1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND THE COMPANY/UNDERTAKING

Product Identifier

Material Name: Fesoterodine Fumarate Tablets

Trade Name: TOVIAZ
Synonyms: Fesoterodine Sustained Release (SR) Tablets
Chemical Family: Not determined

Relevant Identified Uses of the Substance or Mixture and Uses Advised Against

Intended Use: Pharmaceutical product for the treatment of overactive bladder

Details of the Supplier of the Safety Data Sheet

Pfizer Ltd
Pfizer Pharmaceuticals Group
Ramsgate Road
Sandwich, Kent
CT13 9NJ
United Kingdom
+00 44 (0)1304 616161

Emergency telephone number:
CHEMTREC (24 hours): 1-800-424-9300
ChemSafe (24 hours): +44 (0)208 762 8322

Contact E-Mail: pfizer-MSDS@pfizer.com

2. HAZARDS IDENTIFICATION

Classification of the Substance or Mixture

GHS - Classification
Reproductive Toxicity: Category 2

Label Elements

Signal Word: Warning
Hazard Statements: H361d - Suspected of damaging the unborn child

Precautionary Statements:
P202 - Do not handle until all safety precautions have been read and understood
P281 - Use personal protective equipment as required
P308 + P313 - IF exposed or concerned: Get medical attention/advice
P405 - Store locked up
P501 - Dispose of contents/container in accordance with all local and national regulations
SAFETY DATA SHEET

Material Name: Fesoterodine Fumarate Tablets
Revision date: 02-Jun-2016
Version: 3.1
Page 2 of 10

Other Hazards
Note: No data available
This document has been prepared in accordance with standards for workplace safety, which requires the inclusion of all known hazards of the product or its ingredients regardless of the potential risk. The precautionary statements and warning included may not apply in all cases. Your needs may vary depending upon the potential for exposure in your workplace.

3. COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Hazardous</th>
<th>Ingredient</th>
<th>CAS Number</th>
<th>EU EINECS/ELINCS List</th>
<th>GHS Classification</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fesoterodine fumarate</td>
<td>286930-03-8</td>
<td>Not Listed</td>
<td>Acute Tox.4 (H302) Eye Irrit. 2A (H319) Repr. 2 (H361d) Aquatic Acute 3 (H402)</td>
<td>1.2-2.5</td>
<td></td>
</tr>
<tr>
<td>Microcrystalline cellulose</td>
<td>9004-34-6</td>
<td>232-674-9</td>
<td>Not Listed</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>Talc (non-asbestiform)</td>
<td>14807-96-6</td>
<td>238-877-9</td>
<td>Not Listed</td>
<td>*</td>
<td></td>
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<tr>
<td>Glycerol dibehenate</td>
<td>99880-64-5</td>
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<td>Not Listed</td>
<td>*</td>
<td></td>
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<tr>
<td>Opadry blue</td>
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<td>Not Listed</td>
<td>Not Listed</td>
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<tr>
<td>Lactose Monohydrate</td>
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<td>Not Listed</td>
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<tr>
<td>Hydroxypropyl methylcellulose</td>
<td>9004-65-3</td>
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<td>Not Listed</td>
<td>*</td>
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<tr>
<td>Xylitol</td>
<td>87-99-0</td>
<td>201-788-0</td>
<td>Not Listed</td>
<td>*</td>
<td></td>
</tr>
</tbody>
</table>

Additional Information: * Proprietary Ingredient(s) indicated as hazardous have been assessed under standards for workplace safety. In accordance with 29 CFR 1910.1200, the exact percentage composition of this mixture has been withheld as a trade secret.

For the full text of the CLP/GHS abbreviations mentioned in this Section, see Section 16

4. FIRST AID MEASURES

Description of First Aid Measures

Eye Contact: Flush with water while holding eyelids open for at least 15 minutes. Seek medical attention immediately.

Skin Contact: Remove contaminated clothing. Flush area with large amounts of water. Use soap. Seek medical attention.

Ingestion: Never give anything by mouth to an unconscious person. Wash out mouth with water. Do not induce vomiting unless directed by medical personnel. Seek medical attention immediately.

Inhalation: Remove to fresh air and keep patient at rest. Seek medical attention immediately.

Most Important Symptoms and Effects, Both Acute and Delayed

Symptoms and Effects of Exposure: For information on potential signs and symptoms of exposure, See Section 2 - Hazards Identification and/or Section 11 - Toxicological Information.

Medical Conditions Aggravated by Exposure: None known
5. FIRE FIGHTING MEASURES

Extinguishing Media: Extinguish fires with CO2, extinguishing powder, foam, or water.

