MATERIAL SAFETY DATA SHEET

Product Name: Fluorouracil Injection, USP

1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Manufacturer Name And Address
Hospira, Inc. Hospira Australia Pty Ltd
275 North Field Drive 1 Lexia Place
Lake Forest, Illinois 60045 Mulgrave VIC 3170
USA AUSTRALIA

Emergency Telephone
224-212-2055

Product Name
Fluorouracil Injection, USP

Synonyms
5-fluoro-2,4 (1H, 3H)-pyrimidinedione; 2,4 (1H, 3H)-pyrimidinedione, 5-fluoro-5-fluorouracil.

2. HAZARD INFORMATION

Emergency Overview
Fluorouracil Injection, USP, contains 5-fluorouracil, an analog of the pyrimidine uracil. It is an antineoplastic used in the treatment of some types of cancer. It may also be used topically for treating malignant or pre-malignant lesions of the skin. It is cytotoxic, neurotoxic, and in the workplace, should also be considered a potential occupational reproductive hazard, harmful to the fetus, potentially irritating to the skin, eyes and respiratory tract, and a photosensitizer. Based on clinical use, possible target organs may include the bone marrow, gastrointestinal system, nervous system, cardiovascular system, skin and the fetus.

Occupational Exposure Potential
Information on the absorption of this product via inhalation or skin contact is not available. Avoid liquid aerosol generation and skin contact. There is increasing evidence that personnel (e.g. nurses, pharmacists, etc.) who prepare and administer parenteral antineoplastics (e.g. in hospitals) may be at some risk due to potential mutagenicity, teratogenicity, and/or carcinogenicity of these agents if workplace exposures are not properly controlled. The actual risk in the workplace is not known.

Signs and Symptoms
None known from occupational exposure. In clinical use, adverse effects may include bone marrow and gastrointestinal toxicity. Adverse effects on bone marrow include leucopenia, thrombocytopenia, and anemia. Adverse gastrointestinal effects may include nausea, vomiting, stomatitis, gastrointestinal ulceration and bleeding, diarrhea, or hemorrhage. Rashes and alopecia are also common. Ocular irritation, central neurotoxicity (cerebellar ataxia), and myocardial ischemia have also occurred. Topical application of solutions or creams with 1-5% fluorouracil caused skin irritation and allergic skin reactions. These solutions or creams can also cause eye irritation. Dermatitis and, rarely, erythema multiforme have been reported.

Medical Conditions Aggravated by Exposure
Pre-existing hypersensitivity to 5-fluorouracil or other components in this formulation; pre-existing bone marrow, gastrointestinal, nervous system cardiovascular or skin disorders; pregnancy.

Carcinogen Lists:
IARC: Group 3 – not classifiable
NTP: Not listed
OSHA: Not listed

3. COMPOSITION/INFORMATION ON INGREDIENTS

Active Ingredient Name
5-Fluorouracil

Chemical Formula
C₄H₃FN₂O₂

<table>
<thead>
<tr>
<th>Component</th>
<th>Approximate Percent by Weight</th>
<th>CAS Number</th>
<th>RTECS Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-Fluorouracil</td>
<td>5</td>
<td>51-21-8</td>
<td>YR0350000</td>
</tr>
</tbody>
</table>

Non-hazardous ingredients include water for injection. Sodium hydroxide may be added to adjust the pH.
4. FIRST AID MEASURES

Eye Contact  Remove from source of exposure. Flush with copious amounts of water. If irritation persists or signs of toxicity occur, seek medical attention. Provide symptomatic/supportive care as necessary.

Skin Contact  Remove from source of exposure. Flush with copious amounts of water. If irritation persists or signs of toxicity occur, seek medical attention. Provide symptomatic/supportive care as necessary.

Inhalation  Remove from source of exposure. If signs of toxicity occur, seek medical attention. Provide symptomatic/supportive care as necessary.

Ingestion  Remove from source of exposure. If signs of toxicity occur, seek medical attention. Provide symptomatic/supportive care as necessary.

