

**TDMS No.** 20523 - 02

**Test Type:** 90-DAY

**Route:** RESPIRATORY EXPOSURE WHOLE BODY

**Species/Strain:** MICE/B6C3F1

**P03: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE(a)**

Metal working fluids (Trim VX)

**CAS Number:** TRIMVX

**Date Report Requested:** 03/24/2011

**Time Report Requested:** 15:32:43

**First Dose M/F:** 07/14/08 / 07/14/08

**Lab:** BNW

F1\_M3

**C Number:** C20523  
**Lock Date:** 02/24/2009  
**Cage Range:** ALL  
**Date Range:** ALL  
**Reasons For Removal:** ALL  
**Removal Date Range:** ALL  
**Treatment Groups:** Include ALL  
**Study Gender:** Both  
**TDMSE Version:** 2.3.1  
**PWG Approval Date:** NONE

| B6C3F1 MICE MALE | 0 mg/m3 | 25 mg/m3 | 50 mg/m3 | 100 mg/m3 | 200 mg/m3 | 400 mg/m3 |
|------------------|---------|----------|----------|-----------|-----------|-----------|
|------------------|---------|----------|----------|-----------|-----------|-----------|

## Disposition Summary

|                                  |    |    |    |    |    |    |
|----------------------------------|----|----|----|----|----|----|
| Animals Initially In Study       | 10 | 10 | 10 | 10 | 10 | 10 |
| Early Deaths                     |    |    |    |    |    |    |
| Survivors                        |    |    |    |    |    |    |
| Terminal Sacrifice               | 10 | 10 | 10 | 10 | 10 | 10 |
| Animals Examined Microscopically | 10 | 10 | 10 | 10 | 10 | 10 |

## ALIMENTARY SYSTEM

|                           |      |     |     |     |     |      |
|---------------------------|------|-----|-----|-----|-----|------|
| Esophagus                 | (10) | (0) | (0) | (0) | (0) | (10) |
| Gallbladder               | (10) | (0) | (0) | (0) | (0) | (10) |
| Intestine Large, Cecum    | (10) | (0) | (0) | (0) | (0) | (10) |
| Intestine Large, Colon    | (10) | (0) | (0) | (0) | (0) | (10) |
| Intestine Large, Rectum   | (10) | (0) | (0) | (0) | (0) | (9)  |
| Intestine Small, Duodenum | (10) | (0) | (0) | (0) | (0) | (10) |
| Intestine Small, Ileum    | (10) | (0) | (0) | (0) | (0) | (10) |
| Intestine Small, Jejunum  | (10) | (0) | (0) | (0) | (0) | (10) |
| Liver                     | (10) | (0) | (0) | (0) | (0) | (10) |
| Pancreas                  | (10) | (0) | (0) | (0) | (0) | (10) |
| Salivary Glands           | (10) | (0) | (0) | (0) | (0) | (10) |
| Stomach, Forestomach      | (10) | (0) | (0) | (0) | (0) | (10) |
| Stomach, Glandular        | (10) | (0) | (0) | (0) | (0) | (10) |

## CARDIOVASCULAR SYSTEM

|              |      |     |     |     |     |      |
|--------------|------|-----|-----|-----|-----|------|
| Blood Vessel | (10) | (0) | (0) | (0) | (0) | (10) |
| Heart        | (10) | (0) | (0) | (0) | (0) | (10) |

## ENDOCRINE SYSTEM

|                                   |         |     |     |     |     |         |
|-----------------------------------|---------|-----|-----|-----|-----|---------|
| Adrenal Cortex                    | (10)    | (0) | (0) | (0) | (0) | (10)    |
| Accessory Adrenal Cortical Nodule | 1 (10%) |     |     |     |     | 1 (10%) |
| Subcapsular, Hyperplasia          | 2 (20%) |     |     |     |     | 1 (10%) |
| Adrenal Medulla                   | (10)    | (0) | (0) | (0) | (0) | (10)    |

a - Number of animals examined microscopically at site and number of animals with lesion