Special Hazards Arising from the Substance or Mixture
Hazardous Combustion: Formation of toxic gases is possible during heating or fire. May include oxides of carbon and nitrogen

Fire / Explosion Hazards: Not determined

Advice for Fire-Fighters
During all fire fighting activities, wear appropriate protective equipment, including self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures
Personnel involved in clean-up should wear appropriate personal protective equipment (see Section 8). Minimize exposure.

Environmental Precautions
Place waste in an appropriately labeled, sealed container for disposal. Care should be taken to avoid environmental release.

Methods and Material for Containment and Cleaning Up
Measures for Cleaning / Collecting: Contain the source of spill if it is safe to do so. Collect spilled material by a method that controls dust generation. A damp cloth or a filtered vacuum should be used to clean spills of dry solids. Clean spill area thoroughly.

Additional Consideration for Large Spills: Non-essential personnel should be evacuated from affected area. Report emergency situations immediately. Clean up operations should only be undertaken by trained personnel.

7. HANDLING AND STORAGE

Precautions for Safe Handling
Minimize dust generation and accumulation. If tablets or capsules are crushed and/or broken, avoid breathing dust and avoid contact with eyes, skin, and clothing. When handling, use appropriate personal protective equipment (see Section 8). Wash thoroughly after handling. Releases to the environment should be avoided. Review and implement appropriate technical and procedural waste water and waste disposal measures to prevent occupational exposure or environmental releases. Potential points of process emissions of this material to the atmosphere should be controlled with dust collectors, HEPA filtration systems or other equivalent controls.

Conditions for Safe Storage, Including any Incompatibilities
Storage Conditions: Store as directed by product packaging.
Specific end use(s): Pharmaceutical drug product

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control Parameters
Refer to available public information for specific member state Occupational Exposure Limits.

Fesoterodine fumarate
Pfizer OEL TWA-8 Hr: 35µg/m³

Microcrystalline cellulose
8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Controls

Engineering Controls:

Engineering controls should be used as the primary means to control exposures. General room ventilation is adequate unless the process generates dust, mist or fumes. Keep airborne contamination levels below the exposure limits listed above in this section.

<table>
<thead>
<tr>
<th>Material Name: Fesoterodine Fumarate Tablets</th>
<th>Version: 3.1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revision date: 02-Jun-2016</td>
<td>Page 4 of 10</td>
</tr>
</tbody>
</table>

### Table: Exposure Limits (TWA)

<table>
<thead>
<tr>
<th>Country</th>
<th>Limit Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH TWA</td>
<td>10 mg/m³</td>
</tr>
<tr>
<td>Australia TWA</td>
<td>10 mg/m³</td>
</tr>
<tr>
<td>Belgium OEL - TWA</td>
<td>10 mg/m³</td>
</tr>
<tr>
<td>Estonia OEL - TWA</td>
<td>10 mg/m³</td>
</tr>
<tr>
<td>France OEL - TWA</td>
<td>10 mg/m³</td>
</tr>
<tr>
<td>Ireland OEL - TWA</td>
<td>10 mg/m³</td>
</tr>
<tr>
<td>Latvia OEL - TWA</td>
<td>2 mg/m³</td>
</tr>
<tr>
<td>OSHA - Final PELS - TWAs:</td>
<td>15 mg/m³</td>
</tr>
<tr>
<td>Portugal OEL - TWA</td>
<td>10 mg/m³</td>
</tr>
<tr>
<td>Romania OEL - TWA</td>
<td>10 mg/m³</td>
</tr>
<tr>
<td>Russia OEL - TWA</td>
<td>6 mg/m³</td>
</tr>
<tr>
<td>Spain OEL - TWA</td>
<td>10 mg/m³</td>
</tr>
<tr>
<td>Switzerland OEL - TWAs</td>
<td>3 mg/m³</td>
</tr>
<tr>
<td>Vietnam OEL - TWA</td>
<td>10 mg/m³</td>
</tr>
</tbody>
</table>

---

Talc (non-asbestiform)