5. FIRE FIGHTING MEASURES

Flammability  None anticipated for this aqueous product.

Fire & Explosion Hazard  None anticipated for this aqueous product.

Extinguishing Media  As with any fire, use extinguishing media appropriate for primary cause of fire.

Special Fire Fighting Procedures  No special provisions required beyond normal fire fighting equipment such as flame and chemical resistant clothing and self contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

Spill Cleanup and Disposal  Isolate area around spill. Put on suitable protective clothing and equipment as specified by site spill procedures. Absorb the liquid with suitable material and clean affected area with soap and water. Dispose of spill materials according to the applicable federal, state, or local regulations.

7. HANDLING AND STORAGE

Handling  5-fluorouracil is a cytotoxic agent. Appropriate procedures should be implemented during the handling and disposal of cytotoxic anti-neoplastic agents to minimize potential exposures. Several guidelines on handling cytotoxic anti-neoplastic agents have been published. There is no general agreement that all of the procedures recommended in the guidelines are necessary or appropriate. Consult your hygienist or safety professional for your site requirements.

Avoid ingestion, inhalation, skin contact, and eye contact. Precautions may include the use of a containment cabinet during the weighing, reconstitution and/or solubilization of this anti-neoplastic agent. The use of disposable gloves and respiratory protection is recommended. Proper disposal of contaminated vials, syringes, or other materials is required when working with this material.

Storage  No special storage is required for hazard control. However, employees should be trained on the proper storage procedures for anti-neoplastic agents. For product protection, follow USP controlled room temperature storage recommendations noted on the product case label, the primary container label, or the product insert. Do not freeze and protect from light (keep in original outer carton).

Special Precautions  Persons with known hypersensitivities to this material, women who are pregnant, or women who want to become pregnant, should consult a health and/or safety professional prior to handling this material.
8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

<table>
<thead>
<tr>
<th>Component</th>
<th>OSHA-PEL</th>
<th>ACGIH-TLV</th>
<th>AIHA WEEL</th>
<th>Hospira EEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-Fluorouracil</td>
<td>8-hr TWA: Not established</td>
<td>8-hr TWA: Not established</td>
<td>8-hr TWA: Not Established</td>
<td>8-hr TWA: Not Established</td>
</tr>
</tbody>
</table>


Respiratory Protection
Respiratory protection is normally not needed during intended product use. However, if the generation of aerosols is likely, and engineering controls are not considered adequate to control potential airborne exposures, the use of an approved air-purifying respirator with a HEPA cartridge (P100 or equivalent) is recommended under conditions where airborne aerosol concentrations are not expected to be excessive. Since protection provided by air purifying respirators is limited, a powered air purifying respirator or supplied air should be considered during an uncontrolled release event, if exposure levels are not known, or during events where air-purifying respirators may not provide adequate protection. A respiratory protection program that meets OSHA’s 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions require respirator use. Personnel who wear respirators should be fit tested and approved for respirator use as required.

Skin Protection
When handling this product, disposable gloves should be worn at all times. Further, the use of double gloves is recommended. Disposable gloves made from nitrile, neoprene, polyurethane or natural latex generally have low permeability to chemotherapeutic agents. Persons known to be allergic to latex rubber should select a non-latex glove. Gloves should be changed regularly, and removed immediately after known contamination. Care should be taken to minimize inadvertent contamination when removing and/or disposing of gloves.

Eye Protection
Eye protection is normally not required during intended product use. However, if eye contact is likely to occur, the use of chemical safety goggles (as a minimum) is recommended.

Engineering Controls
Local exhaust ventilation may be used to minimize employee exposure. The use of an enclosure, such as an approved ventilated cabinet designed to minimize airborne exposures, is also recommended.

