

# TRIETHYL PHOSPHITE

TPI

## CAUTIONARY RESPONSE INFORMATION

<b>Common Synonyms</b> Phosphorous acid, triethyl ester UN 2323 (DOT)		Liquid	Colorless	Odorless
<p>Keep people away. Avoid contact with liquid and vapor. Wear self-contained breathing apparatus and protective clothing. Shut off ignition sources and call fire department. Notify local health and pollution control agencies.</p>				
<b>Fire</b>	Combustible Water may be ineffective on fire. Extinguish with dry chemical, foam, or CO <sub>2</sub> . Cool exposed container with water.			
<b>Exposure</b>	CALL FOR MEDICAL AID.  VAPOR OR MIST Harmful if inhaled. Move to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen.  LIQUID Harmful if absorbed through the skin or swallowed. Remove contaminated clothing. Flush affected areas with soap and plenty of water. IF IN EYES, hold eyelids open and flush with water for 15 minutes. IF SWALLOWED and victim is CONSCIOUS, have victim drink 1-2 glasses of water or milk and induce vomiting.			
<b>Water Pollution</b>	Effect of low concentration on aquatic life is unknown. May be dangerous if it enters water intakes. Notify health and wildlife officials. Notify operators of nearby water intakes.			

### 1. CORRECTIVE RESPONSE ACTIONS

Stop discharge  
 Contain  
 Collection Systems: Skim  
 Do not burn

### 2. CHEMICAL DESIGNATIONS

2.1 **CG Compatibility Group:** 34; Esters  
 2.2 **Formula:** (C<sub>2</sub>H<sub>5</sub>O)<sub>3</sub>P  
 2.3 **IMO/UN Designation:** 3.3/2323  
 2.4 **DOT ID No.:** 2323  
 2.5 **CAS Registry No.:** 122-52-1  
 2.6 **NAERG Guide No.:** 129  
 2.7 **Standard Industrial Trade Classification:** 51631

### 3. HEALTH HAZARDS

- 3.1 **Personal Protective Equipment:** Self-contained breathing apparatus, rubber gloves and rubber boots.  
 3.2 **Symptoms Following Exposure:** Exposure to high concentrations may cause headache, nausea, and dizziness due to reduced cholinesterase activity.  
 3.3 **Treatment of Exposure:** INHALATION: CALL FOR MEDICAL ASSISTANCE. Remove to fresh air. Treat symptomatically. If not breathing, give artificial respiration. INGESTION: If swallowed and victim is conscious, have victim drink 1-2 glasses of milk or water and induce vomiting. If unconscious, do nothing except keep victim warm. EYES: Flush with water for 15 minutes. SKIN: Flush affected area with soap and plenty of water.  
 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; LD<sub>50</sub> = 3.2 g/kg (rat)  
 3.8 **Toxicity by Inhalation:** Currently not available.  
 3.9 **Chronic Toxicity:** Prolonged exposures may cause chemical pneumonitis.  
 3.10 **Vapor (Gas) Irritant Characteristics:** Vapors cause a slight smarting of the eyes or respiratory system if present in high concentrations. The effect is temporary.  
 3.11 **Liquid or Solid Characteristics:** Minimum hazard. If spilled on clothing and allowed to remain, may cause smarting and reddening of skin.  
 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:** 115°F C.C.  
 4.2 **Flammable Limits in Air:** Currently not available  
 4.3 **Fire Extinguishing Agents:** Water spray, dry chemical, carbon dioxide, foam.  
 4.4 **Fire Extinguishing Agents Not to Be Used:** Currently not available  
 4.5 **Special Hazards of Combustion Products:** May form hazardous decomposition products.  
 4.6 **Behavior in Fire:** Currently not available  
 4.7 **Auto Ignition 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:** 45.2 (calc.)  
 4.12 **Flame Temperature:** Currently not available  
 4.13 **Combustion Molar Ratio (Reactant to Product):** 14.0 (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 Caustics:** No reaction.  
 5.5 **Polymerization:** Will not occur.  
 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:** Currently not available  
 6.5 **GESAMP Hazard Profile:**  
 Bioaccumulation: 0  
 Damage to living resources: (3)  
 Human Oral hazard: 1  
 Human Contact hazard: 1  
 Reduction of amenities: X

### 7. SHIPPING INFORMATION

- 7.1 **Grades of Purity:** Approx. 100%  
 7.2 **Storage Temperature:** Ambient.  
 7.3 **Inert Atmosphere:** Currently not available  
 7.4 **Venting:** Currently not available  
 7.5 **IMO Pollution Category:** B  
 7.6 **Ship Type:** 2  
 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:**  

Category	Classification
Health Hazard (Blue).....	2
Flammability (Red).....	2
Instability (Yellow).....	1

 8.6 **EPA Reportable Quantity:** Not listed  
 8.7 **EPA Pollution Category:** Not listed.  
 8.8 **RCRA 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:** 166.16  
 9.3 **Boiling Point at 1 atm:** 311°F = 155°C = 428.2°K  
 9.4 **Freezing Point:** Currently not available  
 9.5 **Critical Temperature:** Currently not available  
 9.6 **Critical Pressure:** Currently not available  
 9.7 **Specific Gravity:** 0.969  
 9.8 **Liquid Surface Tension:** Currently not available  
 9.9 **Liquid Water Interfacial Tension:** Currently not available  
 9.10 **Vapor (Gas) Specific Gravity:** 5.73  
 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:** Currently not available  
 9.17 **Heat of Fusion:** Currently not available  
 9.18 **Limiting Value:** Currently not available  
 9.19 **Reid Vapor Pressure:** Currently not available

### NOTES

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9.20 SATURATED LIQUID DENSITY		9.21 LIQUID HEAT CAPACITY		9.22 LIQUID THERMAL CONDUCTIVITY		9.23 LIQUID VISCOSITY	
Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F	Temperature (degrees F)	British thermal unit inch per hour-square foot-F	Temperature (degrees F)	Centipoise
	C U R R E N T L Y  N O T  A V A I L A B L E		C U R R E N T L Y  N O T  A V A I L A B L E		C U R R E N T L Y  N O T  A V A I L A B L E		C U R R E N T L Y  N O T  A V A I L A B L E

9.24 SOLUBILITY IN WATER		9.25 SATURATED VAPOR PRESSURE		9.26 SATURATED VAPOR DENSITY		9.27 IDEAL GAS HEAT CAPACITY	
Temperature (degrees F)	Pounds per 100 pounds of water	Temperature (degrees F)	Pounds per square inch	Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F
	S L I G H T L Y  S O L U B L E	68	0.019		C U R R E N T L Y  N O T  A V A I L A B L E		C U R R E N T L Y  N O T  A V A I L A B L E