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Metal working fluids (Trim VX)

Time Report Requested: 15:32:43

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: TRIMVX

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Species/Strain: MICE/B6C3F1

Lab: BNW

| B6C3F1 MICE MALE   | 0 mg/m3 | 25 mg/m3 | 50 mg/m3 | 100 mg/m3 | 200 mg/m3 | 400 mg/m3 |
|--------------------|---------|----------|----------|-----------|-----------|-----------|
| Islets, Pancreatic | (10)    | (0)      | (0)      | (0)       | (0)       | (10)      |
| Parathyroid Gland  | (5)     | (0)      | (0)      | (0)       | (0)       | (7)       |
| Pituitary Gland    | (10)    | (0)      | (0)      | (0)       | (0)       | (9)       |
| Thyroid Gland      | (10)    | (0)      | (0)      | (0)       | (0)       | (10)      |

## GENERAL BODY SYSTEM

None

## GENITAL SYSTEM

|                                   |         |     |     |     |     |      |
|-----------------------------------|---------|-----|-----|-----|-----|------|
| Epididymis                        | (10)    | (0) | (0) | (0) | (0) | (10) |
| Preputial Gland                   | (10)    | (0) | (0) | (0) | (0) | (10) |
| Prostate                          | (10)    | (0) | (0) | (0) | (0) | (10) |
| Seminal Vesicle                   | (10)    | (0) | (0) | (0) | (0) | (10) |
| Testes                            | (10)    | (0) | (0) | (0) | (0) | (10) |
| Germinal Epithelium, Degeneration | 1 (10%) |     |     |     |     |      |

## HEMATOPOIETIC SYSTEM

|                         |      |     |     |     |     |      |
|-------------------------|------|-----|-----|-----|-----|------|
| Bone Marrow             | (10) | (0) | (0) | (0) | (0) | (10) |
| Lymph Node, Bronchial   | (8)  | (0) | (0) | (0) | (0) | (7)  |
| Lymph Node, Mandibular  | (8)  | (0) | (0) | (0) | (0) | (8)  |
| Lymph Node, Mediastinal | (3)  | (0) | (0) | (0) | (0) | (6)  |
| Lymph Node, Mesenteric  | (10) | (0) | (0) | (0) | (0) | (10) |
| Spleen                  | (10) | (0) | (0) | (0) | (0) | (10) |
| Thymus                  | (10) | (0) | (0) | (0) | (0) | (10) |

## INTEGUMENTARY SYSTEM

|      |      |     |     |     |     |      |
|------|------|-----|-----|-----|-----|------|
| Skin | (10) | (0) | (0) | (0) | (0) | (10) |
|------|------|-----|-----|-----|-----|------|

a - Number of animals examined microscopically at site and number of animals with lesion

