

DEMETON

DTN

CAUTIONARY RESPONSE INFORMATION

Common Synonyms O,O[diethyl-o(and 5)-]2-(ethylthio)ethylphosphorothioates Systox and isosystox mixture		Liquid	Yellowish-brown	Unpleasant odor
		Sinks in water.		
KEEP PEOPLE AWAY. AVOID CONTACT WITH LIQUID AND VAPOR. Avoid inhalation. Wear goggles and self-contained breathing apparatus. Shut off ignition sources. Call fire department. Notify local health and pollution control agencies. Protect water intakes.				
Fire	Solution in a combustible solvent. POISONOUS GASES MAY BE PRODUCED IN FIRE. Flashback along vapor trail may occur. Vapor may explode if ignited in an enclosed area. Wear goggles and self-contained breathing apparatus. Extinguish with dry chemicals, foam or carbon dioxide.			
Exposure	CALL FOR MEDICAL AID. VAPOR POISONOUS IF INHALED. If inhaled will cause headache or difficult breathing. If in eyes, hold eyelids open and flush with plenty of water. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen. LIQUID POISONOUS IF SWALLOWED. Irritating to skin and eyes. If swallowed will cause nausea, vomiting or loss of consciousness. 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	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
 Contain
 Collection Systems: Skim; Pump
 Chemical and Physical Treatment:
 Absorb
 Do not burn
 Clean shore line
 Salvage waterfowl

2. CHEMICAL DESIGNATIONS

2.1 **CG Compatibility Group:** Not listed.
 2.2 **Formula:** C₈H₁₈O₂PS₂-C₈H₁₈
 2.3 **IMO/UN Designation:** Not listed
 2.4 **DOT ID No.:** Not listed
 2.5 **CAS Registry No.:** 8065-48-3
 2.6 **NAERG Guide No.:** Not listed
 2.7 **Standard Industrial Trade Classification:** 51631

3. HEALTH HAZARDS

- 3.1 **Personal Protective Equipment:** Organic vapor respirator in confined areas; rubber or latex gloves; splash goggles; rubber boots
- 3.2 **Symptoms Following Exposure:** Inhalation causes headache, vertigo, blurred vision, lachrymation, salivation, sweating, muscular weakness and ataxia, dyspnea, diarrhea, abdominal cramps, vomiting, coma, pulmonary edema, and death. Ingestion causes nausea, vomiting, muscle twitching, coma. Contact with eyes or skin causes irritation.
- 3.3 **Treatment of Exposure:** Speed is essential. Call a physician after all overexposure to demeton.
 INHALATION: move to fresh air; if needed, begin artificial respiration. INGESTION: administer milk, water, or salt-water and induce vomiting repeatedly. EYES: flush with water for at least 15 min. SKIN: flood and wash exposed skin areas thoroughly with water; remove contaminated clothing under a shower; wash with soap and water.
- 3.4 **TLV-TWA:** 0.01 ppm
 3.5 **TLV-STEL:** Not listed.
 3.6 **TLV-Ceiling:** Not listed.
 3.7 **Toxicity by Ingestion:** Grade 4; oral LD₅₀ = 1.7 mg/kg (rat)
 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:** 10 mg/m³
 3.14 **OSHA PEL-TWA:** 0.1 mg/m³
 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:** 113°F C.C.
 4.2 **Flammable Limits in Air:** 1.0%-5.3%
 4.3 **Fire Extinguishing Agents:** Dry chemical, foam, or carbon dioxide
 4.4 **Fire Extinguishing Agents Not to Be Used:** Water may be ineffective on fire.
 4.5 **Special Hazards of Combustion Products:** Irritating fumes of sulfur dioxide and phosphoric acid may form in fire.
 4.6 **Behavior in Fire:** Compound may volatilize and form toxic fumes. Vapor of solvent is heavier than air and may travel considerable distance to a source of ignition and flash back.
 4.7 **Auto Ignition Temperature:** 867°F (xylene solvent)
 4.8 **Electrical Hazards:** (xylene) Class I, Group D
 4.9 **Burning Rate:** 5.8 mm/min.
 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:** No reaction
 5.2 **Reactivity with Common Materials:** May attack some forms of plastics.
 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:** 0.1 ppm/2-8 hr/bluegill/reduction of enzyme in brain/fresh water
 6.2 **Waterfowl Toxicity:** 7-15 mg/kg
 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:** 25%-66% solution in xylenes, which are combustible solvents
 7.2 **Storage Temperature:** Ambient
 7.3 **Inert Atmosphere:** No requirement
 7.4 **Venting:** Open (flame arrester)
 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:** Not listed
 8.2 **49 CFR Class:** Not pertinent
 8.3 **49 CFR Package Group:** Not listed.
 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 FWPCA List:** Not listed

9. PHYSICAL & CHEMICAL PROPERTIES

- 9.1 **Physical State at 15° C and 1 atm:** Liquid
 9.2 **Molecular Weight:** 258
 9.3 **Boiling Point at 1 atm:** > 284°F = > 140°C = > 413°K
 9.4 **Freezing Point:** Not pertinent
 9.5 **Critical Temperature:** Not pertinent
 9.6 **Critical Pressure:** Not pertinent
 9.7 **Specific Gravity:** 1.1 at 20°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:** Currently not available
 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
50	69.290		N O T		N O T		N O T
51	69.259						
52	69.219						
53	69.190						
54	69.150		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
55	69.120						
56	69.080						
57	69.049						
58	69.009						
59	68.980						
60	68.940						
61	68.910						
62	68.879						
63	68.839						
64	68.809						
65	68.770						
66	68.740						
67	68.700						
68	68.669						
69	68.629						
70	68.599						
71	68.559						
72	68.530						
73	68.490						
74	68.459						
75	68.419						

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 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