

PYRETHRINS

PRR

CAUTIONARY RESPONSE INFORMATION

Common Synonyms Dalmation-insect powder Persian-insect powder Pyrethrum flowers	Viscous liquid Sinks in water.	Yellow to brown	Characteristic odor of carrier
<p>Keep people away. Avoid contact with liquid, vapor, or dust. Wear goggles, self-contained breathing apparatus, and rubber overclothing (including gloves). Notify local health and pollution control agencies. Protect water intakes.</p>			
Fire	<p>Not flammable. POISONOUS GASES MAY BE PRODUCED IN FIRE OR WHEN HEATED. Wear goggles and self-contained breathing apparatus.</p>		
Exposure	<p>CALL FOR MEDICAL AID.</p> <p>VAPOR Irritating to skin and eyes. If inhaled, may cause sneezing, nasal discharge, and nasal stuffiness. Move to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen.</p> <p>LIQUID Irritating to skin and eyes. If swallowed may cause nausea, vomiting, headache, and other CNS disturbances. 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.</p>		
Water Pollution	<p>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.</p>		

1. CORRECTIVE RESPONSE ACTIONS

Stop discharge
Contain
Collection Systems: Pump; Dredge
Chemical and Physical Treatment:
Absorb

2. CHEMICAL DESIGNATIONS

- 2.1 **CG Compatibility Group:** Not listed.
- 2.2 **Formula:** C₂₁H₂₈O₅ - Pyrethrin I, C₂₂H₃₀O₅ - Pyrethrin II, C₂₂H₂₈O₅ - Cinerin I, C₂₁H₂₆O₅ - Cinerin II
- 2.3 **IMO/UN Designation:** 6.1/9184 (>5%); 9/9184 (<5%)
- 2.4 **DOT ID No.:** Not listed.
- 2.5 **CAS Registry No.:** 8003-73-7
- 2.6 **NAERG Guide No.:** Not listed
- 2.7 **Standard Industrial Trade Classification:** 59110

3. HEALTH HAZARDS

- 3.1 **Personal Protective Equipment:** Protective clothing and filter mask recommended.
- 3.2 **Symptoms Following Exposure:** INHALATION: Sneezing, serous nasal discharge, nasal stuffiness. A few cases of extrinsic asthma have been reported. Rare: anaphylactic reaction, peripheral vascular collapse and respiratory difficulty. EYES: May be irritating. SKIN: Contact dermatitis - a mild erythematous, vesicular dermatitis with papules in moist areas and intense pruritis. INGESTION: Excitation - to convulsions - to tetanic paralysis; muscular fibrillations; death from respiratory failure.
- 3.3 **Treatment of Exposure:** Call a doctor. INHALATION: Symptomatic - antihistamines are of value. EYES: Flush with water. SKIN: Wash with soap and water. INGESTION: Gastric lavage followed by saline catharsis. For nervous manifestations pentobarbital should be used. Diarrhea can be controlled with atropine sulfate.
- 3.4 **TLV-TWA:** Not listed.
- 3.5 **TLV-STEL:** Not listed.
- 3.6 **TLV-Ceiling:** Not listed.
- 3.7 **Toxicity by Ingestion:** Grade 2; LD₅₀ = 0.5 to 5 g/kg.
- 3.8 **Toxicity by Inhalation:** Currently not available.
- 3.9 **Chronic Toxicity:** May cause hypersensitive reaction, especially following previous sensitizing exposure. May cause eczematous dermatitis.
- 3.10 **Vapor (Gas) Irritant Characteristics:** Currently not available
- 3.11 **Liquid or Solid Characteristics:** Minimum hazard. If spilled on clothing and allowed to remain, may cause smarting and reddening of skin.
- 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:** Not flammable
- 4.2 **Flammable Limits in Air:** Not flammable
- 4.3 **Fire Extinguishing Agents:** Not pertinent
- 4.4 **Fire Extinguishing Agents Not to Be Used:** Not pertinent
- 4.5 **Special Hazards of Combustion Products:** Highly toxic fumes are imminent.
- 4.6 **Behavior in Fire:** Currently not available
- 4.7 **Auto Ignition Temperature:** Not flammable
- 4.8 **Electrical Hazards:** Not pertinent
- 4.9 **Burning Rate:** Not flammable
- 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:** Currently not available
- 5.3 **Stability During Transport:** Unstable in the presence of light, moisture and air.
- 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:**
24-hour LC₅₀ Rainbow trout = 0.56 ppm
24-hour LC₅₀ Bluegills = 0.078 ppm
24-hour LC₅₀ Mosquito fish = 0.027 ppm
24-hour LC₅₀ Mosquito fish = 93 ppm
96-hour LC₅₀ Bluegills = 74 ppm
96-hour LC₅₀ Channel catfish = 80 ppm
96-hour LC₅₀ Rainbow trout = 54 ppm
- 6.2 **Waterfowl Toxicity:** Oral LD₅₀ Young mallards = >10,000 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:** Currently not available
- 7.2 **Storage Temperature:** Cool
- 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:** 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:**

Category	Classification
Health Hazard (Blue).....	2
Flammability (Red).....	1
Instability (Yellow).....	0
- 8.6 **EPA Reportable Quantity:** 1 pound
- 8.7 **EPA Pollution Category:** X
- 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:** 328.4 Pyrethrin I; 372.4 Pyrethrin II; 316.4 Cinerin I; 360.4 Cinerin II
- 9.3 **Boiling Point at 1 atm:** 338°F = 170°C = 443.2°K (Pyrethrin I) 392°F = 200°C = 473.2°K (Pyrethrin II) 279°F = 137°C = 410.2°K (Cinerin I) 361°F = 183°C = 456.2°K (Cinerin II)
- 9.4 **Freezing Point:** Currently not available
- 9.5 **Critical Temperature:** Currently not available
- 9.6 **Critical Pressure:** Currently not available
- 9.7 **Specific Gravity:** Currently not available
- 9.8 **Liquid Surface Tension:** Currently not available
- 9.9 **Liquid Water Interfacial Tension:** Currently not available
- 9.10 **Vapor (Gas) Specific Gravity:** Currently not available
- 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
	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

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		C U R R E N T L Y N O T A V A I L A B L E