperplasia	Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 707

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 731

**DOSE:** 100 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60327

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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	Respirat Epith	Hyperplasia	Minimal
	Transit Epithe	Hyperplasia	Mild
		Inflammation	Suppurative, Minimal
* Ovary		Cyst	Minimal
	[ Cyst TGLs = 2-9 ]		
* Pituitary Gland	Pars Distalis	Hyperplasia	Mild
* Thyroid Gland	C Cell	Hyperplasia	Mild
* Uterus		Polyp Stromal	
	[ Polyp Stromal TGLs = 3-10 ]		

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 708

TRT#: 8

SEX: Female

DAY ON TEST: 732

DOSE: 100 mg/m3

DISP: Terminal Sacrifice

HISTO: 60328

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Bronchial	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Ovary	* Pancreas	* Parathyroid Gland
* Salivary Glands	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Trachea	* Urinary Bladder	

OBSERVATIONS

* Adrenal Cortex		Angiectasis	Moderate
		Hypertrophy	Mild
		Vacuolization Cytoplasmic	Minimal
* Kidney	Renal Tubule	Cyst	Mild
		Nephropathy	Minimal
	[ Cyst TGLs = 7-7 ]		
* Larynx	Epiglottis	Hyperplasia	Squamous, Moderate
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Moderate
* Liver		Basophilic Focus	
* Lung		Fibrosis	Mild
	Alveolar Epith	Hyperplasia	Moderate
	Alv/Bron Epith	Hyperplasia	Moderate
		Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Chronic Active, Moderate
	Alveolar Epith	Metaplasia	Squamous, Mild
	Alveolus	Proteinosis	Marked
	[ Infiltration Cellular TGLs = 2-4+5 ]		
* Mammary Gland		Fibroadenoma	Multiple
	[ Fibroadenoma TGLs = 1,8-14+15+16 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 708

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 732

**DOSE:** 100 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60328

**ORGAN AND ACCOUNTABLE SITE STATUS**

	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild
	Transit Epithe	Hyperplasia	Minimal
		Inflammation	Suppurative, Mild
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
	[ Hyperplasia TGLs = 3-10 ]		
* Thymus		Thymoma Benign	
	[ Thymoma Benign TGLs = 6-3 ]		
* Thyroid Gland	C Cell	Hyperplasia	Mild
* Uterus	Endometrium	Adenoma Hyperplasia	Cystic, Minimal
	[ Adenoma TGLs = 5-10 ]		

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 709

TRT#: 8

SEX: Female

DAY ON TEST: 732

DOSE: 100 mg/m3

DISP: Terminal Sacrifice

HISTO: 60329

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Liver	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Mammary Gland	* Ovary	* Pancreas	* Parathyroid Gland
* Salivary Glands	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Trachea	* Urinary Bladder	* Uterus

MISSING

\* Lymph Node, Bronchial

OBSERVATIONS

* Brain		Compression	Moderate
* Kidney	Renal Tubule	Cyst	Mild
	Pelvis	Inflammation	Minimal
	[ Cyst TGLs = 3-7 ]		
* Larynx	Epiglottis	Hyperplasia	Squamous, Moderate
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Moderate
* Lung		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Moderate
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Chronic Active, Moderate
	Alveolus	Proteinosis	Moderate
	[ Infiltration Cellular TGLs = 2-4+5 ]		
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 709

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 732

**DOSE:** 100 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60329

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Pituitary Gland [ Adenoma TGLs = 1-10 ]	Pars Distalis	Inflammation Adenoma	Suppurative, Minimal
* Spleen		Hematopoietic Cell Proliferation	Minimal
* Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Mild

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 710

TRT#: 8

SEX: Female

DAY ON TEST: 732

DOSE: 100 mg/m3

DISP: Terminal Sacrifice

HISTO: 60330

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Liver	* Lymph Node, Mandibular
* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thyroid Gland	* Trachea	* Urinary Bladder	* Uterus

MISSING

\* Lymph Node, Mediastinal

OBSERVATIONS

* Clitoral Gland		Inflammation	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Moderate
	Epiglottis	Metaplasia	Squamous, Moderate
* Lung		Alveolar/Bronchiolar Adenoma	Multiple
		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Marked
	Alveolar Epith	Hyperplasia	Marked
	BALT	Hyperplasia	Lymphohistiocy, Mild
		Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Chronic Active, Marked
	Alveolus	Proteinosis	Moderate
	[ Infiltration Cellular TGLs = 2-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Minimal
* Mammary Gland		Fibroadenoma	
	[ Fibroadenoma TGLs = 1-14+15+16 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 710

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 732

**DOSE:** 100 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60330

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Ovary		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Granulosa Cell Tumor Benign	
* Thymus		Hyperplasia	Minimal
		Thymoma Benign	
[ Thymoma Benign TGLs = 3-3 ]			

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 711

TRT#: 8

SEX: Female

DAY ON TEST: 687

DOSE: 100 mg/m3

DISP: Moribund Sacrifice

HISTO: 60331

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Lymph Node, Bronchial	* Lymph Node, Mandibular
* Lymph Node, Mesenteric	* Ovary	* Pancreas	* Parathyroid Gland
* Salivary Glands	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Thyroid Gland	* Trachea	* Urinary Bladder	* Uterus

OBSERVATIONS

* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
	Epiglottis	Metaplasia	Squamous, Mild
* Liver		Basophilic Focus	
* Lung		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Moderate
	Alveolar Epith	Hyperplasia	Moderate
		Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Chronic Active, Moderate
	Alveolar Epith	Metaplasia	Squamous, Minimal
	Alveolus	Proteinosis	Moderate
	[ Infiltration Cellular TGLs = 2-4+5 ]		
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Moderate
* Mammary Gland		Carcinoma	
	[ Carcinoma TGLs = 1-15+16 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild
	Respirat Epith	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 711

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 687

**DOSE:** 100 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60331

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Pituitary Gland	Olfactory Epi Pars Distalis	Metaplasia Hyperplasia	Squamous, Mild Mild
[ Hyperplasia TGLs = 5-10 ]			
* Spleen	[ Hematopoietic Cell Proliferation TGLs = 4-6 ]	Hematopoietic Cell Proliferation	Mild
* Thymus	[ Thymoma Benign TGLs = 3-14 ]	Thymoma Benign	

---

**PRIMARY CAUSE OF DEATH** - Thymus Thymoma Benign

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 712

TRT#: 8

SEX: Female

DAY ON TEST: 732

DOSE: 100 mg/m3

DISP: Terminal Sacrifice

HISTO: 60332

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Esophagus	* Eye	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Liver
* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Mammary Gland	* Ovary
* Pancreas	* Parathyroid Gland	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Trachea	* Urinary Bladder	* Uterus	

**MISSING**

\* Lymph Node, Bronchial

**OBSERVATIONS**

* Adrenal Cortex		Angiectasis	Minimal
* Brain		Compression	Moderate
		Hydrocephalus	Minimal
* Clitoral Gland		Inflammation	Mild
	[ Inflammation TGLs = 2-14 ]		
* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
	Epiglottis	Metaplasia	Squamous, Moderate
* Lung		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Moderate
	Alveolar Epith	Hyperplasia	Moderate
		Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Chronic Active, Moderate
	Alveolar Epith	Metaplasia	Squamous, Minimal
	Alveolus	Proteinosis	Moderate
	[ Infiltration Cellular TGLs = 3-4+5 ]		
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 712

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 732

**DOSE:** 100 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60332

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild
	Respirat Epith	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Adenoma	
[ Adenoma TGLs = 1-10 ]			
* Thyroid Gland	C Cell	Hyperplasia	Mild

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 713

TRT#: 8

SEX: Female

DAY ON TEST: 732

DOSE: 100 mg/m3

DISP: Terminal Sacrifice

HISTO: 60333

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland
* Salivary Glands	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Trachea	* Urinary Bladder	* Uterus

OBSERVATIONS

* Adrenal Cortex		Adenoma	
* Clitoral Gland		Inflammation	Minimal
* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
	Epiglottis	Metaplasia	Squamous, Mild
* Liver	Bile Duct	Cyst	Mild
	[ Cyst TGLs = 6-14 ]		
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Moderate
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Chronic Active, Moderate
	Alveolus	Proteinosis	Moderate
	[ Infiltration Cellular TGLs = 5-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Minimal
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Moderate
* Mammary Gland	Duct	Cyst	Mild
	[ Cyst TGLs = 1-15 ]		
Mesentery	Fat	Necrosis	Minimal
	[ Necrosis TGLs = 2,3-16+17 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 713

