### 1. CORRECTIVE RESPONSE ACTIONS

<table>
<thead>
<tr>
<th>Action</th>
<th>Identification</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stop discharge</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contain</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Collection Systems: Skim; Dredge</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fire</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Call for medical aid</td>
<td>DUET</td>
<td></td>
</tr>
<tr>
<td>Irritating to eyes, nose and throat</td>
<td></td>
<td></td>
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<tr>
<td>Move victim to fresh air</td>
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<td></td>
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<tr>
<td>Inhaling with water, dry chemicals, foam, or carbon dioxide</td>
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<td></td>
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<tr>
<td>SOLID</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Irritating to skin and eyes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Harmful if swallowed</td>
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<td></td>
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<tr>
<td>Remove contaminated clothing and shoes</td>
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<td></td>
</tr>
<tr>
<td>Flush affected areas with plenty of water</td>
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<tr>
<td>IF IN EYES, hold eyelids open and flush with plenty of water.</td>
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<tr>
<td>IF SWALLOWED and victim is CONSCIOUS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Effect of low concentrations on aquatic life is unknown</td>
<td></td>
<td></td>
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<tr>
<td>Notify local health and wildlife officials.</td>
<td></td>
<td></td>
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<tr>
<td>Notify operators of nearby water intakes</td>
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<td></td>
</tr>
<tr>
<td>Water</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Effect of low concentrations on aquatic life is unknown</td>
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</tbody>
</table>

### 3. HEALTH HAZARDS

- **3.1 Personal Protective Equipment:** Goggles or face shield; dust mask.
- **3.2 Symptoms Following Exposure:** Inhalation of dust causes irritation of nose and throat. Contact with eyes or skin causes irritation. Ingestion has been observed to cause tremors and muscle spasms in test animals.
- **3.3 Treatment of Exposure:** INHALATION: move to fresh air. EYES: flush with water for at least 15 min. SKIN: flush with water, wash with soap and water. INGESTION: get medical attention.
- **3.4 TLV/TLWA:** Not listed.
- **3.5 TLV-STEL:** Not listed.
- **3.6 TLV-Ceiling:** Not listed.
- **3.7 Toxicity by Ingestion:** Grade 2; oral LD₅₀ = 3,800 mg/kg (rat)
- **3.8 Toxicity by Inhalation:** Currently not available.
- **3.9 Chronic Toxicity:** Causes cancer in rats
- **3.10 Vapor (Gas) Irritant Characteristics:** Currently not available
- **3.11 Liquid or Solid Characteristics:** Currently not available
- **3.12 Odor Threshold:** Odorless
- **3.13 IDL₅₀ Value:** Not listed.
- **3.14 OSHA PEL-TWA:** Not listed.
- **3.15 OSHA PEL-STEL:** Not listed.
- **3.16 OSHA PEL-Ceiling:** Not listed.
- **3.17 EPA AEG/L:** Not listed

### 4. FIRE HAZARDS

- **4.1 Flash Point:** Not pertinent (combustible solid).
- **4.2 Flammable Limits in Air:** Not pertinent
- **4.3 Fire Extinguishing Agents:** Water, dry chemical, foam, carbon dioxide
- **4.4 Fire Extinguishing Agents Not to Be Used:** Not pertinent
- **4.5 Special Hazards of Combustion:** Products: Toxic nitrogen oxides are produced.
- **4.6 Behavior In Fire:** Not pertinent
- **4.7 Auto Ignition Temperature:** Not pertinent
- **4.8 Electrical Hazards:** Not pertinent
- **4.9 Burning Rate:** Not pertinent
- **4.10 Adiabatic Flame Temperature:** Currently not available
- **4.11 Stoichiometric Air to Fuel Ratio:** 28.6 (calc.)
- **4.12 Flame Temperature:** Currently not available
- **4.13 Combustion Molar Ratio (Reactant to Product):** 7.0 (calc.)
- **4.14 Minimum Oxygen Concentration for Combustion (MOC):** Not listed

