**CAUTIONARY RESPONSE INFORMATION**

**Ethyl phosphonothioic dichloride**

### Liquid
- Colorless
- Choking odor
- Reacts with water. Poisonous gas is produced on contact with water.

### Exposure
- CALL FOR MEDICAL AID.
- Gas produced in reaction with water. Poisonous if inhaled.
- Extinguish with dry chemicals or carbon dioxide.
- Do not use water or foam on fire.

### Fire
- Combustible.
- Poisonous gases are produced in fire.
- Extinguish with dry chemicals or carbon dioxide.
-Notify local health and pollution control agencies.

### Water
- Effect of low concentrations on aquatic life is unknown.
- Not pertinent.

### Pollution
- May be dangerous if it enters water intakes.
- Notify local health and wildlife officials.
- Notify operators of nearby water intakes.

### Collection Systems
- Pump to off-site recovery or treatment.
- Neutralize.
- Do not burn.

### 1. CORRECTIVE RESPONSE ACTIONS
- Dilute and disperse
- Stop discharge
- Protect water intakes
- Notify operators of nearby water intakes

### 2. CHEMICAL DESIGNATIONS
- 2.1 CG Compatibility Group: Not listed
- 2.2 Formula: CHClNS
- 2.3 IM0/UN Designation: 81/760
- 2.4 DOT No.: 2927
- 2.5 CAS Registry No.: Currently not available
- 2.6 H1430 Guide No.: 165
- 2.7 Standard Industrial Trade Classification: 51631

### 3. HEALTH HAZARDS
- 3.1 Personal Protective Equipment: Air mask, rubber or neoprene gloves; vapor-tight goggles.
- 3.2 Symptoms Following Exposure: Inhalation of vapor causes pulmonary and eye irritation; effects on lungs may be delayed 24 hours; very similar to phosgene poisoning. Contact with liquid causes painful irritation of eyes and lachrymation; also causes severe irritation and possible damage to skin. Ingestion causes severe irritation of mouth and stomach.
- 3.3 Treatment of Exposure: INHALATION: remove victim from exposure; oxygen can be used for pulmonary symptoms with decontamination; enforce complete rest, because effects may be delayed 24 hours, similar to phosgene poisoning. EYES: flush thoroughly with water and seek medical attention; apply Pontocaine drops (1/2%) and cortisone ointment (1%). SKIN: wash thoroughly with soap and water. INGESTION: give large amounts of water; induce vomiting; get medical attention; enforce rest for 24-36 hours.
- 3.4 TLV-TWA: Not listed
- 3.5 TLV-STEL: Not listed
- 3.6 TLV-Ceiling: Not listed
- 3.7 Toxicity by Ingestion: Grade 2; LDV = 0.5 to 5 g/kg
- 3.8 Toxicity by Inhalation: Currently not available
- 3.9 Chronic Toxicity: Currently not available
- 3.10 Vapor (Gas) Irritant Characteristics: Currently not available
- 3.11 Liquid or Solid Characteristics: Currently not available
- 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 AEGL: Not listed

### 4. FIRE HAZARDS
- 4.1 Flash Point: 203°F O.C.
- 4.2 Flammable Limits in Air: Currently not available
- 4.3 Fire Extinguishing Agents: Dry chemical or carbon dioxide
- 4.4 Fire Extinguishing Agents Not to Be Used: Water or foam
- 4.5 Special Hazards of Combustion: Products: Oxides of sulfur, phosphorus; hydrogen chloride and phosgene.
- 4.6 Behavior in Fire: Contact with water applied to adjacent fires will produce irritating fumes of hydrogen chloride.
- 4.7 Auto Ignition Temperature: Currently not available
- 4.8 Electrical Hazards: Currently not available
- 4.9 Burning Rate: Currently not available
- 4.10 Acidic Flame Temperature: Currently not available
- 4.11 Stoichiometric Air to Fuel Ratio: 19.0 (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 (MOCC): Not listed

### 5. CHEMICAL REACTIVITY
- 5.1 Reactivity with Water: Reacts with water to evolve hydrogen chloride (hydrochloric acid)
- 5.2 Reactivity with Common Materials: Will react with surface moisture to evolve hydrogen chloride, which is corrosive to common metals.
- 5.3 Stability During Transport: Stable
- 5.4 Neutralizing Agents for Acids and Corrosive: Sodium bicarbonate or lime solution.
- 5.5 Polymerization: Not pertinent
- 5.6 Inhibitor of Polymerization: Not pertinent

### 6. WATER POLLUTION
- 6.1 Aquatic Toxicity: Currently not available
- 6.2 Biodegradable 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: Commercial
- 7.2 Storage Temperature: Ambient
- 7.3 Inert Atmosphere: Treated with dry nitrogen.
- 7.4 Venting: Pressure-vacuum
- 7.5 IMO Pollution Category: Currently not available
- 7.6 Ship Type: Currently not available
- 7.7 Bale Hall Type: Currently not available

### 8. HAZARD CLASSIFICATIONS
- 8.1 49 CFR Category: Poison
- 8.2 49 CFR Class: 6.1
- 8.3 49 CFR Package Group: I
- 8.4 Marine Pollutant: No
- 8.5 NFPA Hazard Classification: Not listed
- 8.6 EPA Reportable Quantity: Not listed
- 8.7 EPA Pollution Category: Not listed
- 8.8 RCRA Waste Number: Not listed
- 8.9 EPA SW846 List: Not listed

### 9. PHYSICAL & CHEMICAL PROPERTIES
- 9.1 Physical State at 15°C and 1 atm: Liquid
- 9.2 Molecular Weight: 163
- 9.3 Boiling Point at 1 atm: 342°F = 172°C = 445 K
- 9.4 Freezing Point: <–58°F = <–50°C = <223°K
- 9.5 Critical Temperature: Not pertinent
- 9.6 Critical Pressure: Not pertinent
- 9.7 Specific Gravity: 1.35 at 20°C (liquid)
- 9.8 Liquid Surface Tension: (est.) 28 dynes/cm = 0.028 nm at 20°C
- 9.9 Liquid Water Interface 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 Heats of Combustion: –1,700 Btu/lb = –4,280 cal/g = –179 X 10⁶ J/kg
- 9.14 Heat of Decomposition: Not pertinent
- 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 Values: Currently not available
- 9.19 Reid Vapor Pressure: Currently not available

### 6.5 GESAMP Hazard Profile: Not listed

### NOTES

**JUNE 1999**
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