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 732

**DOSE:** 100 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60333

**ORGAN AND ACCOUNTABLE SITE STATUS**

	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild
	Respirat Epith	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Ovary		Cyst	Minimal
	[ Cyst TGLs = 4-9 ]		
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
	[ Hyperplasia TGLs = 7-10 ]		
* Thymus		Atrophy	Mild
* Thyroid Gland	C Cell	Hyperplasia	Minimal

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 714

TRT#: 8

SEX: Female

DAY ON TEST: 732

DOSE: 100 mg/m3

DISP: Terminal Sacrifice

HISTO: 60334

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Kidney	* Liver	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Mammary Gland	* Ovary	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Trachea	* Urinary Bladder

**MISSING**

\* Lymph Node, Bronchial

**OBSERVATIONS**

* Adrenal Cortex		Angiectasis	Minimal
* Clitoral Gland		Inflammation	Mild
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
	Epiglottis	Metaplasia	Squamous, Mild
* Lung		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Mild
	Alveolar Epith	Hyperplasia	Moderate
		Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Chronic Active, Moderate
	Alveolus	Proteinosis	Marked
	[ Infiltration Cellular TGLs = 2-4+5 ]		
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild
	Respirat Epith	Hyperplasia	Minimal
		Inflammation	Suppurative, Mild
* Thymus		Thymoma Benign	

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 714

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 732

**DOSE:** 100 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60334

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

[ Thymoma Benign TGLs = 1-3 ]

\* Thyroid Gland

C Cell

Hyperplasia

Mild

\* Uterus

Endometrium

Hyperplasia

Cystic, Minimal

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 715

TRT#: 8

SEX: Female

DAY ON TEST: 733

DOSE: 100 mg/m3

DISP: Terminal Sacrifice

HISTO: 60335

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Esophagus	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Mammary Gland	* Ovary
* Pancreas	* Parathyroid Gland	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Trachea
* Urinary Bladder			

MISSING

\* Lymph Node, Mediastinal

OBSERVATIONS

* Clitoral Gland [ Cyst TGLs = 1-14 ]		Cyst	Mild
* Eye	Retina	Atrophy	Mild
* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Moderate
* Liver		Basophilic Focus	
* Lung		Alveolar/Bronchiolar Adenoma	Multiple
		Fibrosis	Moderate
	Alv/Bron Epith	Hyperplasia	Moderate
	Alveolar Epith	Hyperplasia	Moderate
	BALT	Hyperplasia	Lymphohistiocy, Minimal
		Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Chronic Active, Marked
	Alveolus	Proteinosis	Moderate
[ Infiltration Cellular TGLs = 2-4+5 ]			
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 715

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 733

**DOSE:** 100 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60335

**ORGAN AND ACCOUNTABLE SITE STATUS**

	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild
	Respirat Epith	Hyperplasia	Minimal
	Transit Epithe	Hyperplasia	Mild
		Inflammation	Suppurative, Mild
* Pituitary Gland	Pars Distalis	Adenoma	
* Thymus		Atrophy	Minimal
* Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Minimal

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 716

TRT#: 8

SEX: Female

DAY ON TEST: 731

DOSE: 100 mg/m3

DISP: Terminal Sacrifice

HISTO: 60336

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Mammary Gland	* Ovary	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Trachea
* Urinary Bladder			

OBSERVATIONS

* Adrenal Cortex		Angiectasis	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
	Epiglottis	Metaplasia	Squamous, Moderate
* Liver		Basophilic Focus	
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Moderate
	Alveolar Epith	Hyperplasia	Mild
	BALT	Hyperplasia	Lymphohistiocy, Mild
		Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Chronic Active, Moderate
	Alveolus	Proteinosis	Moderate
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Mild
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Marked
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild
	Respirat Epith	Hyperplasia	Minimal
	Transit Epithe	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 716

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 731

**DOSE:** 100 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60336

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Thyroid Gland	C Cell	Inflammation Hyperplasia	Suppurative, Minimal Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Mild

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**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 717

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 731

**DOSE:** 100 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60337

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Blood Vessel	* Bone	* Bone Marrow	* Clitoral Gland
* Esophagus	* Eye	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Lymph Node, Bronchial
* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Mammary Gland	* Ovary
* Pancreas	* Parathyroid Gland	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Trachea
* Urinary Bladder			

**MISSING**

\* Adrenal Medulla

**OBSERVATIONS**

* Adrenal Cortex		Angiectasis	Mild
[ Angiectasis TGLs = 2-7 ]			
* Brain		Compression	Minimal
* Kidney	Pelvis	Inflammation	Minimal
		Nephropathy	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
	Epiglottis	Metaplasia	Squamous, Moderate
* Liver		Basophilic Focus	
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Marked
	Alveolar Epith	Hyperplasia	Moderate
		Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Chronic Active, Moderate
	Alveolar Epith	Metaplasia	Squamous, Mild
	Alveolus	Proteinosis	Moderate
[ Infiltration Cellular TGLs = 4-4+5 ]			
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Marked
Mesentery	Fat	Necrosis	Mild
[ Necrosis TGLs = 3-14 ]			

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
Test Type: CHRONIC  
Route: RESPIRATORY EXPOSURE WHOLE BODY  
Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
Time Report Requested: 09:56:24  
First Dose M/F: 07/20/09 / 07/20/09  
Lab: BNW

ANIMAL ID: 717

TRT#: 8

SEX: Female

DAY ON TEST: 731

DOSE: 100 mg/m3

DISP: Terminal Sacrifice

HISTO: 60337

**ORGAN AND ACCOUNTABLE SITE STATUS**

* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Respirat Epith	Hyperplasia	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild
	Transit Epithe	Hyperplasia	Minimal
		Inflammation	Suppurative, Mild
* Pituitary Gland	Pars Distalis	Adenoma	
[ Adenoma TGLs = 1-10 ]			
* Thymus		Thymoma Benign	
* Thyroid Gland	C Cell	Hyperplasia	Mild
* Uterus	Endometrium	Hyperplasia	Cystic, Minimal

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 718

TRT#: 8

SEX: Female

DAY ON TEST: 532

DOSE: 100 mg/m3

DISP: Natural Death

HISTO: 60338

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Esophagus	* Eye	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Lymph Node, Bronchial
* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland
* Ovary	* Pancreas	* Parathyroid Gland	* Salivary Glands
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder	* Uterus	

**OBSERVATIONS**

* Adrenal Cortex		Angiectasis	Mild
* Brain		Compression	Moderate
		Hydrocephalus	Mild
* Clitoral Gland		Inflammation	Minimal
* Kidney	Pelvis	Inflammation	Mild
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
		Infiltration Cellular	Mixed Cell, Mild
	Epiglottis	Metaplasia	Squamous, Mild
* Liver	Bile Duct	Hyperplasia	Minimal
* Lung		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Mild
	Alveolar Epith	Hyperplasia	Moderate
		Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Chronic Active, Moderate
	Alveolus	Proteinosis	Moderate
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild
	Respirat Epith	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 718

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 532

**DOSE:** 100 mg/m3

**DISP:** Natural Death

**HISTO:** 60338

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Pituitary Gland	Pars Distalis	Inflammation Adenoma	Suppurative, Mild
[ Adenoma TGLs = 3-10 ]			
* Skin		Inflammation	Mild
[ Inflammation TGLs = 4-14 ]			
* Spleen	Lymph Follic	Atrophy	Minimal

---

**PRIMARY CAUSE OF DEATH** - Pituitary Gland Pars Distalis Adenoma

---

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 719

TRT#: 8

SEX: Female

DAY ON TEST: 733

DOSE: 100 mg/m3

DISP: Terminal Sacrifice

HISTO: 60339

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Mammary Gland
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Salivary Glands
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Trachea	* Urinary Bladder		

MISSING

\* Lymph Node, Bronchial

OBSERVATIONS

* Clitoral Gland		Inflammation	Minimal
* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
	Epiglottis	Metaplasia	Squamous, Moderate
* Liver		Basophilic Focus	
		Clear Cell Focus	
	Bile Duct	Hyperplasia	Minimal
* Lung		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Moderate
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Chronic Active, Moderate
	Alveolar Epith	Metaplasia	Squamous, Marked
	Alveolus	Proteinosis	Moderate
	[ Infiltration Cellular TGLs = 3-4+5 ]		
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Marked
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 719