<table>
<thead>
<tr>
<th>Country</th>
<th>Limit Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH TWA</td>
<td>2 mg/m³</td>
</tr>
<tr>
<td>Australia TWA</td>
<td>2.5 mg/m³</td>
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<tr>
<td>Austria OEL - MAKs</td>
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<tr>
<td>Belgium OEL - TWA</td>
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<tr>
<td>Bulgaria OEL - TWA</td>
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<tr>
<td>Czech Republic OEL - TWA</td>
<td>2.0 mg/m³</td>
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<tr>
<td>Denmark OEL - TWA</td>
<td>0.3 fiber/cm³</td>
</tr>
<tr>
<td>Finland OEL - TWA</td>
<td>0.5 fiber/cm³</td>
</tr>
<tr>
<td>Greece OEL - TWA</td>
<td>10 mg/m³</td>
</tr>
<tr>
<td>Hungary OEL - TWA</td>
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<tr>
<td>Ireland OEL - TWAs</td>
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<tr>
<td>Lithuania OEL - TWA</td>
<td>2 mg/m³</td>
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<tr>
<td>Netherlands OEL - TWA</td>
<td>0.25 mg/m³</td>
</tr>
<tr>
<td>OSHA - Final PELs - Table Z-3 Mineral D:</td>
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</tr>
<tr>
<td>Poland OEL - TWA</td>
<td>4.0 mg/m³</td>
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<tr>
<td>Portugal OEL - TWA</td>
<td>1.0 mg/m³</td>
</tr>
<tr>
<td>Romania OEL - TWA</td>
<td>2 mg/m³</td>
</tr>
<tr>
<td>Slovakia OEL - TWA</td>
<td>2 mg/m³</td>
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<td>Slovenia OEL - TWA</td>
<td>10 mg/m³</td>
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<td>Sweden OEL - TWAs</td>
<td>2 mg/m³</td>
</tr>
<tr>
<td>Switzerland OEL - TWAs</td>
<td>2 mg/m³</td>
</tr>
</tbody>
</table>
8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Personal Protective Equipment:
Refer to applicable national standards and regulations in the selection and use of personal protective equipment (PPE).

Hands:
Impervious gloves are recommended if skin contact with drug product is possible and for bulk processing operations.

Eyes:
Wear safety glasses or goggles if eye contact is possible.

Skin:
Impervious protective clothing is recommended if skin contact with drug product is possible and for bulk processing operations.

Respiratory protection:
Under normal conditions of use, if the applicable Occupational Exposure Limit (OEL) is exceeded, wear an appropriate respirator with a protection factor sufficient to control exposures to below the OEL (e.g. particulate respirator with a half mask, P3 filter). (Respirators must meet the standards in accordance with EN140, EN143, ASTM F2704-10 or international equivalent.)

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Film-coated tablets
Odor: No data available.
Color: Light blue or Blue
Odor Threshold: No data available.
Molecular Weight: Mixture

Solvent Solubility: No data available
Water Solubility: No data available
Solubility: Highly soluble: Water
pH: No data available.
Melting/Freezing Point (°C): No data available
Boiling Point (°C): No data available
Partition Coefficient: (Method, pH, Endpoint, Value)
Fesoterodine fumarate
Predicted 7.4 Log D 2.23
Xylitol
No data available
Hydroxypropyl methylcellulose
No data available
Opadry blue
No data available
Lactose Monohydrate
No data available
Microcrystalline cellulose
No data available
Talc (non-asbestiform)
No data available
Decomposition Temperature (°C): No data available.
Evaporation Rate (Gram/s): No data available
Vapor Pressure (kPa): No data available
Vapor Density (g/ml): No data available
Relative Density: No data available
Viscosity: No data available

Flammability:
Autoignition Temperature (Solid) (°C): No data available
Flammability (Solids): No data available
Flash Point (Liquid) (°C): No data available
Upper Explosive Limits (Liquid) (% by Vol.): No data available
Lower Explosive Limits (Liquid) (% by Vol.): No data available
10. STABILITY AND REACTIVITY

Reactivity: No data available
Chemical Stability: Stable under normal conditions of use.
Possibility of Hazardous Reactions
  Oxidizing Properties: No data available
  Conditions to Avoid: Fine particles (such as dust and mists) may fuel fires/explosions.
  Incompatible Materials: As a precautionary measure, keep away from strong oxidizers
  Hazardous Decomposition Products: No data available

11. TOXICOLOGICAL INFORMATION

Information on Toxicological Effects
General Information: The information included in this section describes the potential hazards of the individual ingredients.
Short Term: May be harmful if swallowed. May cause eye irritation if tablets are crushed or broken. (based on components).
Long Term: Repeat-dose studies in animals have shown a potential to cause adverse effects on liver and the developing fetus.
Known Clinical Effects: Adverse effects most commonly reported in clinical use include dry mouth constipation, upset stomach, dry eyes, urinary tract infection, abdominal pain, back pain, inflammation of the pharynx (pharyngitis), painful urination, and difficulty with urination.

