

# TETRAETHYL DITHIOPYROPHOSPHATE

TED

## CAUTIONARY RESPONSE INFORMATION

<b>Common Synonyms</b> Dithiopyrophosphoric acid, O,O,O,O-tetraethyl ester Sulfotep Tetraethyl dithionopyrophosphate		Liquid                      Colorless  Sinks in water.
KEEP PEOPLE AWAY. AVOID CONTACT WITH LIQUID. Evacuate. Wear goggles and rubber overclothing (including gloves). Notify local health and pollution control agencies. Protect water intakes.		
<b>Fire</b>	Fire data not available.	
<b>Exposure</b>	CALL FOR MEDICAL AID.  LIQUID POISONOUS IF SWALLOWED OR IF SKIN IS EXPOSED. Remove contaminated clothing and shoes. Flush affected areas with plenty of water. IF IN EYES, hold eyelids open and flush with plenty of water. IF SWALLOWED and victim is CONSCIOUS, have victim drink water or milk and have victim induce vomiting. IF SWALLOWED and victim is UNCONSCIOUS OR HAVING CON- VULSIONS, do nothing except keep victim warm.	
<b>Water Pollution</b>	Effect of low concentrations on aquatic life is unknown. May be dangerous if it enters water intakes. Notify local health and wildlife officials. Notify operators of nearby water intakes.	

### 1. CORRECTIVE RESPONSE ACTIONS

Stop discharge  
 Collection Systems: Pump  
 Clean shore line

### 2. CHEMICAL DESIGNATIONS

2.1 **CG Compatibility Group:** Not listed.  
 2.2 **Formula:** (C<sub>2</sub>H<sub>5</sub>O)<sub>2</sub>PSOP(S)(OC<sub>2</sub>H<sub>5</sub>)<sub>2</sub>  
 2.3 **IMO/UN Designation:** 6.1/1704  
 2.4 **DOT ID No.:** 1704  
 2.5 **CAS Registry No.:** 3689-24-5  
 2.6 **NAERG Guide No.:** 153  
 2.7 **Standard Industrial Trade Classification:**  
 51631

### 3. HEALTH HAZARDS

- 3.1 **Personal Protective Equipment:** Mask with canister approved for organic phosphate pesticides; goggles or face shield; rubber gloves and other protective clothing to prevent contact with skin.
- 3.2 **Symptoms Following Exposure:** Contact with liquid causes irritation of eyes and skin. Compound can be absorbed through skin. Ingestion of liquid or inhalation of mist causes nausea, vomiting, mental confusion, abdominal pain, sweating, giddiness, apprehension, and restlessness; later, muscular twitching of the eyelids and tongue begin, then other muscles of face and neck become involved; generalized twitching and muscle weakness may occur; pulmonary edema, ataxia, tremor, and convulsions may advance to coma.
- 3.3 **Treatment of Exposure:** Call physician for all exposures to this compound. **INHALATION:** support respiration; keep airway clear; use artificial respiration if breathing is difficult or has stopped. **EYES:** flush with water immediately after contact for at least 15 min. **SKIN:** remove victim's clothing and shoes immediately using rubber gloves; quickly wipe off affected area with clean cloths; immediately follow with a shower using plenty of soap; if complete shower is impossible, wash affected skin, hair, and fingernails repeatedly with soap and water using clean cloths each time to prevent spreading the contamination. **INGESTION:** induce vomiting repeatedly until vomit fluid is clear (save fluid for physician's examination); if vomiting cannot be induced within 5 min., have victim drink plenty of milk or water; have him lie down and keep him warm; if increased secretions make breathing difficult, prop patient up; if he stops breathing, apply artificial or mouth-to-mouth respiration, preferably through an airway; wash victim's mouth of contamination; mechanical resuscitator should be used if available; oxygen may be necessary; keep patient under observation for 24 hrs.
- 3.4 **TLV-TWA:** 0.2 mg/m<sup>3</sup> (skin)  
 3.5 **TLV-STEL:** Not listed.  
 3.6 **TLV-Ceiling:** Not listed.  
 3.7 **Toxicity by Ingestion:** Grade 4; oral LD<sub>50</sub> = 5 mg/kg (rat)  
 3.8 **Toxicity by Inhalation:** Currently not available.  
 3.9 **Chronic Toxicity:** Causes chromosomal damage in mice  
 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:** 10 mg/m<sup>3</sup> (skin)  
 3.14 **OSHA PEL-TWA:** 0.2 mg/m<sup>3</sup> (skin)  
 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:**  
 Not flammable
- 4.2 **Flammable Limits in Air:** Not flammable
- 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 phosphorus and sulfur 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:** Not pertinent.
- 4.12 **Flame Temperature:** Currently not available
- 4.13 **Combustion Molar Ratio (Reactant to Product):** Not pertinent.
- 4.14 **Minimum Oxygen Concentration for Combustion (MOCC):** Not listed

### 5. CHEMICAL REACTIVITY

- 5.1 **Reactivity with Water:** Reacts slowly to form non-hazardous products
- 5.2 **Reactivity with Common Materials:**  
 Corrosive to most metals in the presence of moisture
- 5.3 **Stability During Transport:** Stable
- 5.4 **Neutralizing Agents for Acids and Cautistics:** 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; Emulsifiable concentrate; Dry mixtures with inert solid, >2%.
- 7.2 **Storage Temperature:** Ambient
- 7.3 **Inert Atmosphere:** No requirement
- 7.4 **Venting:** Pressure-vacuum
- 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:** Poison
- 8.2 **49 CFR Class:** 6.1
- 8.3 **49 CFR Package Group:** II
- 8.4 **Marine Pollutant:** Yes
- 8.5 **NFPA Hazard Classification:** Not listed
- 8.6 **EPA Reportable Quantity:** 100 pounds
- 8.7 **EPA Pollution Category:** B
- 8.8 **RCRA Waste Number:** P109
- 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:** 322.3
- 9.3 **Boiling Point at 1 atm:** Not pertinent (very high)
- 9.4 **Freezing Point:** Not pertinent
- 9.5 **Critical Temperature:** Not pertinent
- 9.6 **Critical Pressure:** Not pertinent
- 9.7 **Specific Gravity:** 1.19 at 25°C (liquid)
- 9.8 **Liquid Surface Tension:** Currently not available
- 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:** Not pertinent
- 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

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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
52	74.839		N O T		N O T		N O T
54	74.770						
56	74.700						
58	74.629						
60	74.559		P E R T I N E N T		P E R T I N E N T		P E R T I N E N T
62	74.490						
64	74.419						
66	74.349						
68	74.280						
70	74.209						
72	74.139						
74	74.070						
76	74.000						
78	73.940						
80	73.870						
82	73.799						
84	73.730						
86	73.660						

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
68	0.002		N O T  P E R T I N E N T		N O T  P E R T I N E N T		N O T  P E R T I N E N T