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 733

**DOSE:** 100 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60339

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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	Glands, Olfactory Epi	Hyperplasia	Mild
	Respirat Epith	Hyperplasia	Minimal
	Transit Epithe	Hyperplasia	Mild
	Transit Epithe	Metaplasia	Squamous, Minimal
* Ovary		Cyst	Minimal
	[ Cyst TGLs = 1-9 ]		
* Spleen		Hematopoietic Cell Proliferation	Minimal
* Thyroid Gland	C Cell	Hyperplasia	Minimal
* Uterus		Schwannoma Malignant	
	[ Schwannoma Malignant TGLs = 2-14 ]		

---

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 720

TRT#: 8

SEX: Female

DAY ON TEST: 626

DOSE: 100 mg/m3

DISP: Moribund Sacrifice

HISTO: 60340

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Mammary Gland	* Ovary	* Pancreas	* Parathyroid Gland
* Salivary Glands	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Trachea	* Urinary Bladder	* Uterus	

OBSERVATIONS

* Kidney		Nephropathy	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
	Epiglottis	Metaplasia	Squamous, Mild
* Liver		Inflammation	Granulomatous, Minimal
* Lung		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Moderate
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Moderate
	Alveolus	Proteinosis	Mild
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Minimal
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
* Spleen	Lymph Follic	Atrophy	Mild
* Thymus		Atrophy	Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 720

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 626

**DOSE:** 100 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60340

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* Thyroid Gland

C Cell

Hyperplasia

Minimal

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PRIMARY CAUSE OF DEATH

- UNCERTAIN

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 721

TRT#: 8

SEX: Female

DAY ON TEST: 733

DOSE: 100 mg/m3

DISP: Terminal Sacrifice

HISTO: 60341

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Liver	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Mammary Gland	* Ovary	* Pancreas	* Parathyroid Gland
* Salivary Glands	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thyroid Gland	* Trachea	* Urinary Bladder
* Uterus			

OBSERVATIONS

* Adrenal Cortex		Angiectasis	Minimal
* Kidney	Pelvis	Inflammation	Minimal
		Nephropathy	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Moderate
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Moderate
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Moderate
	Alveolar Epith	Hyperplasia	Mild
	BALT	Hyperplasia	Lymphohistiocy, Minimal
		Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Chronic Active, Moderate
	Alveolus	Proteinosis	Marked
[ Infiltration Cellular	TGLs = 2-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Minimal
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Respirat Epith	Hyperplasia	Minimal
	Goblet Cell	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 721

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 733

**DOSE:** 100 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60341

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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	Glands, Olfactory Epi	Hyperplasia	Minimal
	Transit Epithe	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
* Thymus		Thymoma Benign	
	[ Thymoma Benign TGLs = 1-3 ]		

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 722

TRT#: 8

SEX: Female

DAY ON TEST: 712

DOSE: 100 mg/m3

DISP: Moribund Sacrifice

HISTO: 60342

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Mammary Gland	* Ovary
* Pancreas	* Parathyroid Gland	* Salivary Glands	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Trachea
* Urinary Bladder	* Uterus		

MISSING

\* Lymph Node, Bronchial

OBSERVATIONS

* Adrenal Cortex		Angiectasis	Minimal
* Harderian Gland		Inflammation	Minimal
* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
	Epiglottis	Metaplasia	Squamous, Mild
* Liver		Basophilic Focus	
	Serosa	Fibrosis	Minimal
		Hepatodiaphragmatic Nodule	Mild
	[ Fibrosis TGLs = 3-15 ]		
	[ Hepatodiaphragmatic Nodule TGLs = 2-14 ]		
* Lung		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Moderate
	Alveolar Epith	Hyperplasia	Mild
	BALT	Hyperplasia	Lymphohistiocy, Minimal
		Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Chronic Active, Moderate
	Alveolus	Proteinosis	Moderate
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Mild

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 20523 - 03  
Test Type: CHRONIC  
Route: RESPIRATORY EXPOSURE WHOLE BODY  
Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Metal working fluids (Trim VX)  
CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
Time Report Requested: 09:56:24  
First Dose M/F: 07/20/09 / 07/20/09  
Lab: BNW

ANIMAL ID: 722

TRT#: 8

SEX: Female

DAY ON TEST: 712

DOSE: 100 mg/m3

DISP: Moribund Sacrifice

HISTO: 60342

ORGAN AND ACCOUNTABLE SITE STATUS

* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
	Transit Epithe	Hyperplasia	Minimal
		Inflammation	Suppurative, Mild
	Olfactory Epi	Metaplasia	Squamous, Minimal
		Schwannoma Malignant	Metastatic (Skin)
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
* Skin	Subcut Tiss	Schwannoma Malignant	
* Thyroid Gland	C Cell	Hyperplasia	Minimal

PRIMARY CAUSE OF DEATH - Skin Subcut Tiss Schwannoma Malignant

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 723

TRT#: 8

SEX: Female

DAY ON TEST: 732

DOSE: 100 mg/m3

DISP: Terminal Sacrifice

HISTO: 60343

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Mammary Gland	* Ovary	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Trachea
* Urinary Bladder	* Uterus		

OBSERVATIONS

* Adrenal Cortex		Angiectasis	Mild
		Hypertrophy	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
	Epiglottis	Metaplasia	Squamous, Moderate
* Liver	Bile Duct	Hyperplasia	Minimal
* Lung		Fibrosis	Mild
	Alveolar Epith	Hyperplasia	Moderate
	Alv/Bron Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Chronic Active, Moderate
	Alveolus	Proteinosis	Moderate
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Mild
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
	Respirat Epith	Hyperplasia	Minimal
	Transit Epithe	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 723

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 732

**DOSE:** 100 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60343

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* Thyroid Gland

C Cell

Inflammation

Suppurative, Minimal

Adenoma

C Cell

Hyperplasia

Mild

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 724

TRT#: 8

SEX: Female

DAY ON TEST: 653

DOSE: 100 mg/m3

DISP: Moribund Sacrifice

HISTO: 60344

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Blood Vessel	* Bone	* Bone Marrow	* Clitoral Gland
* Esophagus	* Eye	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Lymph Node, Mandibular
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Ovary
* Pancreas	* Parathyroid Gland	Peripheral Nerve	* Salivary Glands
Skeletal Muscle	* Skin	Spinal Cord	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Trachea	* Urinary Bladder
* Uterus			

MISSING

\* Lymph Node, Bronchial

OBSERVATIONS

* Adrenal Cortex		Angiectasis	Mild
* Adrenal Medulla		Hyperplasia	Mild
* Brain		Compression	Moderate
		Hydrocephalus	Moderate
* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
	Epiglottis	Metaplasia	Squamous, Mild
* Liver		Basophilic Focus	
* Lung		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Moderate
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Chronic Active, Moderate
	Alveolus	Proteinosis	Moderate
	[ Infiltration Cellular TGLs = 2-4+5+14 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 724

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 653

**DOSE:** 100 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60344

**ORGAN AND ACCOUNTABLE SITE STATUS**

	Glands, Olfactory Epi	Hyperplasia	Minimal
	Respirat Epith	Hyperplasia	Minimal
	Transit Epithe	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Adenoma	
[ Adenoma TGLs = 3-10 ]			
* Spleen	Lymph Follic	Atrophy	Moderate
* Thyroid Gland	C Cell	Hyperplasia	Mild

**PRIMARY CAUSE OF DEATH** - Pituitary Gland Pars Distalis Adenoma

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 725

TRT#: 8

SEX: Female

DAY ON TEST: 732

DOSE: 100 mg/m3

DISP: Terminal Sacrifice

HISTO: 60345

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lymph Node, Mediastinal	* Lymph Node, Mesenteric	* Mammary Gland	* Pancreas
* Parathyroid Gland	* Salivary Glands	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Trachea	* Urinary Bladder	* Uterus

MISSING

\* Lymph Node, Bronchial

OBSERVATIONS

* Adrenal Cortex		Adenoma	
		Vacuolization Cytoplasmic	Minimal
	[ Adenoma TGLs = 5-7 ]		
* Heart		Schwannoma Malignant	
* Kidney	Renal Tubule	Cyst	Minimal
	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Moderate
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Moderate
* Liver		Basophilic Focus	
	Bile Duct	Hyperplasia	Minimal
* Lung		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Moderate
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Chronic Active, Moderate
	Alveolar Epith	Metaplasia	Squamous, Mild
	Alveolus	Proteinosis	Moderate
	[ Infiltration Cellular TGLs = 3-4+5 ]		
* Lymph Node, Mandibular		Hyperplasia	Plasma Cell, Moderate