9. PHYSICAL/CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance/Physical State</td>
<td>A sterile, non-pyrogenic injectable solution in a vial.</td>
</tr>
<tr>
<td>Odor</td>
<td>NA</td>
</tr>
<tr>
<td>Odor Threshold:</td>
<td>NA</td>
</tr>
<tr>
<td>pH</td>
<td>8.6 to 9.4</td>
</tr>
<tr>
<td>Melting point/Freezing point</td>
<td>NA</td>
</tr>
<tr>
<td>Initial Boiling Point/Boiling</td>
<td>NA</td>
</tr>
<tr>
<td>Point Range</td>
<td>NA</td>
</tr>
<tr>
<td>Evaporation Rate:</td>
<td>NA</td>
</tr>
<tr>
<td>Flammability (solid, gas):</td>
<td>NA</td>
</tr>
<tr>
<td>Upper/Lower Flammability or</td>
<td>NA</td>
</tr>
<tr>
<td>Explosive Limits:</td>
<td>NA</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>NA</td>
</tr>
<tr>
<td>Vapor Density (Air =1)</td>
<td>NA</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>NA</td>
</tr>
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</table>
Product Name: Fluorouracil Injection, USP

9. PHYSICAL/CHEMICAL PROPERTIES: continued

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specific Gravity</td>
<td>NA</td>
</tr>
<tr>
<td>Solubility</td>
<td>NA</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water:</td>
<td>NA</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>NA</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>NA</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

<table>
<thead>
<tr>
<th>Reactivity</th>
<th>Not determined.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical Stability</td>
<td>Stable under recommended storage conditions and use. Active ingredient reported to be light sensitive.</td>
</tr>
<tr>
<td>Hazardous Reactions</td>
<td>Not determined</td>
</tr>
<tr>
<td>Conditions to avoid</td>
<td>Not determined</td>
</tr>
<tr>
<td>Incompatibilities</td>
<td>Not determined</td>
</tr>
<tr>
<td>Hazardous Decomposition Products</td>
<td>Not determined. During thermal decomposition, it may be possible to generate irritating vapors and/or toxic fumes of carbon oxides (COx), nitrogen oxides (NOx), and hydrogen fluoride.</td>
</tr>
<tr>
<td>Hazardous Polymerization</td>
<td>Not anticipated to occur with this product.</td>
</tr>
</tbody>
</table>

11. TOXICOLOGICAL INFORMATION

Acute Toxicity
Not determined for the product formulation. Information for the ingredients is as follows:

<table>
<thead>
<tr>
<th>Ingredient(s)</th>
<th>Percent</th>
<th>Test Type</th>
<th>Route of Administration</th>
<th>Value</th>
<th>Units</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-Fluorouracil</td>
<td>100</td>
<td>LD50</td>
<td>Oral</td>
<td>230</td>
<td>mg/kg</td>
<td>Rat</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Oral</td>
<td>115</td>
<td>mg/kg</td>
<td>Mouse</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Oral</td>
<td>18.9</td>
<td>mg/kg</td>
<td>Rabbit</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Oral</td>
<td>30</td>
<td>mg/kg</td>
<td>Dog</td>
</tr>
<tr>
<td>5-Fluorouracil</td>
<td>100</td>
<td>LD50</td>
<td>Intravenous</td>
<td>245</td>
<td>mg/kg</td>
<td>Rat</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>81</td>
<td>mg/kg</td>
<td>Mouse</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>25</td>
<td>mg/kg</td>
<td>Guinea Pig</td>
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<tr>
<td>5-Fluorouracil</td>
<td>100</td>
<td>LD50</td>
<td>Intraperitoneal</td>
<td>70</td>
<td>mg/kg</td>
<td>Rat</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>100</td>
<td>mg/kg</td>
<td>Mouse</td>
</tr>
</tbody>
</table>

LD 50: Dosage that produces 50% mortality.

Aspiration Hazard
None anticipated from normal handling of this product.

Dermal Irritation/Corrosion
None anticipated from normal handling of this product. However, inadvertent skin contact with this product may produce irritation with redness and discomfort.

