PHOSDRIN

PHD

CAUTIONARY RESPONSE INFORMATION

Common Synonyms			
Menite Mevinphos Phosfene	Liquid	Yellow to orange	Mild to none
	Sinks and mixes with water.		

Evacuate.
Keep people away. AVOID CONTACT WITH LIQUID AND VAPOR.
Wear goggles, self-contained breathing apparatus, and rubber overclothing (including gloves).
Shut off ignition sources and call fire department.
Notify local health and pollution control agencies.
Protect water intakes.

Fire

Combustible.
POISONOUS GASES ARE PRODUCED IN FIRE AND WHEN HEATED.
Wear goggles, self-contained breathing apparatus, and rubber overclothing (including gloves).

Exposure

CALL FOR MEDICAL AID.

VAPOR OR LIQUID.
POISONOUS IF SWALLOWED, INHALED, OR IF SKIN IS EXPOSED.
Move to fresh air.
If breathing has stopped, give artificial respiration.
If breathing is difficult, give oxygen.
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

Dilute and disperse
Stop discharge
Collection Systems: Dredge
Do not burn

2. CHEMICAL DESIGNATIONS

2.1 CG Compatibility Group: Not listed.
2.2 Formula: $C_7H_{13}O_6P$ $(CH_3O)_2(P{=}O)OC(CH_3){=}CHCOOCH_3$
2.3 IMO/UN Designation: 6.1/2783
2.4 DOT ID No.: 3018
2.5 CAS Registry No.: 7786-34-7
2.6 NAERG Guide No.: 152
2.7 Standard Industrial Trade Classification: 51631

3. HEALTH HAZARDS

3.1 Personal Protective Equipment: Wear protective clothing, rubber gloves, and breathing apparatus.
3.2 Symptoms Following Exposure: INHALATION, INGESTION, OR ABSORPTION THROUGH SKIN: Symptoms secondary to cholinesterase inhibition: headache, giddiness, nervousness, blurred vision, weakness, nausea, cramps, diarrhea, chest discomfort. Signs are sweating, miosis, tearing, salivation and other respiratory tract secretion, vomiting, cyanosis, papilledema and uncontrollable muscle twitches. Convulsions, coma, loss of reflexes, and loss of sphincter control are seen only in advanced cases.
3.3 Treatment of Exposure: Call a physician. INHALATION: Remove from exposure. Give artificial respiration and oxygen. Give 2 mg atropine IM every 15 minutes until effect becomes apparent. EYES: Flush thoroughly with water. SKIN: Wash with soap and water. INGESTION: Gastric lavage followed by saline catharsis.
3.4 TLV-TWA: 0.01 ppm.
3.5 TLV-STEL: Not listed.
3.6 TLV-Ceiling: 0.03 ppm
3.7 Toxicity by Ingestion: Grade 4; LD_{50} = below 50 mg/kg.
3.8 Toxicity by Inhalation: Currently not available.
3.9 Chronic Toxicity: Positive teratogenicity at 10 mg in hen eggs. Cholinesterase - inhibition persists for 2 to 6 weeks making subsequent exposures produce more severe symptoms.
3.10 Vapor (Gas) Irritant Characteristics: Currently not available
3.11 Liquid or Solid Characteristics: No appreciable hazard. Practically harmless to skin.
3.12 Odor Threshold: Currently not available
3.13 IDLH Value: 4 ppm
3.14 OSHA PEL-TWA: 0.1 mg/m^3
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: 175°F O.C.
4.2 Flammable Limits in Air: Currently not available
4.3 Fire Extinguishing Agents: Currently not available
4.4 Fire Extinguishing Agents Not to Be Used: Currently not available
4.5 Special Hazards of Combustion Products: Highly toxic fumes are imminent.
4.6 Behavior in Fire: Emits highly toxic fumes.
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 Stoichometric Air to Fuel Ratio: 40.5 (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: Hydrolyzes rapidly.
5.2 Reactivity with Common Materials: Corrosive to many metals.
5.3 Stability During Transport: Stable when anhydrous.
5.4 Neutralizing Agents for Acids and Caustics: Currently not available
5.5 Polymerization: Currently not available
5.6 Inhibitor of Polymerization: Currently not available

6. WATER POLLUTION

6.1 Aquatic Toxicity:
Fresh water
0.014 ppm/48-hour/Rainbow trout/LC_{50}
0.034 ppm/24-hour/Rainbow trout/LC_{50}
0.037 ppm/48-hour/Bluegill/LC_{50}
0.04 ppm/24-hour/Bluegill/LC_{50}
Saltwater
0.040 ppm/24-hour/Hermit crab/LC_{50}
0.013 ppm/24-hour/Sand shrimp/LC_{50}
6.2 Waterfowl Toxicity: 4.6 mg/kg/Young mallard/LD_{50}/Oral
6.3 Biological Oxygen Demand (BOD): Currently not available
6.4 Food Chain Concentration Potential: Low, Highly soluble, Hydrolyzes rapidly, nonpersistant.
6.5 GESAMP Hazard Profile: Not listed

7. SHIPPING INFORMATION

7.1 Grades of Purity: Technical >60% alpha isomer; 25% and 50% concentrates; 25% water soluble solutions; 1 and 2% dusts and granules
7.2 Storage Temperature: Currently not available
7.3 Inert Atmosphere: Currently not available
7.4 Venting: Currently not available
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:

Category	Classification
Health Hazard (Blue).....	3
Flammability (Red).....	0
Instability (Yellow).....	0

8.6 EPA Reportable Quantity: 10 pounds
8.7 EPA Pollution Category: A
8.8 RCRA Waste Number: Not listed
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: 224.16
9.3 Boiling Point at 1 atm: 617°F = 325°C = 598.2°K
9.4 Freezing Point: –68.8°F = –56°C = 217.2°K
9.5 Critical Temperature: Currently not available
9.6 Critical Pressure: Currently not available
9.7 Specific Gravity: 1.25 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: 7.73 (calculated)
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
68	78.030		CURRENTLY NOT AVAILABLE		CURRENTLY NOT AVAILABLE	77	8.280

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
	MISCIBLE		NOT PERTINENT		CURRENTLY NOT AVAILABLE		CURRENTLY NOT AVAILABLE