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 725

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 732

**DOSE:** 100 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60345

**ORGAN AND ACCOUNTABLE SITE STATUS**

	[ Hyperplasia TGLs = 2-9 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
	Respirat Epith	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Ovary	Bilateral	Tubulostromal Adenoma	
* Pituitary Gland	Pars Distalis	Adenoma	
	[ Adenoma TGLs = 4-10 ]		
* Skin	Epidermis	Squamous Cell Papilloma	
	[ Squamous Cell Papilloma TGLs = 1-14 ]		
* Thymus		Atrophy	Moderate
* Thyroid Gland	C Cell	Hyperplasia	Mild

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 726

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 733

**DOSE:** 100 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60346

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Pancreas
* Parathyroid Gland	* Salivary Glands	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Trachea	* Urinary Bladder
* Uterus			

**OBSERVATIONS**

* Adrenal Cortex		Angiectasis	Minimal
* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Moderate
	Epiglottis	Metaplasia	Squamous, Moderate
* Liver		Basophilic Focus	
		Inflammation	Granulomatous, Minimal
* Lung		Alveolar/Bronchiolar Adenoma	
		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Marked
	Alveolar Epith	Hyperplasia	Marked
		Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Chronic Active, Moderate
	Alveolar Epith	Metaplasia	Squamous, Mild
	Alveolus	Proteinosis	Marked
	[ Infiltration Cellular TGLs = 2-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Minimal
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Moderate
* Mammary Gland		Carcinoma	
	[ Carcinoma TGLs = 5-14 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 726

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 733

**DOSE:** 100 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60346

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild
	Respirat Epith	Hyperplasia	Minimal
		Inflammation	Suppurative, Mild
* Ovary		Cyst	Mild
	[ Cyst TGLs = 3,4-9 ]		
* Pituitary Gland	Pars Distalis	Hyperplasia	Moderate
	[ Hyperplasia TGLs = 1-10 ]		
* Skin		Ulcer	Mild
	[ Ulcer TGLs = 6-15 ]		
* Thyroid Gland	C Cell	Hyperplasia	Mild

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 727

TRT#: 8

SEX: Female

DAY ON TEST: 732

DOSE: 100 mg/m3

DISP: Terminal Sacrifice

HISTO: 60347

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Mammary Gland	* Ovary
* Pancreas	* Parathyroid Gland	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Trachea	* Urinary Bladder	* Uterus	

OBSERVATIONS

* Brain		Compression	Moderate
* Clitoral Gland		Inflammation	Minimal
* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Moderate
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Moderate
* Liver		Basophilic Focus	
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Moderate
	Alveolar Epith	Hyperplasia	Moderate
		Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Chronic Active, Marked
	Alveolar Epith	Metaplasia	Squamous, Mild
	Alveolus	Proteinosis	Marked
[ Infiltration Cellular	TGLs = 2-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Mild
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 727

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 732

**DOSE:** 100 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60347

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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	Respirat Epith	Hyperplasia	Minimal
		Inflammation	Suppurative, Mild
* Pituitary Gland	Pars Distalis	Adenoma	
[ Adenoma TGLs = 1-10 ]			
* Thyroid Gland	C Cell	Hyperplasia	Minimal
	Follicle	Hyperplasia	Marked

---

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 728

TRT#: 8

SEX: Female

DAY ON TEST: 733

DOSE: 100 mg/m3

DISP: Terminal Sacrifice

HISTO: 60348

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Mammary Gland
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Trachea	* Urinary Bladder	

OBSERVATIONS

* Adrenal Cortex		Angiectasis	Mild
* Kidney	Pelvis	Inflammation	Minimal
		Nephropathy	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Moderate
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Moderate
* Liver		Basophilic Focus	
		Clear Cell Focus	
* Lung		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Moderate
	Alveolar Epith	Hyperplasia	Marked
		Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Chronic Active, Marked
	Alveolar Epith	Metaplasia	Squamous, Mild
	Alveolus	Proteinosis	Moderate
	[ Infiltration Cellular TGLs = 2-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Moderate
* Lymph Node, Mediastinal		Pigmentation	Hemosiderin, Mild
	[ Pigmentation TGLs = 1-3 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 728

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 733

**DOSE:** 100 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60348

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
	Transit Epithe	Hyperplasia	Mild
		Inflammation	Suppurative, Minimal
* Ovary		Cyst	Minimal
	[ Cyst TGLs = 3-9 ]		
* Thyroid Gland	C Cell	Hyperplasia	Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Minimal
	[ Hyperplasia TGLs = 4-10 ]		

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 729

TRT#: 8

SEX: Female

DAY ON TEST: 711

DOSE: 100 mg/m3

DISP: Moribund Sacrifice

HISTO: 60349

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
Lymph Node	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Ovary	* Pancreas	* Parathyroid Gland
* Salivary Glands	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder
* Uterus			

OBSERVATIONS

* Adrenal Cortex		Angiectasis	Minimal
* Clitoral Gland		Inflammation	Minimal
* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Moderate
	Epiglottis	Metaplasia	Squamous, Moderate
* Liver		Basophilic Focus	
* Lung		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Moderate
	Alveolar Epith	Hyperplasia	Minimal
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Moderate
	[ Infiltration Cellular TGLs = 2-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
	Transit Epithe	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 729

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 711

**DOSE:** 100 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60349

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Skeletal Muscle

Schwannoma Malignant

Metastatic (Skin)

\* Skin

Subcut Tiss

Schwannoma Malignant

[ Schwannoma Malignant TGLs = 1-14+15 ]

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PRIMARY CAUSE OF DEATH

- Skin Subcut Tiss Schwannoma Malignant

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 730

TRT#: 8

SEX: Female

DAY ON TEST: 732

DOSE: 100 mg/m3

DISP: Terminal Sacrifice

HISTO: 60350

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Lymph Node, Bronchial	* Lymph Node, Mandibular
* Lymph Node, Mesenteric	* Mammary Gland	* Ovary	* Pancreas
* Parathyroid Gland	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Trachea	* Urinary Bladder
* Uterus			

**OBSERVATIONS**

* Adrenal Cortex		Angiectasis	Minimal
		Hypertrophy	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Moderate
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Moderate
* Liver		Basophilic Focus	
* Lung		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Moderate
	Alveolar Epith	Hyperplasia	Moderate
		Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Chronic Active, Marked
	Alveolar Epith	Metaplasia	Squamous, Mild
	Alveolus	Proteinosis	Minimal
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Moderate
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 730

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 732

**DOSE:** 100 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60350

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Pituitary Gland	Pars Distalis	Schwannoma Benign Adenoma	
* Thymus		Atrophy	Minimal
* Thyroid Gland	C Cell	Hyperplasia	Minimal

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 731

TRT#: 8

SEX: Female

DAY ON TEST: 716

DOSE: 100 mg/m3

DISP: Moribund Sacrifice

HISTO: 60351

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Clitoral Gland	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Kidney	* Liver	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Mammary Gland	* Ovary	* Parathyroid Gland
* Salivary Glands	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Trachea	* Urinary Bladder	* Uterus

OBSERVATIONS

* Adrenal Cortex		Angiectasis	Mild
* Brain		Compression	Moderate
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
	Epiglottis	Metaplasia	Squamous, Mild
* Lung		Fibrosis	Moderate
	Alv/Bron Epith	Hyperplasia	Moderate
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Marked
	Alveolar Epith	Metaplasia	Squamous, Moderate
	Alveolus	Proteinosis	Moderate
	[ Infiltration Cellular TGLs = 3-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
	Transit Epithe	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Pancreas	Acinus	Atrophy	Mild
* Pituitary Gland	Pars Distalis	Adenoma	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 731

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 716

**DOSE:** 100 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60351

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

[ Adenoma TGLs = 4-10 ]

\* Thymus

Thymoma Benign

\* Thyroid Gland

C Cell

Hyperplasia

Minimal

---

PRIMARY CAUSE OF DEATH

- Pituitary Gland Pars Distalis Adenoma

---

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 732

TRT#: 8

SEX: Female

DAY ON TEST: 705

DOSE: 100 mg/m3

DISP: Moribund Sacrifice

HISTO: 60352

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Liver	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Pancreas
* Parathyroid Gland	* Salivary Glands	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thyroid Gland	* Trachea	