| B6C3F1 MICE MALE                                      | 0 mg/m3 | 25 mg/m3  | 50 mg/m3  | 100 mg/m3 | 200 mg/m3 | 400 mg/m3 |
|---|---------|-----------|-----------|-----------|-----------|-----------|
| <b>MUSCULOSKELETAL SYSTEM</b>                         |         |           |           |           |           |           |
| Bone  | (10)    | (0)       | (0)       | (0)       | (0)       | (10)      |
| <b>NERVOUS SYSTEM</b>                                 |         |           |           |           |           |           |
| Brain   | (10)    | (0)       | (0)       | (0)       | (0)       | (10)      |
| <b>RESPIRATORY SYSTEM</b>                             |         |           |           |           |           |           |
| Larynx  | (10)    | (10)      | (10)      | (10)      | (10)      | (10)      |
| Hyperplasia, Squamous                                 |         |           | 2 (20%)   | 9 (90%)   | 8 (80%)   | 9 (90%)   |
| Inflammation, Chronic                                 |         | 4 (40%)   |           | 3 (30%)   | 1 (10%)   |           |
| Metaplasia, Squamous                                  |         | 10 (100%) | 10 (100%) | 10 (100%) | 10 (100%) | 10 (100%) |
| Lung  | (10)    | (10)      | (10)      | (10)      | (10)      | (10)      |
| Fibrosis  |         |           | 1 (10%)   | 8 (80%)   | 10 (100%) | 10 (100%) |
| Infiltration Cellular, Histiocyte                     |         |           | 2 (20%)   | 9 (90%)   | 10 (100%) | 10 (100%) |
| Inflammation, Chronic Active                          |         |           | 4 (40%)   | 10 (100%) | 10 (100%) | 10 (100%) |
| Bronchiole, Hyperplasia                               |         |           | 9 (90%)   | 10 (100%) | 10 (100%) | 10 (100%) |
| Nose  | (10)    | (10)      | (10)      | (10)      | (10)      | (10)      |
| Inflammation, Suppurative                             |         | 7 (70%)   | 8 (80%)   | 8 (80%)   | 8 (80%)   | 10 (100%) |
| Olfactory Epithelium, Accumulation, Hyaline Droplet   |         | 10 (100%) | 10 (100%) | 10 (100%) | 10 (100%) | 10 (100%) |
| Respiratory Epithelium, Accumulation, Hyaline Droplet |         | 10 (100%) | 10 (100%) | 10 (100%) | 10 (100%) | 10 (100%) |
| Trachea   | (10)    | (10)      | (10)      | (10)      | (10)      | (10)      |
| <b>SPECIAL SENSES SYSTEM</b>                          |         |           |           |           |           |           |
| Eye   | (10)    | (0)       | (0)       | (0)       | (0)       | (10)      |
| Harderian Gland                                       | (10)    | (0)       | (0)       | (0)       | (0)       | (10)      |
| <b>URINARY SYSTEM</b>                                 |         |           |           |           |           |           |

a - Number of animals examined microscopically at site and number of animals with lesion

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Metal working fluids (Trim VX)

CAS Number: TRIMVX

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First Dose M/F: 07/14/08 / 07/14/08

Lab: BNW

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| B6C3F1 MICE MALE      | 0 mg/m3 | 25 mg/m3 | 50 mg/m3 | 100 mg/m3 | 200 mg/m3 | 400 mg/m3 |
|-----------------------|---------|----------|----------|-----------|-----------|-----------|
| Kidney                | (10)    | (0)      | (0)      | (0)       | (0)       | (10)      |
| Inflammation, Chronic | 2 (20%) |          |          |           |           | 1 (10%)   |
| Nephropathy           | 1 (10%) |          |          |           |           |           |
| Urinary Bladder       | (10)    | (0)      | (0)      | (0)       | (0)       | (9)       |

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

a - Number of animals examined microscopically at site and number of animals with lesion

| B6C3F1 MICE FEMALE | 0 mg/m3 | 25 mg/m3 | 50 mg/m3 | 100 mg/m3 | 200 mg/m3 | 400 mg/m3 |
|--------------------|---------|----------|----------|-----------|-----------|-----------|
|--------------------|---------|----------|----------|-----------|-----------|-----------|

## Disposition Summary

|                                  |    |    |    |    |    |    |
|----------------------------------|----|----|----|----|----|----|
| Animals Initially In Study       | 10 | 10 | 10 | 10 | 10 | 10 |
| Early Deaths                     |    |    |    |    |    |    |
| Survivors                        |    |    |    |    |    |    |
| Terminal Sacrifice               | 10 | 10 | 10 | 10 | 10 | 10 |
| Animals Examined Microscopically | 10 | 10 | 10 | 10 | 10 | 10 |

