

PARATHION

PTO

CAUTIONARY RESPONSE INFORMATION

Common Synonyms O,O-Diethyl O-(p-nitrophenyl) phosphorothioate Ethyl parathion Phosphorothioic acid, O,O-diethyl-O-p-Nitrophenyl ester		Liquid Light to dark brown Sinks in water. Freezing point is 43°F.
KEEP PEOPLE AWAY. AVOID CONTACT WITH LIQUID AND VAPOR. Wear goggles, self-contained breathing apparatus, and rubber overclothing (including gloves). Notify local health and pollution control agencies. Protect water intakes.		
Fire	Not flammable. POISONOUS GASES ARE PRODUCED WHEN HEATED.	
Exposure	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 CONVULSIONS, do nothing except keep victim warm.	
Water Pollution	HARMFUL TO AQUATIC LIFE IN VERY LOW CONCENTRATIONS. 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; Dredge	2. CHEMICAL DESIGNATIONS 2.1 CG Compatibility Group: Not listed. 2.2 Formula: (C ₂ H ₅ O) ₂ PSOC ₆ H ₄ NO ₂ 2.3 IMO/UN Designation: 6.1/2784 2.4 DOT ID No.: 2783 2.5 CAS Registry No.: 56-38-2 2.6 NAERG Guide No.: 152 2.7 Standard Industrial Trade Classification: 51631
3. HEALTH HAZARDS 3.1 Personal Protective Equipment: Neoprene-coated gloves; rubber work shoes or overshoes; latex rubber apron; goggles; respirator or mask approved for toxic dusts and organic vapors 3.2 Symptoms Following Exposure: Inhalation of mist, dust, or vapor (or ingestion, or absorption through the skin) cause dizziness, usually accompanied by constriction of the pupils, headache, and tightness of the chest. Nausea, vomiting, abdominal cramps, diarrhea, muscular twitchings, convulsions and possibly death may follow. An increase in salivary and bronchial secretions may result which simulate severe pulmonary edema. Contact with eyes causes irritation. 3.3 Treatment of Exposure: Call a doctor for all exposures to this compound. INHALATION: remove victim from exposure immediately; have physician treat with atropine injections until full atropinization; 2-PAM may also be administered by physician. EYES: flush with water immediately after contact for at least 15 min. SKIN: remove all clothing and shoes immediately; quickly wipe off the affected area with a clean cloth; follow immediately with a shower, using plenty of soap. If a complete shower is impossible, wash the affected skin repeatedly with soap and water. INGESTION: if victim is conscious, induce vomiting and repeat until vomit fluid is clear; make victim drink plenty of milk or water; have him lie down and keep warm. 3.4 TLV-TWA: 0.1 mg/m ³ (skin) 3.5 TLV-STEL: Not listed. 3.6 TLV-Ceiling: Not listed. 3.7 Toxicity by Ingestion: Grade 4; oral LD ₅₀ = 2 mg/kg (rat) 3.8 Toxicity by Inhalation: Currently not available. 3.9 Chronic Toxicity: Birth defects in chick embryos 3.10 Vapor (Gas) Irritant Characteristics: Currently not available 3.11 Liquid or Solid Characteristics: Currently not available 3.12 Odor Threshold: 0.04 ppm 3.13 IDLH Value: 10 mg/m ³ 3.14 OSHA PEL-TWA: 0.1 mg/m ³ (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 on adjacent fires
- 4.4 **Fire Extinguishing Agents Not to Be Used:** High-pressure water hoses may scatter parathion from broken containers, increasing contamination hazard.
- 4.5 **Special Hazards of Combustion**
Products: Fumes from decomposing material may contain oxides of sulfur and nitrogen.
- 4.6 **Behavior in Fire:** Containers may explode when heated.
- 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:** Slow reaction, not considered hazardous
- 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:**
1.6 ppm/96 hr/minnow/TL_m/fresh water
0.43 ppm/<24 hr/brine shrimp/lethal/salt water
- 6.2 **Waterfowl Toxicity:** LD₅₀ = 2.13 mg/kg
- 6.3 **Biological Oxygen Demand (BOD):**
Currently not available
- 6.4 **Food Chain Concentration Potential:** No buildup in food chain
- 6.5 **GESAMP Hazard Profile:**
Bioaccumulation: 0
Damage to living resources: 4
Human Oral hazard: 4
Human Contact hazard: II
Reduction of amenities: XXX

7. SHIPPING INFORMATION

- 7.1 **Grades of Purity:** 98.5+% Sometimes distributed as solutions emulsifiable in water.
- 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:** I
- 8.4 **Marine Pollutant:** Yes
- 8.5 **NFPA Hazard Classification:**

Category	Classification
Health Hazard (Blue).....	4
Flammability (Red).....	1
Instability (Yellow).....	2
- 8.6 **EPA Reportable Quantity:** 10 pounds
- 8.7 **EPA Pollution Category:** A
- 8.8 **RCRA Waste Number:** P089
- 8.9 **EPA FWPCA List:** Yes

9. PHYSICAL & CHEMICAL PROPERTIES

- 9.1 **Physical State at 15° C and 1 atm:** Liquid
- 9.2 **Molecular Weight:** 291.3
- 9.3 **Boiling Point at 1 atm:** Very high; decomposes
- 9.4 **Freezing Point:** 43°F = 6°C = 279°K
- 9.5 **Critical Temperature:** Not pertinent
- 9.6 **Critical Pressure:** Not pertinent
- 9.7 **Specific Gravity:** 1.269 at 25°C (liquid)
- 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):**
Not pertinent
- 9.12 **Latent Heat of Vaporization:** Not pertinent
- 9.13 **Heat of Combustion:** -9,240 Btu/lb = -5,140 cal/g = -215 X 10³ J/kg
- 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
65	79.379	65	0.338	60	0.967	65	20.340
70	79.209	70	0.339	61	0.967	70	18.290
75	79.049	75	0.341	62	0.967	75	16.480
80	78.879	80	0.343	63	0.967	80	14.880
85	78.719	85	0.345	64	0.967	85	13.460
90	78.559	90	0.347	65	0.967	90	12.200
95	78.400	95	0.349	66	0.967	95	11.070
100	78.240	100	0.350	67	0.967	100	10.070
105	78.080	105	0.352	68	0.967	105	9.173
110	77.929	110	0.354	69	0.967	110	8.370
115	77.770	115	0.356	70	0.967	115	7.649
120	77.620	120	0.358	71	0.967	120	7.001
125	77.459	125	0.359	72	0.967	125	6.417
		130	0.361	73	0.967		
				74	0.967		
				75	0.967		
				76	0.967		
				77	0.967		

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
	I N S O L U B L E		N O T		N O T		N O T
	R E A C T S S L O W L		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