1. CORRECTIVE RESPONSE ACTIONS

1.1 Personal Protective Equipment: Approved respirator, safety goggles, rubber gloves, full protective clothing.

1.2 Symptoms Following Exposure: Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting.

1.3 Treatment of Exposure: HAHALATION. Remove to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen. EYES: Hold eyelids open and flush with running water for at least 15 minutes. SKIN: Remove contaminated clothing and shoes, flush affected areas with plenty of water.

1.4 TLV-TWA: 2 ppm

1.5 TLV-STEL: Not listed.

1.6 TLV-Ca/ing: Not listed.

1.7 Toxicity by Ingestion: Grade 2: LD₅₀ = 1.6 g/kg (rat)

1.8 Toxicity by Inhalation: Currently not available.

1.9 Chronic Toxicity: Hydrolyzes to dimethyl hydrogen phosphite, a known animal carcinogen.

1.10 Vapor (Gas) Irritant Characteristics: Vapors cause severe irritation of the eyes and throat, and can cause eye and lung injury. They cannot be tolerated even at low concentrations.

1.11 Liquid or Solid Characteristics: Severe skin irritant. Causes second and third degree burns on short contact and is very injurious to the eyes.

1.12 Odor Threshold: Currently not available

1.13 IDLH Value: Not listed.

1.14 OSHA PEL-TWA: Not listed.

1.15 OSHA PEL-STEL: Not listed.

1.16 OSHA PEL-Ceiling: Not listed.

1.17 EPA AELG: Not listed.

1.8 CAUTIONARY RESPONSE INFORMATION

1.8.1 Notify operators of local water intakes.

1.8.2 Notify local health and wildlife officials.

1.8.3 May be harmful if it enters water intakes.

1.8.4 IF SWALLOWED and victim is UNCONSCIOUS OR HAVING CONVULSIONS: do not give water.

1.8.5 IF SWALLOWED and victim is CONSCIOUS: have victim drink water or milk.

1.8.6 IF IN EYES: immediately flush eyes with running water for at least 15 minutes.

1.8.7 IF INHALED: get victim to fresh air, if possible. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. If not breathing, give artificial respiration.

1.8.8 IF IN SKIN CONTACT: wash skin with soap and water.

1.8.9 IF INHALED: evacuate area, let fire burn. If breathing is difficult, give oxygen. If not breathing, give artificial respiration.

1.8.10 May be ignited by heat, sparks or flames.

1.8.11 Fire may produce irritating or poisonous gases.

1.8.12 Vapors may cause dizziness or suffocation.

1.8.13 May be poisonous if inhaled.

1.8.14 VAPOR: CALL FOR MEDICAL AID.

1.8.15 MAY BE POISONOUS IF INHALED.

1.8.16 Vapors may cause dizziness or suffocation.

1.8.17 Fire may produce irritating or poisonous gases.

1.8.18 Vapors may cause dizziness or suffocation.

1.8.19 MAY BE POISONOUS IF INHALED.

1.8.20 VAPOR: CALL FOR MEDICAL AID.

1.8.21 MAY BE POISONOUS IF INHALED.

1.8.22 Vapors may cause dizziness or suffocation.

1.8.23 Fire may produce irritating or poisonous gases.

1.8.24 Vapors may cause dizziness or suffocation.

1.8.25 MAY BE POISONOUS IF INHALED.

1.8.26 VAPOR: CALL FOR MEDICAL AID.

1.8.27 MAY BE POISONOUS IF INHALED.

1.8.28 Vapors may cause dizziness or suffocation.

1.8.29 Fire may produce irritating or poisonous gases.

1.8.30 Vapors may cause dizziness or suffocation.

1.8.31 MAY BE POISONOUS IF INHALED.

1.8.32 VAPOR: CALL FOR MEDICAL AID.

2. CHEMICAL DESIGNATIONS

2.1 CG Compatibility Group: 34; Esters

2.2 Formulas: (CH₃)₃PO

2.3 IMO/UN Designation: 353/2329

2.4 DOT ID No.: 2329

2.5 CAS Registry No.: 121-45-9

2.6 NAERG Guide No.: 129

2.7 Standard Industrial Trade Classification: 51631

3. HEALTH HAZARDS

3.1 Personal Protective Equipment: Approved respirator, safety goggles, rubber gloves, full protective clothing.

3.2 Symptoms Following Exposure: Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting.

3.3 Treatment of Exposure: HAHALATION. Remove to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen. EYES: Hold eyelids open and flush with running water for at least 15 minutes. SKIN: Remove contaminated clothing and shoes, flush affected areas with plenty of water.

3.4 TLV-TWA: 2 ppm

3.5 TLV-STEL: Not listed.

3.6 TLV-Ca/ing: Not listed.

3.7 Toxicity by Ingestion: Grade 2: LD₅₀ = 1.6 g/kg (rat)

3.8 Toxicity by Inhalation: Currently not available.

3.9 Chronic Toxicity: Hydrolyzes to dimethyl hydrogen phosphite, a known animal carcinogen.

3.10 Vapor (Gas) Irritant Characteristics: Vapors cause severe irritation of the eyes and throat, and can cause eye and lung injury. They cannot be tolerated even at low concentrations.