Ocular Irritation/Corrosion
None anticipated from normal handling of this product. However, inadvertent eye contact of this product with eyes may produce irritation with stinging with redness, watering, and discomfort.

Dermal or Respiratory Sensitization
None anticipated from normal handling of this product. In clinical topical use, dermatitis is most often seen as a pruritic maculopapular rash usually appearing on the extremities and less frequently on the trunk. Rarely, anaphylaxis and generalized allergic reactions have been reported during clinical use. In addition, this material is a photosensitizer. Exposure to sunlight can cause an exaggerated sunburn-like reaction.
Product Name: Fluorouracil Injection, USP

11. TOXICOLOGICAL INFORMATION: continued

Reproductive Effects

Fluorouracil has been shown to impair fertility after parenteral administration in rats. Intraperitoneal dosages of 125 to 250 mg/kg induced chromosomal aberrations and changes in chromosome organization of spermatogonia in rats. Spermatogonial differentiation was also inhibited by fluorouracil, resulting in transient infertility. However, in studies with a strain of mouse which is sensitive to the induction of sperm head abnormalities, 5-fluorouracil was inactive at oral dosages of 5 to 80 mg/kg/day. In female rats, intraperitoneal fluorouracil at dosages of 25 and 50 mg/kg during the preovulatory phase of oogenesis significantly reduced the incidence of fertile matings, delayed the development of preimplantation and post-implantation embryos, increased the incidence of preimplantation lethality and induced chromosomal anomalies in these embryos.

Single dose intravenous and intraperitoneal injections of 5-fluorouracil have been reported to kill differentiated spermatogonia and spermatocytes (at 500 mg/kg) and to produce abnormalities in spermatids (at 50 mg/kg) in mice.

Fluorouracil, given parenterally, has been shown to be teratogenic in mice, rats, and hamsters when given at doses equivalent to the usual human intravenous dose. Fluorouracil exhibited maximum teratogenicity when given to mice as single intraperitoneal injections of 10 to 40 mg/kg on Day 10 or 12 of gestation. Similarly, intraperitoneal dosages of 12 to 37 mg/kg given to rats between Days 9 and 12 of gestation and intramuscular doses of 3 to 9 mg/kg given to hamsters between Days 8 and 11 of gestation were teratogenic and/or embryotoxic (e.g. resulted in increased resorptions or embryolethality). In monkeys, divided dosages of 40 mg/kg given between Days 20 and 24 of gestation were not teratogenic. Dosages higher than 40 mg/kg resulted in abortion. The amount of fluorouracil absorbed systemically after topical administration to actinic keratoses is minimal.

Mutagenicity

Oncogenic transformation of fibroblasts from mouse embryo has been induced in vitro by fluorouracil, but the relationship between oncogenicity and mutagenicity is not clear. Fluorouracil has been shown to be mutagenic to several strains of Salmonella typhimurium, including TA 1535, TA 1537 and TA 1538, and to Saccharomyces cerevisiae, although no evidence of mutagenicity was found with Salmonella typhimurium strains TA 92, TA 98 and TA 100. In addition, a positive effect was observed in the micronucleus test on bone marrow cells of the mouse, and fluorouracil at very high concentrations produced chromosomal breaks in hamster fibroblasts in vitro.

Fluorouracil was clastogenic in vitro in Chinese hamster fibroblasts at concentrations of 1.0 and 2.0 ug/mL and has been shown to increase sister chromatid exchange in vitro in human lymphocytes. In addition, 5-fluorouracil has been reported to produce an increase in numerical and structural chromosome aberrations in peripheral lymphocytes of patients treated with this product.

Carcinogenicity

Long-term studies in animals to evaluate the carcinogenic potential of fluorouracil have not been conducted. However, there was no evidence of carcinogenicity in small groups of rats given fluorouracil orally at doses of 0.01, 0.3, 1 or 3 mg per rat 5 days per week for 52 weeks, followed by a six-month observation period. Also, in other studies, 33 mg/kg of fluorouracil was administered intravenously to male rats once a week for 52 weeks followed by observation for the remainder of their lifetimes with no evidence of carcinogenicity. Female mice were given 1 mg of fluorouracil intravenously once a week for 16 weeks with no effect on the incidence of lung adenomas.