## ALIMENTARY SYSTEM

|                           |      |     |     |     |     |      |
|---------------------------|------|-----|-----|-----|-----|------|
| Esophagus                 | (10) | (0) | (0) | (0) | (0) | (10) |
| Gallbladder               | (9)  | (0) | (0) | (0) | (0) | (8)  |
| Intestine Large, Cecum    | (10) | (0) | (0) | (0) | (0) | (10) |
| Intestine Large, Colon    | (10) | (0) | (0) | (0) | (0) | (10) |
| Intestine Large, Rectum   | (10) | (0) | (0) | (0) | (0) | (10) |
| Intestine Small, Duodenum | (10) | (0) | (0) | (0) | (0) | (10) |
| Intestine Small, Ileum    | (10) | (0) | (0) | (0) | (0) | (10) |
| Intestine Small, Jejunum  | (10) | (0) | (0) | (0) | (0) | (10) |
| Liver                     | (10) | (0) | (0) | (0) | (0) | (10) |
| Pancreas                  | (10) | (0) | (0) | (0) | (0) | (10) |
| Salivary Glands           | (10) | (0) | (0) | (0) | (0) | (10) |
| Stomach, Forestomach      | (10) | (0) | (0) | (0) | (0) | (10) |
| Stomach, Glandular        | (10) | (0) | (0) | (0) | (0) | (10) |

## CARDIOVASCULAR SYSTEM

|              |      |     |     |     |     |      |
|--------------|------|-----|-----|-----|-----|------|
| Blood Vessel | (9)  | (0) | (0) | (0) | (0) | (10) |
| Heart        | (10) | (0) | (0) | (0) | (0) | (10) |

## ENDOCRINE SYSTEM

|  |         |     |     |     |     |         |
|--|---------|-----|-----|-----|-----|---------|
| Adrenal Cortex                                 | (10)    | (0) | (1) | (1) | (0) | (10)    |
| Vacuolization Cytoplasmic                      | 6 (60%) |     |     |     |     | 4 (40%) |
| Subcapsular, Accessory Adrenal Cortical Nodule | 1 (10%) |     |     |     |     | 1 (10%) |

a - Number of animals examined microscopically at site and number of animals with lesion

| B6C3F1 MICE FEMALE       | 0 mg/m3 | 25 mg/m3 | 50 mg/m3 | 100 mg/m3 | 200 mg/m3 | 400 mg/m3 |
|--------------------------|---------|----------|----------|-----------|-----------|-----------|
| Subcapsular, Hyperplasia | 5 (50%) |          |          |           |           | 5 (50%)   |
| Adrenal Medulla          | (10)    | (0)      | (0)      | (0)       | (0)       | (10)      |
| Islets, Pancreatic       | (10)    | (0)      | (0)      | (0)       | (0)       | (10)      |
| Parathyroid Gland        | (5)     | (0)      | (0)      | (0)       | (0)       | (3)       |
| Pituitary Gland          | (10)    | (0)      | (0)      | (0)       | (0)       | (10)      |
| Thyroid Gland            | (10)    | (0)      | (0)      | (0)       | (0)       | (10)      |

## GENERAL BODY SYSTEM

None

## GENITAL SYSTEM

|                |      |     |     |     |     |      |
|----------------|------|-----|-----|-----|-----|------|
| Clitoral Gland | (8)  | (0) | (0) | (0) | (0) | (9)  |
| Ovary          | (10) | (0) | (0) | (0) | (0) | (10) |
| Uterus         | (10) | (0) | (0) | (0) | (0) | (10) |

## HEMATOPOIETIC SYSTEM

|                         |      |     |     |     |     |      |
|-------------------------|------|-----|-----|-----|-----|------|
| Bone Marrow             | (10) | (0) | (0) | (0) | (0) | (10) |
| Lymph Node, Bronchial   | (6)  | (0) | (0) | (0) | (0) | (9)  |
| Lymph Node, Mandibular  | (8)  | (0) | (0) | (0) | (0) | (7)  |
| Lymph Node, Mediastinal | (6)  | (0) | (0) | (0) | (1) | (6)  |
| Lymph Node, Mesenteric  | (10) | (0) | (0) | (0) | (0) | (10) |
| Spleen                  | (10) | (0) | (0) | (0) | (0) | (10) |
| Thymus                  | (10) | (0) | (0) | (0) | (0) | (10) |