MISSING

\* Lymph Node, Bronchial

OBSERVATIONS

* Adrenal Cortex		Necrosis	Moderate
	[ Necrosis TGLs = 7-7 ]		
* Heart		Cardiomyopathy	Mild
* Kidney		Hydronephrosis	Marked
	[ Hydronephrosis TGLs = 8-7+14 ]		
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Mild
* Lung		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Mild
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Moderate
	Alveolus	Proteinosis	Mild
	[ Infiltration Cellular TGLs = 6-4+5+14 ]		
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Mild
* Mammary Gland		Carcinoma	Multiple
		Hyperplasia	Mild
	[ Carcinoma TGLs = 1-16 ]		
	[ Hyperplasia TGLs = 2-18 ]		

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 732

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 705

**DOSE:** 100 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60352

**ORGAN AND ACCOUNTABLE SITE STATUS**

* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Glands, Olfactory Epi	Hyperplasia	Minimal
		Inflammation	Suppurative, Mild
* Ovary		Cyst	Mild
	[ Cyst TGLs = 4-9 ]		
* Pituitary Gland	Pars Distalis	Adenoma	
	Pars Distalis	Hyperplasia	Minimal
	[ Adenoma TGLs = 9-10 ]		
* Spleen	Lymph Follic	Atrophy	Moderate
* Thymus		Atrophy	Mild
Ureter		Cyst	Mild
	[ Cyst TGLs = 3-15 ]		
* Urinary Bladder		Adenocarcinoma	Metastatic (Uterus)
* Uterus		Adenocarcinoma	
	[ Adenocarcinoma TGLs = 5-17 ]		

**PRIMARY CAUSE OF DEATH** - Uterus Adenocarcinoma

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 733

TRT#: 8

SEX: Female

DAY ON TEST: 733

DOSE: 100 mg/m3

DISP: Terminal Sacrifice

HISTO: 60353

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Liver	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Mammary Gland	* Ovary	* Pancreas	* Pituitary Gland
* Salivary Glands	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Trachea	* Urinary Bladder	* Uterus

MISSING

* Lymph Node, Bronchial	* Parathyroid Gland
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OBSERVATIONS

* Adrenal Cortex		Angiectasis	Moderate
* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
	Epiglottis	Metaplasia	Squamous, Mild
* Lung		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Mild
	Alveolar Epith	Hyperplasia	Moderate
		Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Chronic Active, Moderate
	Alveolar Epith	Metaplasia	Squamous, Minimal
	Alveolus	Proteinosis	Moderate
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
	Transit Epithe	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 733

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 733

**DOSE:** 100 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60353

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* Thymus

Atrophy

Marked

\* Thyroid Gland

C Cell

Hyperplasia

Mild

---

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 734

TRT#: 8

SEX: Female

DAY ON TEST: 733

DOSE: 100 mg/m3

DISP: Terminal Sacrifice

HISTO: 60354

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Liver	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Mammary Gland	* Pancreas	* Parathyroid Gland	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Trachea	* Urinary Bladder	* Uterus

OBSERVATIONS

* Adrenal Cortex		Angiectasis	Minimal
		Vacuolization Cytoplasmic	Minimal
* Clitoral Gland		Inflammation	Minimal
* Kidney	Pelvis	Inflammation	Minimal
		Nephropathy	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
	Epiglottis	Metaplasia	Squamous, Moderate
* Lung		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Mild
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Chronic Active, Moderate
	Alveolus	Proteinosis	Mild
	[ Infiltration Cellular TGLs = 2-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Moderate
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Glands, Olfactory Epi	Hyperplasia	Minimal
	Goblet Cell	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Ovary		Tubulostromal Carcinoma	

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 734

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 733

**DOSE:** 100 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60354

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Tubulostromal Carcinoma	TGLs = 3-9 ]			
* Pituitary Gland		Pars Distalis	Adenoma	
[ Adenoma	TGLs = 1-10 ]			
* Thyroid Gland		C Cell	Adenoma	
		C Cell	Hyperplasia	Mild

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 735

TRT#: 8

SEX: Female

DAY ON TEST: 733

DOSE: 100 mg/m3

DISP: Terminal Sacrifice

HISTO: 60355

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Clitoral Gland	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Kidney	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Mammary Gland
* Pancreas	* Parathyroid Gland	Peripheral Nerve	* Salivary Glands
Skeletal Muscle	* Skin	Spinal Cord	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Trachea	* Urinary Bladder
* Uterus			

**MISSING**

\* Lymph Node, Bronchial

**OBSERVATIONS**

* Adrenal Cortex		Hypertrophy	Minimal
		Vacuolization Cytoplasmic	Minimal
* Brain		Compression	Moderate
* Larynx	Epiglottis	Hyperplasia	Squamous, Moderate
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Moderate
* Liver		Basophilic Focus	
		Eosinophilic Focus	
		Hepatocellular Adenoma	
	[ Basophilic Focus TGLs = 3-6 ]		
	[ Eosinophilic Focus TGLs = 6-15 ]		
	[ Hepatocellular Adenoma TGLs = 2-14 ]		
* Lung		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Marked
	Alveolar Epith	Hyperplasia	Moderate
		Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Chronic Active, Moderate
	Alveolar Epith	Metaplasia	Squamous, Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 735

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 733

**DOSE:** 100 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60355

**ORGAN AND ACCOUNTABLE SITE STATUS**

	Alveolus	Proteinosis	Moderate
	[ Infiltration Cellular TGLs = 4-4+5 ]		
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocytosis, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
	Respirat Epith	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Ovary		Granulosa Cell Tumor Benign	
	[ Granulosa Cell Tumor Benign TGLs = 5-9 ]		
* Pituitary Gland	Pars Distalis	Adenoma	
	[ Adenoma TGLs = 1-10 ]		
* Thymus		Atrophy	Mild
* Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Moderate

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 736

TRT#: 8

SEX: Female

DAY ON TEST: 684

DOSE: 100 mg/m3

DISP: Moribund Sacrifice

HISTO: 60356

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Liver	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Mammary Gland
* Ovary	* Pancreas	* Parathyroid Gland	* Salivary Glands
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Trachea
* Urinary Bladder	* Uterus		

OBSERVATIONS

* Adrenal Cortex		Angiectasis	Mild
		Hypertrophy	Mild
	[ Angiectasis TGLs = 8-7 ]		
* Clitoral Gland		Cyst	Minimal
	[ Cyst TGLs = 10-9 ]		
* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Moderate
* Lung		Fibrosis	Minimal
	Alveolar Epith	Hyperplasia	Mild
	Alv/Bron Epith	Hyperplasia	Moderate
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Moderate
	Alveolus	Proteinosis	Mild
	[ Infiltration Cellular TGLs = 6-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Mild
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Mild
Mesentery	Fat	Necrosis	Minimal
	[ Necrosis TGLs = 9-18 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 736

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 684

**DOSE:** 100 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60356

**ORGAN AND ACCOUNTABLE SITE STATUS**

	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Respirat Epith	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild
	Transit Epithe	Hyperplasia	Mild
		Inflammation	Suppurative, Mild
	Transit Epithe	Metaplasia	Squamous, Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Moderate
* Skin		Ulcer	Mild
	[ Ulcer TGLs = 3,4,5-15+16+17 ]		
* Spleen		Hematopoietic Cell Proliferation	Minimal
* Thyroid Gland	C Cell	Hyperplasia	Mild

**PRIMARY CAUSE OF DEATH** - Skin Ulcer

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 737

TRT#: 8

SEX: Female

DAY ON TEST: 593

DOSE: 100 mg/m3

DISP: Moribund Sacrifice

HISTO: 60357

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Liver	* Lymph Node, Mandibular
* Lymph Node, Mesenteric	* Ovary	* Pancreas	* Parathyroid Gland
* Salivary Glands	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

OBSERVATIONS

* Adrenal Cortex		Vacuolization Cytoplasmic	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Minimal
	Epiglottis	Metaplasia	Squamous, Moderate
* Lung		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Moderate
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Moderate
	Alveolus	Proteinosis	Moderate
	[ Infiltration Cellular TGLs = 2-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Mild
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Mild
* Mammary Gland		Adenoma	
		Carcinoma	
		Hyperplasia	Mild
	[ Adenoma TGLs = 1-14 ]		
	[ Carcinoma TGLs = 4-16 ]		
	[ Hyperplasia TGLs = 5-15 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 737