Target Organ Effects

Based on clinical use, possible target organs may include the bone marrow, gastrointestinal system, nervous system, cardiovascular system, skin and the fetus.
Product Name: Fluorouracil Injection, USP

12. ECOLOGICAL INFORMATION

Aquatic Toxicity

Not determined for product.

EC50(16hr) = 0.027 mg/L in Pseudomonas putida for 5-fluorouracil.
EC50(24hr) = 0.12 mg/L in Vibrio fisheri for 5-fluorouracil.
EC50(96hr) = 0.11 mg/L in Pseudokirchneriella subcapitata for 5-fluorouracil.
EC50(48hr) = 36 mg/L in Daphnia magna for 5-fluorouracil.
LOEC(120 hr growth) = 400 mg/L in Pimephales promelas for 5-fluorouracil.

Persistence/Biodegradability

Not determined for product.

Bioaccumulation

Not determined for product.

Mobility in Soil

Not determined for product.

Notes:
1. LC50: Concentration in water that produces 50% mortality in fish.
2. EC50: Concentration in water that produces 50% inhibition of growth in algae.

13. DISPOSAL CONSIDERATIONS

Waste Disposal

All waste materials must be properly characterized. Further, disposal should be performed in accordance with the federal, state or local regulatory requirements.

Container Handling and Disposal

Dispose of container and unused contents in accordance with federal, state and local regulations.

14. TRANSPORTATION INFORMATION

DOT STATUS: Not regulated
Proper Shipping Name: NA
Hazard Class: NA
UN Number: NA
Packing Group: NA
Reportable Quantity: NA

ICAO/IATA STATUS: Not regulated
Proper Shipping Name: NA
Hazard Class: NA
UN Number: NA
Packing Group: NA
Reportable Quantity: NA

IMDG STATUS: Not regulated
Proper Shipping Name: NA
Hazard Class: NA
UN Number: NA
Packing Group: NA
Reportable Quantity: NA

Notes: DOT - US Department of Transportation Regulations
## Product Name: Fluorouracil Injection, USP

### 15. REGULATORY INFORMATION

<table>
<thead>
<tr>
<th>U.S. TSCA Status</th>
<th>This product is exempt. However, 5-fluorouracil is listed on the TSCA inventory.</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. CERCLA Status</td>
<td>Not listed</td>
</tr>
<tr>
<td>U.S. SARA 302 Status</td>
<td>Listed - 500 lb TPQ (lower threshold); 10000 lb TPQ (upper threshold)</td>
</tr>
<tr>
<td>U.S. SARA 313 Status</td>
<td>Listed - Subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR</td>
</tr>
<tr>
<td>U.S. RCRA Status</td>
<td>Not listed</td>
</tr>
<tr>
<td>U.S. PROP 65 (Calif.)</td>
<td>This product is, or contains chemical(s) known to the State of California to cause developmental toxicity.</td>
</tr>
</tbody>
</table>


### U.S. OSHA Classification

- Possible Irritant
- Reproductive Toxin
- Target Organ Toxin

### GHS Classification

*Where medicinal products are not exempt, the recommended GHS workplace classification is as follows:

<table>
<thead>
<tr>
<th>Hazard Class</th>
<th>Acute Oral Toxicity</th>
<th>Eye Irritation</th>
<th>Toxic to Reproduction</th>
<th>Target Organ Toxicity</th>
<th>Hazardous to the Aquatic Environment - Acute Hazard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazard Category</td>
<td>4</td>
<td>2B</td>
<td>2</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Symbol</td>
<td>NA</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Signal Word</td>
<td>Warning</td>
<td>Warning</td>
<td>Danger</td>
<td>Warning</td>
<td>Warning</td>
</tr>
</tbody>
</table>