Acute Toxicity: (Species, Route, End Point, Dose)

Fesoterodine fumarate
  Rat Oral LD50 ~ 681 mg/kg
  Mouse Oral LD50 ~ 316 mg/kg
  Rat Intravenous NOAEL 10mg/kg
  Mouse Intravenous NOAEL 10mg/kg

Hydroxypropyl methylcellulose
  Rat Oral LD50 > 10,000 mg/kg

Lactose Monohydrate
  Rat Oral LD50 29700 mg/kg

Microcrystalline cellulose
  Rat Oral LD50 > 5000 mg/kg
  Rabbit Dermal LD50 > 2000 mg/kg

Talc (non-asbestiform)
  Rat Oral LD50 > 1600 mg/kg
Acute Toxicity Comments: A greater than symbol (>) indicates that the toxicity endpoint being tested was not achievable at the highest dose used in the test.

Irritation / Sensitization: (Study Type, Species, Severity)

Fesoterodine fumarate
  Skin Sensitization - M & K Guinea Pig Negative
  Eye Irritation Rabbit Irritant
11. TOXICOLOGICAL INFORMATION

Repeated Dose Toxicity: (Duration, Species, Route, Dose, End Point, Target Organ)

Fesoterodine fumarate
- 6 Month(s) Mouse Oral 25 mg/kg/day NOAEL None identified
- 13 Week(s) Rat Oral 5 mg/kg/day NOEL Liver
- 13 Week(s) Dog Oral 2.5 mg/kg/day NOAEL Cardiovascular system, Blood
- 9 Month(s) Dog Oral 2.5 mg/kg/day NOAEL Cardiovascular system, Gallbladder

Reproduction & Developmental Toxicity: (Study Type, Species, Route, Dose, End Point, Effect(s))

Fesoterodine fumarate
- Fertility and Embryonic Development Mouse Oral mg/kg/day NOAEL None identified
- Embryo / Fetal Development Mouse Oral 15 mg/kg/day NOAEL Embryotoxicity, Not Teratogenic
- Embryo / Fetal Development Rabbit Oral 9 mg/kg/day NOAEL Embryotoxicity, Not Teratogenic
- Embryo / Fetal Development Rabbit Subcutaneous 4.5 mg/kg/day NOAEL No effects at maximum dose
- Prenatal & Postnatal Development Mouse Oral 60 mg/kg/day NOAEL No effects at maximum dose

Genetic Toxicity: (Study Type, Cell Type/Organism, Result)

Fesoterodine fumarate
- Bacterial Mutagenicity (Ames) Salmonella, E. coli Negative
- Chromosome Aberration Human Lymphocytes Negative
- In Vivo Micronucleus Mouse Negative

Lactose Monohydrate
- In Vitro Bacterial Mutagenicity (Ames) Salmonella, E. coli Negative

Carcinogenicity: (Duration, Species, Route, Dose, End Point, Effect(s))

Fesoterodine fumarate
- 2 Year(s) Mouse Oral 60 mg/kg/day NOAEL Not carcinogenic
- 2 Year(s) Rat Oral 60 mg/kg/day NOAEL Not carcinogenic

Carcinogen Status:
None of the components of this formulation are listed as a carcinogen by IARC, NTP or OSHA.

Talc (non-asbestiform)
- IARC: Group 3 (Not Classifiable)

12. ECOLOGICAL INFORMATION

Environmental Overview:
Environmental properties have not been investigated. Releases to the environment should be avoided. The active ingredient in this formulation may be harmful to aquatic organisms. Long-term adverse effects to aquatic organisms are possible.
Toxicity:

**Aquatic Toxicity: (Species, Method, End Point, Duration, Result)**

**Fesoterodine fumarate**

*Pseudokirchneriella subcapitata* (Green Alga) OECD EC50 72 Hours 20 mg/L

Activated sludge OECD EC50 3 Hours > 1000 mg/L

*Daphnia Magna* (Water Flea) OECD NOEC 21 Days 3.2 mg/L

*Brachydanio rerio* (Zebra fish) OECD NOEC 35 Days 11.5 mg/L

**Aquatic Toxicity Comments:** A greater than (>) symbol indicates that acute ecotoxicity was not observed at the maximum solubility. Since the substance is insoluble in aqueous solutions above this concentration, an acute ecotoxicity value (i.e. LC/EC50) is not achievable.