3.11 Liquid or Solid Characteristics: Severe skin irritant. Causes second and third degree burns on short contact and is very injurious to the eyes.

3.12 Odor Threshold: Currently not available

3.13 IDLH 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 AELG: Not listed.

4. FIRE HAZARDS

4.1 Flash Point: 130°F O.C. 82°F C.C.

4.2 Flammable Limits in Air: Currently not available

4.3 Fire Extinguishing Agents: Water, foam, fog CO₂

4.4 Fire Extinguishing Agents Not to Be Used: Not pertinent

4.5 Special Hazards of Combustion: Products: Toxic fumes of PO₃. Behavior in Fire: Currently not available

4.6 Auto Ignition Temperature: Currently not available

4.7 Indirect Flame Temperature: Currently not available

4.8 Electrical Hazards: Currently not available

4.9 Burning Rate: Currently not available

4.10 Adiabatic Flame Temperature: Currently not available

4.11 Stoichiometric Air to Fuel Ratio: 34.5 (calc.)

4.12 Flame Temperature: Currently not available

4.13 Combustion Molar Ratio (Reactant to Product): 8.9 (calc.)

4.14 Minimum Oxygen Concentration for Combustion (MOCC): 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 Causatives: 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 Water/Foam Exposure: Currently not available

6.3 Biological Oxygen Demand (BOD): Currently not available

6.4 Food Chain Concentration Potential: Currently not available

6.5 GESAMP Hazard Profile: Bioaccumulation: 0 Damage to living resources: 0 Human Oral hazard: 0 Human Contact hazard: 0 Reduction of amenities: 0

7. SHIPPING INFORMATION

7.1 Grades of Purity: 90-95%

7.2 Storage Temperature: Currently not available

7.3 Inert Atmosphere: Store under nitrogen

7.4 Venting: Currently not available

7.5 IMO Pollution Category: Currently not available

7.6 Ship Type: 3

7.7 Barge Hull Type: Currently not available

8. HAZARD CLASSIFICATIONS

8.1 49 CFR Category: Flammable Liquid

8.2 49 CFR Class: 3

8.3 49 CFR Package Group: III

8.4 Marine Pollutant: No

8.5 NFPA Hazard Classification:

8.6 EPA Reportable Quantity: Not listed.

8.7 EPA Pollution Category: Not listed.

8.8 RORA Waste Number: Not listed.

8.9 EPA FWPCA List: Not listed

9. PHYSICAL & CHEMICAL PROPERTIES

9.1 Physical State at 15° C and 1 atm: Liquid

9.2 Molecular Weight: 124.08

9.3 Boiling Point at 1 atm: 197°F = 91°C = 317 K

9.4 Freezing Point: Not pertinent

9.5 Critical Temperature: Currently not available

9.6 Critical Pressure: Currently not available

9.7 Specific Gravity: Not pertinent

9.8 Liquid Surface Tension: Currently not available

9.9 Liquid Water Interfacial Tension: Currently not available

9.10 Vapor (Gas) Specific Gravity: Not pertinent

9.11 Ratio of Specific Heats of Vapor (Gas): Currently not available

9.12 Latent Heat of Vaporization: Currently not available

9.13 Heat of Combustion: Currently not available

9.14 Heat of Decomposition: Currently not available

9.15 Heat of Solution: Currently not available

9.16 Heat of Polymerization: Not pertinent

9.17 Heat of Fusion: Currently not available

9.18 Limiting Value: Currently not available

9.19 Void Vapor Pressure: Currently not available

JUNE 1999
### 9.20 Saturated Liquid Density

<table>
<thead>
<tr>
<th>Temperature (degrees F)</th>
<th>Pounds per cubic foot</th>
</tr>
</thead>
<tbody>
<tr>
<td>68</td>
<td>65.670</td>
</tr>
</tbody>
</table>

### 9.21 Liquid Heat Capacity

<table>
<thead>
<tr>
<th>Temperature (degrees F)</th>
<th>British thermal unit per pound-F</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 9.22 Liquid Thermal Conductivity

<table>
<thead>
<tr>
<th>Temperature (degrees F)</th>
<th>British thermal unit inch per hour-square foot-F</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 9.23 Liquid Viscosity

<table>
<thead>
<tr>
<th>Temperature (degrees F)</th>
<th>Centipoise</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 9.24 Solubility in Water

<table>
<thead>
<tr>
<th>Temperature (degrees F)</th>
<th>Pounds per 100 pounds of water</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 9.25 Saturated Vapor Pressure

<table>
<thead>
<tr>
<th>Temperature (degrees F)</th>
<th>Pounds per square inch</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 9.26 Saturated Vapor Density

<table>
<thead>
<tr>
<th>Temperature (degrees F)</th>
<th>Pounds per cubic foot</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 9.27 Ideal Gas Heat Capacity

<table>
<thead>
<tr>
<th>Temperature (degrees F)</th>
<th>British thermal unit per pound-F</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

JUNE 1999