### Hazard Statement

- Harmful if swallowed
- Causes eye irritation
- Suspected of damaging fertility or the unborn child
- May cause damage to the bone marrow, gastrointestinal system, nervous system, cardiovascular system, and skin through prolonged or repeated exposure.
- Very toxic to aquatic life

### Prevention:

- Obtain special instructions before use.
- Do not handle until all safety precautions have been read and understood.
- Use personal protective equipment as required.
- Avoid breathing aerosols or vapors.
- In case of inadequate ventilation wear respiratory protection.
- Wear protective gloves.
- Contaminated work clothing should not be allowed out of the workplace.
- Do not eat, drink or smoke when using this product.
- Wash hands thoroughly after handling.
- Avoid release into the environment

### Response:

- **IF SWALLOWED:** Immediately call a POISON CENTER or doctor. Rinse mouth.
- **IF INHALED:** If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. If experiencing respiratory symptoms call a POISON CENTER or a doctor.
- **IF ON SKIN:** Wash with plenty of soap and water. If skin irritation or rash occurs, seek medical attention. Take off contaminated clothing and wash before reuse.
- **IF IN EYES:** Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. If eye irritation persists, get medical attention. Collect spillage.
**15. REGULATORY INFORMATION:** continued

**EU Classification***
*Medicinal products are exempt from the requirements of the EU Dangerous Preparations Directive. Information provided below is for the pure drug substance 5-fluorouracil.

<table>
<thead>
<tr>
<th>Classification(s):</th>
<th>Harmful</th>
<th>Irritant</th>
<th>Toxic to Reproduction</th>
<th>Dangerous for the Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Symbol:</strong></td>
<td>![Xn]</td>
<td>![Xi]</td>
<td>![T]</td>
<td>![N]</td>
</tr>
<tr>
<td><strong>Indication of Danger:</strong></td>
<td>Xn</td>
<td>Xi</td>
<td>T</td>
<td>N</td>
</tr>
</tbody>
</table>

**Risk Phrases:**
- R22 - Harmful if swallowed
- R36/37/38 - Irritating to eyes, respiratory system, and skin
- R40 - Limited evidence of a carcinogenic effect
- R41 - Risk of serious damage to eyes
- R50/53 - Very toxic to aquatic organism; may cause long-term adverse effects in the aquatic environment.
- R60 - May impair fertility
- R61 - May cause harm to the unborn child
- R64 - May cause harm to breastfed babies

**Safety Phrases:**
- S23 - Do not breathe vapor/spray
- S24 - Avoid contact with the skin
- S25 - Avoid contact with eyes
- S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection.
- S61 - Avoid releases to the environment.

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**16. OTHER INFORMATION**

**Notes:**
- ACGIH TLV - American Conference of Governmental Industrial Hygienists – Threshold Limit Value
- CAS - Chemical Abstracts Service Number
- CERCLA - US EPA law, Comprehensive Environmental Response, Compensation, and Liability Act
- DOT - US Department of Transportation Regulations
- EEL - Employee Exposure Limit
- IATA - International Air Transport Association
- LD₅₀ - Dosage producing 50% mortality
- NA - Not applicable/Not available
- NE - Not established
- NIOSH - National Institute for Occupational Safety and Health
- OSHA PEL - US Occupational Safety and Health Administration – Permissible Exposure Limit
- Prop 65 - California Proposition 65
- RCRA - US EPA, Resource Conservation and Recovery Act
- RTECS - Registry of Toxic Effects of Chemical Substances
- SARA - Superfund Amendments and Reauthorization Act
- STEL - 15-minute Short Term Exposure Limit
- TSCA - Toxic Substance Control Act
- TWA - 8-hour Time Weighted Average

**MSDS Coordinator:** Global Occupational Toxicology
**Date Prepared:** December 4, 2008
**Date Revised:** June 30, 2009

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