### 5. CHEMICAL REACTIVITY

- **5.1 Reactivity with Water:** No reaction
- **5.2 Reactivity with Common Materials:** No reaction
- **5.3 Stability During Transport:** Stable
- **5.4 Neutralizing Agents for Acids and Caustics:** Not pertinent
- **5.5 Polymerization:** Not pertinent
- **5.6 Inhibitor of Polymerization:** Not pertinent

### 6. WATER POLLUTION

- **6.1 Aquatic Toxicity:** Currently not available
- **6.2 Waterfowl Toxicity:** Currently not available
- **6.3 Biological Oxygen Demand (BOD):** Currently not available
- **6.4 Food Chain Concentration Potential:** None
- **6.5 GESAMP Hazard Profile:** Not listed

### 7. SHIPPING INFORMATION

- **7.1 Grades of Purity:** Technical: 97+% %
- **7.2 Storage Temperature:** Ambient
- **7.3 Inert Atmosphere:** No requirement
- **7.4 Venting:** Open
- **7.5 IMO Pollution Category:** Currently not available
- **7.6 Ship Type:** Currently not available
- **7.7 Barge Hull Type:** Currently not available

### 8. HAZARD CLASSIFICATIONS

- **8.1 49 CFR Category:** Not listed
- **8.2 49 CFR Class:** Not pertinent
- **8.3 49 CFR Package Group:** Not listed
- **8.4 Marine Pollutant:** No
- **8.5 NFPA Hazard Classification:** Not listed
- **8.6 EPA Reportable Quantity:** 5000 pounds
- **8.7 EPA Pollution Category:** D
- **8.8 RCRA Waste Number:** U148
- **8.9 EPA FWPCA List:** Not listed

### 9. PHYSICAL & CHEMICAL PROPERTIES

- **9.1 Physical State at 15°C and 1 atm:** Solid
- **9.2 Molecular Weight:** 110.1
- **9.3 Boiling Point at 1 atm:** Not pertinent (decomposes)
- **9.4 Freezing Point:** 558°F = 292°C = 565°F
- **9.5 Critical Temperature:** Not pertinent
- **9.6 Critical Pressure:** Not pertinent
- **9.7 Specific Gravity:** 1.60 at 25°C (solid)
- **9.8 Liquid Surface Tension:** Not pertinent
- **9.9 Liquid Water Interfacial Tension:** Not pertinent
- **9.10 Vapor (Gas) Specific Gravity:** Not pertinent
- **9.11 Ratio of Specific Heats of Vapor (Gas):** Not pertinent
- **9.12 Latent Heat of Vaporization:** Not pertinent
- **9.13 Heat of Combustion:** (est.) -8,200 Btu/lb = -4,500 cal/g = -199 X 10^6 J/kg
- **9.14 Heat of Decomposition:** Not pertinent
- **9.15 Heat of Solution:** Not pertinent
- **9.16 Heat of Polymerization:** Not pertinent
- **9.17 Heat of Fusion:** Currently not available
- **9.18 Limiting Value:** Currently not available
- **9.19 Reid Vapor Pressure:** Currently not available

### NOTES

- **JUNE 1999**
<table>
<thead>
<tr>
<th>Temperature (degrees F)</th>
<th>Pounds per cubic foot</th>
<th>Temperature (degrees F)</th>
<th>British thermal unit per pound-F</th>
<th>Temperature (degrees F)</th>
<th>British thermal unit inch per hour-square foot-F</th>
<th>Temperature (degrees F)</th>
<th>Centipoise</th>
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<table>
<thead>
<tr>
<th>Temperature (degrees F)</th>
<th>Pounds per 100 pounds of water</th>
<th>Temperature (degrees F)</th>
<th>Pounds per square inch</th>
<th>Temperature (degrees F)</th>
<th>Pounds per cubic foot</th>
<th>Temperature (degrees F)</th>
<th>British thermal unit per pound-F</th>
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<tr>
<td>77</td>
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