

TRIMETHYL PHOSPHITE

TPP

CAUTIONARY RESPONSE INFORMATION

Common Synonyms Methyl phosphite Phosphorous acid TMP Trimethyl ester	Liquid	Colorless	Pungent, pyridine-like odor
<p>Avoid contact with liquid and vapors. Stay upwind; keep out of low areas. Wear self-contained positive pressure breathing apparatus and full protective clothing. Shut off ignition sources and call fire department. Use water spray to reduce vapors. Notify local health and pollution control agencies. Protect water intakes.</p>			
Fire	<p>COMBUSTIBLE. May be ignited by heat, sparks or flames. Vapors may travel to a source of ignition and flash back. Container may explode in heat of fire. Runoff to sewer may create fire or explosion hazard. Move container from fire area if you can do it without risk. Cool containers that are exposed to flames with water from the side. For massive fire in cargo area, use unmanned hose holder or monitor nozzles; if this is impossible, withdraw from area and let fire burn. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tank due to fire.</p>		
Exposure	<p>CALL FOR MEDICAL AID.</p> <p>VAPOR May be poisonous if inhaled. Vapors may cause dizziness or suffocation. Fire may produce irritating or poisonous gases. Move victim to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.</p> <p>LIQUID Extremely destructive to upper respiratory tract, eyes, and skin. Harmful if absorbed through skin and eyes. Wash skin with soap and water. Remove and isolate contaminated clothing and shoes at the site. IF IN EYES: immediately flush eyes with running water for at least 15 minutes. IF SWALLOWED and victim is UNCONSCIOUS: have victim drink water or milk. DO NOT INDUCE VOMITING. IF SWALLOWED and victim is UNCONSCIOUS OR HAVING CONVULSIONS: do nothing except keep victim warm.</p>		
Water Pollution	<p>Effects of low concentrations on aquatic life are not known. May be harmful if it enters water intakes. Notify local health and wildlife officials. Notify operators of local water intakes.</p>		

1. CORRECTIVE RESPONSE ACTIONS

Stop discharge
 Contain
 Collection Systems: Skim

2. CHEMICAL DESIGNATIONS

2.1 **CG Compatibility Group:** 34; Esters
 2.2 **Formula:** (CH₃O)₃P
 2.3 **IMO/UN Designation:** 3.3/2329
 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:** INHALATION: 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-Ceiling:** 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 AEGL:** 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 PO_x
 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:** 34.5 (calc.)
 4.12 **Flame Temperature:** Currently not available
 4.13 **Combustion Molar Ratio (Reactant to Product):** 8.0 (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:** 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:** Currently not available
 6.5 **GESAMP Hazard Profile:**
 Bioaccumulation: 0
 Damage to living resources: -
 Human Oral hazard: 1
 Human Contact hazard: 0
 Reduction of amenities: 0

7. SHIPPING INFORMATION

- 7.1 **Grades of Purity:** 99+%
 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:**
- | Category | Classification |
|---------------------------|----------------|
| Health Hazard (Blue)..... | 0 |
| Flammability (Red)..... | 2 |
| Instability (Yellow)..... | 0 |
- 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:** 124.08
 9.3 **Boiling Point at 1 atm:** 232°F = 111°C = 384°K
 9.4 **Freezing Point:** -108°F = -78°C = 195°K
 9.5 **Critical Temperature:** Currently not available
 9.6 **Critical Pressure:** Currently not available
 9.7 **Specific Gravity:** 1.046 at 20°C
 9.8 **Liquid Surface Tension:** Currently not available
 9.9 **Liquid Water Interfacial Tension:** Currently not available
 9.10 **Vapor (Gas) Specific Gravity:** 4.3
 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 **Reid Vapor Pressure:** Currently not available

NOTES

TRIMETHYL PHOSPHITE

TPP

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
68	65.670		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
	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