## INTEGUMENTARY SYSTEM

|               |      |     |     |     |     |      |
|---------------|------|-----|-----|-----|-----|------|
| Mammary Gland | (10) | (0) | (0) | (0) | (0) | (10) |
| Skin          | (10) | (0) | (0) | (0) | (0) | (10) |

a - Number of animals examined microscopically at site and number of animals with lesion

| B6C3F1 MICE FEMALE                                    | 0 mg/m3 | 25 mg/m3  | 50 mg/m3  | 100 mg/m3 | 200 mg/m3 | 400 mg/m3 |
|---|---------|-----------|-----------|-----------|-----------|-----------|
| <b>MUSCULOSKELETAL SYSTEM</b>                         |         |           |           |           |           |           |
| Bone  | (10)    | (0)       | (0)       | (0)       | (0)       | (10)      |
| <b>NERVOUS SYSTEM</b>                                 |         |           |           |           |           |           |
| Brain   | (10)    | (0)       | (0)       | (0)       | (0)       | (10)      |
| <b>RESPIRATORY SYSTEM</b>                             |         |           |           |           |           |           |
| Larynx  | (10)    | (10)      | (10)      | (10)      | (10)      | (10)      |
| Hyperplasia, Squamous                                 |         |           | 1 (10%)   | 7 (70%)   | 7 (70%)   | 8 (80%)   |
| Inflammation, Chronic                                 |         | 4 (40%)   | 5 (50%)   | 8 (80%)   | 9 (90%)   | 5 (50%)   |
| Metaplasia, Squamous                                  |         | 10 (100%) | 10 (100%) | 10 (100%) | 10 (100%) | 10 (100%) |
| Lung  | (10)    | (10)      | (10)      | (10)      | (10)      | (10)      |
| Fibrosis  |         |           |           | 10 (100%) | 10 (100%) | 10 (100%) |
| Infiltration Cellular, Histiocyte                     |         |           | 1 (10%)   | 5 (50%)   | 9 (90%)   | 10 (100%) |
| Inflammation, Chronic Active                          | 1 (10%) |           | 2 (20%)   | 10 (100%) | 10 (100%) | 10 (100%) |
| Bronchiole, Hyperplasia                               |         |           | 4 (40%)   | 10 (100%) | 10 (100%) | 10 (100%) |
| Nose  | (10)    | (10)      | (10)      | (10)      | (10)      | (10)      |
| Inflammation, Suppurative                             |         | 1 (10%)   | 6 (60%)   | 5 (50%)   | 10 (100%) | 7 (70%)   |
| Olfactory Epithelium, Accumulation, Hyaline Droplet   |         | 10 (100%) | 10 (100%) | 10 (100%) | 10 (100%) | 10 (100%) |
| Respiratory Epithelium, Accumulation, Hyaline Droplet |         | 10 (100%) | 10 (100%) | 10 (100%) | 10 (100%) | 10 (100%) |
| Respiratory Epithelium, Hyperplasia                   |         |           |           |           | 1 (10%)   |           |
| Trachea   | (10)    | (10)      | (10)      | (10)      | (10)      | (9)       |
| <b>SPECIAL SENSES SYSTEM</b>                          |         |           |           |           |           |           |
| Eye   | (10)    | (0)       | (0)       | (0)       | (0)       | (10)      |
| Harderian Gland                                       | (10)    | (0)       | (0)       | (0)       | (0)       | (10)      |

a - Number of animals examined microscopically at site and number of animals with lesion



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Lab: BNW

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| B6C3F1 MICE FEMALE | 0 mg/m3 | 25 mg/m3 | 50 mg/m3 | 100 mg/m3 | 200 mg/m3 | 400 mg/m3 |
|--------------------|---------|----------|----------|-----------|-----------|-----------|
| <hr/>              |         |          |          |           |           |           |
| URINARY SYSTEM     |         |          |          |           |           |           |
| Kidney             | (10)    | (0)      | (0)      | (0)       | (0)       | (10)      |
| Cyst               | 1 (10%) |          |          |           |           |           |
| Nephropathy        | 1 (10%) |          |          |           |           | 1 (10%)   |
| Urinary Bladder    | (10)    | (0)      | (0)      | (0)       | (0)       | (10)      |

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

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