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 593

**DOSE:** 100 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60357

**ORGAN AND ACCOUNTABLE SITE STATUS**

	Glands, Olfactory Epi	Hyperplasia	Minimal
	Respirat Epith	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Moderate
[ Hyperplasia TGLs = 3-10 ]			
* Spleen		Hematopoietic Cell Proliferation	Mild
* Uterus	Endometrium	Hyperplasia	Cystic, Minimal

**PRIMARY CAUSE OF DEATH** - Mammary Gland Carcinoma

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 738

TRT#: 8

SEX: Female

DAY ON TEST: 733

DOSE: 100 mg/m3

DISP: Terminal Sacrifice

HISTO: 60358

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex          | * Adrenal Medulla           | Blood Vessel             | * Bone                     |
| * Bone Marrow             | * Brain                     | * Clitoral Gland         | * Esophagus                |
| * Eye                     | * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic      | * Lymph Node, Mandibular    | * Lymph Node, Mesenteric | * Mammary Gland            |
| * Ovary                   | * Pancreas                  | * Parathyroid Gland      | * Salivary Glands          |
| * Skin                    | * Stomach, Forestomach      | * Stomach, Glandular     | * Trachea                  |
| * Urinary Bladder         | * Uterus                    |                          |                            |

OBSERVATIONS

- |                           |                       |                               |                          |
|---------------------------|-----------------------|-------------------------------|--------------------------|
| * Harderian Gland         |                       | Inflammation                  | Minimal                  |
| * Kidney                  | Pelvis                | Inflammation                  | Minimal                  |
| * Larynx                  | Epiglottis            | Hyperplasia                   | Squamous, Mild           |
|                           | Epiglottis            | Metaplasia                    | Squamous, Moderate       |
| * Liver                   |                       | Basophilic Focus              |                          |
| * Lung                    |                       | Fibrosis                      | Minimal                  |
|                           | Alv/Bron Epith        | Hyperplasia                   | Mild                     |
|                           | Alveolar Epith        | Hyperplasia                   | Mild                     |
|                           |                       | Hyperplasia                   | Lymphohistiocy, Mild     |
|                           | BALT                  | Hyperplasia                   | Lymphohistiocy, Mild     |
|                           |                       | Infiltration Cellular         | Histiocyte, Moderate     |
|                           |                       | Inflammation                  | Chronic Active, Moderate |
|                           | Alveolus              | Proteinosis                   | Mild                     |
| [ Infiltration Cellular   | TGLs = 1-4+5 ]        |                               |                          |
| * Lymph Node, Bronchial   |                       | Hyperplasia                   | Lymphohistiocy, Mild     |
| * Lymph Node, Mediastinal |                       | Hyperplasia                   | Lymphohistiocy, Mild     |
| * Nose                    | Olfactory Epi         | Accumulation, Hyaline Droplet | Moderate                 |
|                           | Respirat Epith        | Accumulation, Hyaline Droplet | Mild                     |
|                           | Goblet Cell           | Hyperplasia                   | Minimal                  |
|                           | Glands, Olfactory Epi | Hyperplasia                   | Minimal                  |
|                           | Transit Epithe        | Hyperplasia                   | Minimal                  |

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 738

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 733

**DOSE:** 100 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60358

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Pituitary Gland [ Angiectasis TGLs = 2-10 ]	Inflammation Angiectasis	Suppurative, Mild Minimal
* Spleen [ Cyst TGLs = 3-6 ]	Cyst	Minimal
* Thymus	Atrophy	Mild
* Thyroid Gland C Cell	Hyperplasia	Mild

---

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 739

TRT#: 8

SEX: Female

DAY ON TEST: 572

DOSE: 100 mg/m3

DISP: Moribund Sacrifice

HISTO: 60359

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Clitoral Gland	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Kidney	* Liver	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Ovary	* Pancreas	* Parathyroid Gland
Peripheral Nerve	* Salivary Glands	Skeletal Muscle	* Skin
Spinal Cord	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thyroid Gland	* Trachea	* Urinary Bladder	* Uterus

OBSERVATIONS

* Adrenal Cortex		Angiectasis	Moderate
* Brain		Compression	Marked
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
	Epiglottis	Metaplasia	Squamous, Moderate
* Lung		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Moderate
	Alveolar Epith	Hyperplasia	Mild
	BALT	Hyperplasia	Lymphohistiocy, Minimal
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Moderate
	Alveolus	Proteinosis	Mild
	[ Infiltration Cellular TGLs = 2-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Minimal
* Mammary Gland		Fibroadenoma	
	[ Fibroadenoma TGLs = 1-15+16+17+18 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal
	Respirat Epith	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 739

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 572

**DOSE:** 100 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60359

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Pituitary Gland	Pars Distalis	Inflammation	Suppurative, Minimal
[ Adenoma TGLs = 3-10 ]		Adenoma	
* Thymus		Atrophy	Mild

---

**PRIMARY CAUSE OF DEATH** - Pituitary Gland Pars Distalis Adenoma

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 740

TRT#: 8

SEX: Female

DAY ON TEST: 684

DOSE: 100 mg/m3

DISP: Moribund Sacrifice

HISTO: 60360

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Clitoral Gland	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Liver	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Mammary Gland
* Ovary	* Pancreas	* Salivary Glands	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Trachea	* Urinary Bladder
* Uterus			

**MISSING**

* Lymph Node, Mediastinal	* Parathyroid Gland
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**OBSERVATIONS**

* Adrenal Cortex		Angiectasis	Minimal
* Brain		Compression	Mild
* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Moderate
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Moderate
* Lung		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Moderate
	Alveolar Epith	Hyperplasia	Mild
	BALT	Hyperplasia	Lymphohistiocy, Minimal
		Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Chronic Active, Moderate
	Alveolus	Proteinosis	Moderate
	[ Infiltration Cellular TGLs = 3-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 740

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 684

**DOSE:** 100 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60360

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Pituitary Gland	Pars Distalis	Adenoma	
[ Adenoma TGLs = 2-10 ]			
* Skin	Subcut Tiss	Histiocytic Sarcoma	
[ Histiocytic Sarcoma TGLs = 1-14 ]			
* Spleen		Hematopoietic Cell Proliferation	Minimal
* Thyroid Gland	C Cell	Hyperplasia	Minimal

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**PRIMARY CAUSE OF DEATH** - Pituitary Gland Pars Distalis Adenoma

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 741

TRT#: 8

SEX: Female

DAY ON TEST: 577

DOSE: 100 mg/m3

DISP: Moribund Sacrifice

HISTO: 60361

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex          | * Adrenal Medulla           | Blood Vessel             | * Bone                     |
| * Bone Marrow             | * Clitoral Gland            | * Esophagus              | * Eye                      |
| * Harderian Gland         | * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic      | * Kidney                    | * Liver                  | * Lymph Node, Mandibular   |
| * Lymph Node, Mediastinal | * Lymph Node, Mesenteric    | * Mammary Gland          | * Ovary                    |
| * Pancreas                | * Parathyroid Gland         | * Salivary Glands        | * Skin                     |
| * Spleen                  | * Stomach, Forestomach      | * Stomach, Glandular     | * Thymus                   |
| * Trachea                 | * Urinary Bladder           | * Uterus                 |                            |

**OBSERVATIONS**

- |                         |  |                               |                          |
|-------------------------|--|-------------------------------|--------------------------|
| * Brain                 |  | Compression                   | Marked                   |
|                         |  | Hydrocephalus                 | Moderate                 |
| * Larynx                | Epiglottis                             | Hyperplasia                   | Squamous, Moderate       |
|                         | Epiglottis                             | Metaplasia                    | Squamous, Moderate       |
| * Lung                  |  | Fibrosis                      | Minimal                  |
|                         | Alveolar Epith                         | Hyperplasia                   | Minimal                  |
|                         | Alv/Bron Epith                         | Hyperplasia                   | Minimal                  |
|                         |  | Infiltration Cellular         | Histiocyte, Mild         |
|                         |  | Inflammation                  | Chronic Active, Moderate |
|                         | Alveolus                               | Proteinosis                   | Mild                     |
|                         | [ Infiltration Cellular TGLs = 3-4+5 ] |                               |                          |
| * Lymph Node, Bronchial |  | Hyperplasia                   | Lymphohistiocy, Minimal  |
| * Nose                  | Olfactory Epi                          | Accumulation, Hyaline Droplet | Moderate                 |
|                         | Respirat Epith                         | Accumulation, Hyaline Droplet | Minimal                  |
|                         | Goblet Cell                            | Hyperplasia                   | Minimal                  |
|                         | Glands, Olfactory Epi                  | Hyperplasia                   | Minimal                  |
|                         |  | Inflammation                  | Suppurative, Minimal     |
| * Pituitary Gland       | Pars Distalis                          | Adenoma                       |                          |
|                         | [ Adenoma TGLs = 2-10 ]                |                               |                          |
| * Thyroid Gland         | C Cell                                 | Adenoma                       |                          |