**Persistence and Degradability:** No data available

**Bio-accumulative Potential:**

**Partition Coefficient: (Method, pH, Endpoint, Value)**

**Fesoterodine fumarate**

Predicted 7.4 Log D 2.23

**Mobility in Soil:** No data available

---

### 13. DISPOSAL CONSIDERATIONS

**Waste Treatment Methods:** Dispose of waste in accordance with all applicable laws and regulations. Member State specific and Community specific provisions must be considered. Considering the relevant known environmental and human health hazards of the material, review and implement appropriate technical and procedural waste water and waste disposal measures to prevent occupational exposure and environmental release. It is recommended that waste minimization be practiced. The best available technology should be utilized to prevent environmental releases. This may include destructive techniques for waste and wastewater.

---

### 14. TRANSPORT INFORMATION

The following refers to all modes of transportation unless specified below.

Not regulated for transport under USDOT, EUADR, IATA, or IMDG regulations.

---

### 15. REGULATORY INFORMATION

Safety, Health and Environmental Regulations/Legislation Specific for the Substance or Mixture

---

PZ00576
### 15. REGULATORY INFORMATION

**Fesoterodine fumarate**

- **CERCLA/SARA 313 Emission reporting**: Not Listed
- **California Proposition 65**: Not Listed
- **EU EINECS/ELINCS List**: Not Listed

**Glycerol dibehenate**

- **CERCLA/SARA 313 Emission reporting**: Not Listed
- **California Proposition 65**: Not Listed
- **EU EINECS/ELINCS List**: Not Listed

**Microcrystalline cellulose**

- **CERCLA/SARA 313 Emission reporting**: Not Listed
- **California Proposition 65**: Not Listed
- **Inventory - United States TSCA - Sect. 8(b)**: Present
- **Australia (AICS)**: Present
- **REACH - Annex XVII - Restrictions on Certain Dangerous Substances**: Use restricted. See item 9[f]. powder
- **EU EINECS/ELINCS List**: 232-674-9

**Opadry blue**

- **CERCLA/SARA 313 Emission reporting**: Not Listed
- **California Proposition 65**: Not Listed
- **EU EINECS/ELINCS List**: Not Listed

**Lactose Monohydrate**

- **CERCLA/SARA 313 Emission reporting**: Not Listed
- **California Proposition 65**: Not Listed
- **Australia (AICS)**: Present
- **REACH - Annex IV - Exemptions from the obligations of Register**: Present
- **EU EINECS/ELINCS List**: Not Listed

**Hydroxypropyl methylcellulose**

- **CERCLA/SARA 313 Emission reporting**: Not Listed
- **California Proposition 65**: Not Listed
- **Inventory - United States TSCA - Sect. 8(b)**: Present
- **Australia (AICS)**: Present
- **Standard for the Uniform Scheduling for Drugs and Poisons**: Schedule 4
- **EU EINECS/ELINCS List**: Not Listed

**Talc (non-asbestiform)**

- **CERCLA/SARA 313 Emission reporting**: Not Listed
- **California Proposition 65**: Not Listed
- **Inventory - United States TSCA - Sect. 8(b)**: Present
- **Australia (AICS)**: Present
- **EU EINECS/ELINCS List**: 238-877-9

**Xylitol**

- **CERCLA/SARA 313 Emission reporting**: Not Listed
- **California Proposition 65**: Not Listed
- **Inventory - United States TSCA - Sect. 8(b)**: Present
# 15. REGULATORY INFORMATION

<table>
<thead>
<tr>
<th>Australia (AICS):</th>
<th>Present</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU EINECS/ELINCS List</td>
<td>201-788-0</td>
</tr>
</tbody>
</table>

# 16. OTHER INFORMATION

**Text of CLP/GHS Classification abbreviations mentioned in Section 3**

- Acute toxicity, oral-Cat.4; H302 - Harmful if swallowed
- Serious eye damage/eye irritation-Cat.2A; H319 - Causes serious eye irritation
- Reproductive toxicity-Cat.2; H361d - Suspected of damaging the unborn child
- Hazardous to the aquatic environment, acute toxicity-Cat.3; H402 - Harmful to aquatic life

**Data Sources:** Pfizer proprietary drug development information. Safety data sheets for individual ingredients.

**Reasons for Revision:** Updated Section 3 - Composition / Information on Ingredients. Updated Section 2 - Hazard Identification. Updated Section 16 - Other Information.

**Revision date:** 02-Jun-2016

**Prepared by:** Pfizer Global Environment, Health, and Safety Operations

Pfizer Inc believes that the information contained in this Material Safety Data Sheet is accurate, and while it is provided in good faith, it is without warranty of any kind, expressed or implied. If data for a hazard are not included in this document there is no known information at this time.

**End of Safety Data Sheet**