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 741

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 577

**DOSE:** 100 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60361

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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C Cell

Hyperplasia

Minimal

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**PRIMARY CAUSE OF DEATH**

- Pituitary Gland Pars Distalis Adenoma

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 742

TRT#: 8

SEX: Female

DAY ON TEST: 732

DOSE: 100 mg/m3

DISP: Terminal Sacrifice

HISTO: 60362

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Lymph Node, Mandibular
* Lymph Node, Mesenteric	* Mammary Gland	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Trachea	* Urinary Bladder

MISSING

* Lymph Node, Bronchial	* Lymph Node, Mediastinal
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OBSERVATIONS

* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
	Epiglottis	Metaplasia	Squamous, Mild
* Liver		Basophilic Focus	
		Clear Cell Focus	
	[ Clear Cell Focus TGLs = 4-14 ]		
* Lung		Cystic Keratinizing Epithelioma	
		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Mild
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Chronic Active, Moderate
	Alveolar Epith	Metaplasia	Squamous, Mild
	Alveolus	Proteinosis	Mild
	[ Infiltration Cellular TGLs = 2-4+5 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild
		Inflammation	Suppurative, Minimal

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 742

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 732

**DOSE:** 100 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60362

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Ovary		Tubulostromal Adenoma	
* Thymus		Thymoma Benign	
* Thyroid Gland	Follicle	Adenoma	
	C Cell	Hyperplasia	Minimal
	[ Adenoma TGLs = 1-3 ]		
* Uterus	Endometrium	Hyperplasia	Cystic, Minimal

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 743

TRT#: 8

SEX: Female

DAY ON TEST: 613

DOSE: 100 mg/m3

DISP: Natural Death

HISTO: 60363

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Liver	* Lymph Node, Mandibular
* Lymph Node, Mesenteric	* Mammary Gland	* Pancreas	* Parathyroid Gland
* Salivary Glands	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Trachea	* Urinary Bladder	* Uterus

OBSERVATIONS

* Adrenal Cortex		Angiectasis	Minimal
		Hypertrophy	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
	Epiglottis	Infiltration Cellular	Mixed Cell, Mild
* Lung		Metaplasia	Squamous, Moderate
		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Moderate
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Chronic Active, Moderate
	Alveolar Epith	Metaplasia	Squamous, Moderate
	Alveolus	Proteinosis	Moderate
	Mediastinum	Schwannoma Malignant	
	[ Infiltration Cellular TGLs = 4-4+5 ]		
	[ Schwannoma Malignant TGLs = 3-14 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Moderate
* Lymph Node, Mediastinal		Schwannoma Malignant	Metastatic (Lung)
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Mild
		Inflammation	Suppurative, Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 743

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 613

**DOSE:** 100 mg/m3

**DISP:** Natural Death

**HISTO:** 60363

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

* Ovary		Cyst	Minimal
[ Cyst TGLs = 5-9 ]			
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
* Thymus		Schwannoma Malignant	Metastatic (Lung)
* Thyroid Gland	C Cell	Hyperplasia	Minimal

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**PRIMARY CAUSE OF DEATH** - Lung Mediastinum Schwannoma Malignant

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 744

TRT#: 8

SEX: Female

DAY ON TEST: 609

DOSE: 100 mg/m3

DISP: Natural Death

HISTO: 60364

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Liver	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Ovary	* Pancreas	* Parathyroid Gland	* Salivary Glands
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Trachea
* Urinary Bladder	* Uterus		

OBSERVATIONS

* Brain		Compression	Marked
		Hydrocephalus	Moderate
* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
	Epiglottis	Metaplasia	Squamous, Moderate
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Moderate
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Moderate
	Alveolus	Proteinosis	Mild
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Minimal
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Mild
* Mammary Gland		Hyperplasia	Mild
	[ Hyperplasia TGLs = 1,3-14+15 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Transit Epithe	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Adenoma	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 744

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 609

**DOSE:** 100 mg/m3

**DISP:** Natural Death

**HISTO:** 60364

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Adenoma TGLs = 4-10 ]

* Spleen	Lymph Follic	Atrophy	Mild
* Thymus		Atrophy	Minimal
* Thyroid Gland	C Cell	Hyperplasia	Minimal
Tongue		Hyperkeratosis	Minimal

[ Hyperkeratosis TGLs = 2-7 ]

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**PRIMARY CAUSE OF DEATH** - Pituitary Gland Pars Distalis Adenoma

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 745

TRT#: 8

SEX: Female

DAY ON TEST: 708

DOSE: 100 mg/m3

DISP: Moribund Sacrifice

HISTO: 60365

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Ovary	* Pancreas	* Parathyroid Gland	* Salivary Glands
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Trachea
* Urinary Bladder	* Uterus		

OBSERVATIONS

* Adrenal Cortex		Hypertrophy	Minimal
		Vacuolization Cytoplasmic	Minimal
* Kidney	Pelvis	Inflammation	Minimal
		Nephropathy	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
		Infiltration Cellular	Mixed Cell, Minimal
	Epiglottis	Metaplasia	Squamous, Mild
* Liver		Basophilic Focus	
		Clear Cell Focus	
		Eosinophilic Focus	
* Lung		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Mild
	Alveolar Epith	Hyperplasia	Mild
	BALT	Hyperplasia	Lymphohistiocy, Mild
		Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Chronic Active, Moderate
	Alveolus	Proteinosis	Minimal
	[ Infiltration Cellular TGLs = 2-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Minimal
* Mammary Gland		Fibroadenoma	
	[ Fibroadenoma TGLs = 1-15 ]		

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
Test Type: CHRONIC  
Route: RESPIRATORY EXPOSURE WHOLE BODY  
Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
Time Report Requested: 09:56:24  
First Dose M/F: 07/20/09 / 07/20/09  
Lab: BNW

ANIMAL ID: 745

TRT#: 8

SEX: Female

DAY ON TEST: 708

DOSE: 100 mg/m3

DISP: Moribund Sacrifice

HISTO: 60365

**ORGAN AND ACCOUNTABLE SITE STATUS**

* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Mild
	Transit Epithe	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild
	Respirat Epith	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
		Polyp	
* Pituitary Gland	Pars Distalis	Adenoma	
* Spleen		Hematopoietic Cell Proliferation	Minimal
* Thymus		Atrophy	Mild
* Thyroid Gland	C Cell	Hyperplasia	Mild
Zymbal's Gland		Carcinoma	

[ Carcinoma TGLs = 3-14 ]

PRIMARY CAUSE OF DEATH - Zymbal's Gland Carcinoma

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 746

TRT#: 8

SEX: Female

DAY ON TEST: 733

DOSE: 100 mg/m3

DISP: Terminal Sacrifice

HISTO: 60366

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Mandibular	* Lymph Node, Mediastinal	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Trachea	* Urinary Bladder	

OBSERVATIONS

* Adrenal Cortex		Angiectasis	Mild
* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Moderate
	Epiglottis	Metaplasia	Squamous, Moderate
* Liver		Clear Cell Focus	
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Moderate
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Chronic Active, Moderate
	Alveolus	Proteinosis	Moderate
	[ Infiltration Cellular TGLs = 3-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Moderate
* Mammary Gland		Carcinoma	Multiple
	[ Carcinoma TGLs = 1,4-9+14 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Mild
	Glands, Olfactory Epi	Hyperplasia	Mild
		Inflammation	Suppurative, Mild
* Ovary		Cyst	Mild

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 746

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 733

**DOSE:** 100 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60366

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Cyst TGLs = 2-9 ]

\* Thyroid Gland

C Cell

Hyperplasia

Minimal

\* Uterus

Endometrium

Hyperplasia

Cystic, Minimal

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 747

TRT#: 8

SEX: Female

DAY ON TEST: 733

DOSE: 100 mg/m3

DISP: Terminal Sacrifice

HISTO: 60367

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Mammary Gland	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Salivary Glands	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Trachea	* Urinary Bladder
* Uterus			

MISSING

\* Lymph Node, Bronchial

OBSERVATIONS

* Adrenal Cortex		Angiectasis	Mild
		Vacuolization Cytoplasmic	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Moderate
	Epiglottis	Infiltration Cellular	Mixed Cell, Minimal
		Metaplasia	Squamous, Moderate
* Liver		Clear Cell Focus	
* Lung		Fibrosis	Minimal
	Alv/Bron Epith	Hyperplasia	Moderate
	Alveolar Epith	Hyperplasia	Marked
		Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Chronic Active, Moderate
	Alveolar Epith	Metaplasia	Squamous, Mild
	Alveolus	Proteinosis	Moderate
	[ Infiltration Cellular TGLs = 2-4+5 ]		
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 747

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 733

**DOSE:** 100 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60367

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Ovary		Inflammation	Suppurative, Mild
[ Cyst TGLs = 1-9 ]		Cyst	Mild
* Thyroid Gland	C Cell	Hyperplasia	Minimal

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**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

**ANIMAL ID:** 748

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 725

**DOSE:** 100 mg/m3

**DISP:** Moribund Sacrifice

**HISTO:** 60368

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Lymph Node, Mandibular	* Lymph Node, Mediastinal
* Lymph Node, Mesenteric	* Ovary	* Pancreas	* Parathyroid Gland
* Salivary Glands	* Stomach, Forestomach	* Stomach, Glandular	* Trachea
* Urinary Bladder	* Uterus		

**MISSING**

\* Lymph Node, Bronchial

**OBSERVATIONS**

* Brain		Compression	Moderate
		Hydrocephalus	Mild
	[ Compression TGLs = 7-1 ]		
* Larynx	Epiglottis	Hyperplasia	Squamous, Mild
	Epiglottis	Metaplasia	Squamous, Mild
* Liver		Basophilic Focus	
* Lung		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Mild
	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Moderate
	Alveolus	Proteinosis	Mild
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Mammary Gland		Carcinoma	
	Duct	Cyst	Mild
	[ Carcinoma TGLs = 4-14+15 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Mild
	Goblet Cell	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20523 - 03  
Test Type: CHRONIC  
Route: RESPIRATORY EXPOSURE WHOLE BODY  
Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
Time Report Requested: 09:56:24  
First Dose M/F: 07/20/09 / 07/20/09  
Lab: BNW

ANIMAL ID: 748

TRT#: 8

SEX: Female

DAY ON TEST: 725

DOSE: 100 mg/m3

DISP: Moribund Sacrifice

HISTO: 60368

**ORGAN AND ACCOUNTABLE SITE STATUS**

	Respirat Epith	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Adenoma	
[ Adenoma TGLs = 2-10 ]			
* Skin	Epidermis	Squamous Cell Papilloma	
[ Squamous Cell Papilloma TGLs = 3-15 ]			
* Spleen	Lymph Follic	Atrophy	Moderate
* Thymus		Thymoma Benign	
[ Thymoma Benign TGLs = 8-3 ]			
* Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH - Pituitary Gland Pars Distalis Adenoma

Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 749

TRT#: 8

SEX: Female

DAY ON TEST: 732

DOSE: 100 mg/m3

DISP: Terminal Sacrifice

HISTO: 60369

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Esophagus	* Eye	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Lymph Node, Mandibular
* Lymph Node, Mesenteric	* Mammary Gland	* Ovary	* Pancreas
* Parathyroid Gland	* Salivary Glands	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Trachea	* Urinary Bladder	* Uterus

MISSING

\* Lymph Node, Mediastinal

OBSERVATIONS

* Adrenal Cortex		Angiectasis	Minimal
* Brain		Compression	Moderate
* Clitoral Gland		Inflammation	Minimal
* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Moderate
	Epiglottis	Metaplasia	Squamous, Moderate
* Liver		Basophilic Focus	
* Lung		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Moderate
	Alveolar Epith	Hyperplasia	Moderate
		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic Active, Moderate
	Alveolar Epith	Metaplasia	Squamous, Minimal
	Alveolus	Proteinosis	Mild
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20523 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
**CAS Number:** TRIMVX

**Date Report Requested:** 10/29/2014  
**Time Report Requested:** 09:56:24  
**First Dose M/F:** 07/20/09 / 07/20/09  
**Lab:** BNW

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**ANIMAL ID:** 749

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 732

**DOSE:** 100 mg/m3

**DISP:** Terminal Sacrifice

**HISTO:** 60369

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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	Respirat Epith	Hyperplasia	Minimal
	Transit Epithe	Hyperplasia	Minimal
		Inflammation	Suppurative, Mild
* Pituitary Gland	Pars Distalis	Adenoma	Multiple
[ Adenoma TGLs = 2-10 ]			
* Spleen		Hematopoietic Cell Proliferation	Minimal
* Thymus		Atrophy	Moderate
* Thyroid Gland	C Cell	Hyperplasia	Mild

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Experiment Number: 20523 - 03  
 Test Type: CHRONIC  
 Route: RESPIRATORY EXPOSURE WHOLE BODY  
 Species/Strain: RATS/Wistar Han

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Metal working fluids (Trim VX)  
 CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
 Time Report Requested: 09:56:24  
 First Dose M/F: 07/20/09 / 07/20/09  
 Lab: BNW

ANIMAL ID: 750

TRT#: 8

SEX: Female

DAY ON TEST: 661

DOSE: 100 mg/m3

DISP: Natural Death

HISTO: 60370

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Clitoral Gland	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Lymph Node, Mandibular
* Lymph Node, Mesenteric	* Ovary	* Pancreas	* Parathyroid Gland
* Salivary Glands	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Trachea	* Urinary Bladder	* Uterus

OBSERVATIONS

* Adrenal Medulla		Pheochromocytoma Malignant	
	[ Pheochromocytoma Malignant TGLs = 4-14 ]		
* Brain		Compression	Mild
* Islets, Pancreatic		Adenoma	
* Kidney	Pelvis	Inflammation	Minimal
* Larynx	Epiglottis	Hyperplasia	Squamous, Moderate
	Epiglottis	Infiltration Cellular	Mixed Cell, Minimal
		Metaplasia	Squamous, Moderate
* Liver		Basophilic Focus	
* Lung		Fibrosis	Mild
	Alv/Bron Epith	Hyperplasia	Moderate
	Alveolar Epith	Hyperplasia	Marked
		Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Chronic Active, Moderate
	[ Infiltration Cellular TGLs = 1-4+5 ]		
* Lymph Node, Bronchial		Hyperplasia	Lymphohistiocy, Mild
* Lymph Node, Mediastinal		Hyperplasia	Lymphohistiocy, Mild
* Mammary Gland		Fibroadenoma	
	[ Fibroadenoma TGLs = 5-15 ]		
Mesentery	Fat	Necrosis	Minimal
	[ Necrosis TGLs = 3-15 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 20523 - 03  
Test Type: CHRONIC  
Route: RESPIRATORY EXPOSURE WHOLE BODY  
Species/Strain: RATS/Wistar Han

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Metal working fluids (Trim VX)  
CAS Number: TRIMVX

Date Report Requested: 10/29/2014  
Time Report Requested: 09:56:24  
First Dose M/F: 07/20/09 / 07/20/09  
Lab: BNW

ANIMAL ID: 750

TRT#: 8

SEX: Female

DAY ON TEST: 661

DOSE: 100 mg/m3

DISP: Natural Death

HISTO: 60370

**ORGAN AND ACCOUNTABLE SITE STATUS**

	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell	Hyperplasia	Minimal
	Glands, Olfactory Epi	Hyperplasia	Mild
	Respirat Epith	Hyperplasia	Minimal
		Inflammation	Suppurative, Minimal
* Pituitary Gland	Pars Distalis	Adenoma	
[ Adenoma TGLs = 2-10 ]			
* Spleen	Lymph Follic	Atrophy	Minimal
* Thyroid Gland	C Cell	Hyperplasia	Minimal

PRIMARY CAUSE OF DEATH - Pituitary Gland Pars Distalis Adenoma  
CONTRIBUTORY CAUSE OF DEATH - Adrenal Medulla Pheochromocytoma Malignant  
- Mammary Gland Fibroadenoma

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