



MATERIAL SAFETY DATA SHEET

Manufacturer/information service:

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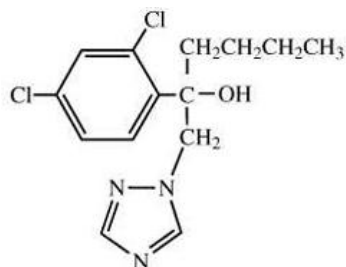
1. Chemical Product Identification

Product Name: Hexaconazole

Molecular Formula: $C_{14}H_{17}Cl_2N_3O$

Molecular Weight: 314.21g/mol

Structural Formula:



Chemical Name: 1-[(EZ)-2-cyano-2-methoxyiminoacetyl]-3-ethylurea (IUPAC)

Form: crystal

Color: white

Odor: odorless

CAS No: 79983-71-4

2. Composition / Information On Ingredients

Composition	CAS No.	Content %
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Hexaconazole	79983-71-4	95.2
Other ingredients	--	4.8

3. Hazards Identification

Emergency Overview:

Cholinesterase inhibitor may be fatal if swallowed.

Harmful if absorbed through skin or inhaled.

Causes moderate eye irritation.

Avoid breathing product vapors or spray mist.

Avoid contact with eyes, skin or clothing.

Keep out of reach of children.

Symptoms of over exposure are headaches, nausea, vomiting, cramps, weakness, blurred vision, pin point pupils, tightness in chest, labored breathing, nervousness, sweating, watering of eyes, drooling, muscle spasms and coma.

Potential Health Hazards:

Eye- Irritating, and may injure eye tissue if not removed promptly.

Skin- Harmful if absorbed through the skin. Large exposures could be fatal.

Inhalation- Vapor or mist concentrations may be harmful if inhaled. High concentrations could be fatal.

Ingestion- May be fatal if swallowed.

4. First Aid Measures

Inhaled: Remove victim to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. Get medical attention.

Skin: Wash with plenty of soap and water. Get medical attention.

Swallowed: Do not induce vomiting. Call a physician immediately.

Eyes: Flush eyes with plenty of water for 15 minutes. Call a physician.

Note to physician: This product is an organophosphorus ester that inhibits cholinesterase. In cases of severe acute poisoning, the decision of whether to induce vomiting or not should be made by the attending physician. If lavage is performed, endotracheal and/or esophageal



control is suggested. Danger from lung aspiration must be evaluated against toxicity when considering emptying the stomach.

Antidote: Treat symptomatically based on judgment of the attending physician in response to reactions of the patient. Atropine only by injection is an antidote. Oximes such as 2-PAM/protopam may be therapeutic but should only be used in conjunction with atropine. You may want to contact your supplier or a doctor to ensure that this information is up to date.

5. Fire-Fighting Measures

Flashpoint (method): Not applicable

Flammable limits (LFL-UFL): Not applicable

Fire and explosion hazard: Slight fire hazard when exposed to heat or flame.

Extinguishing media: Dry chemical, carbon dioxide, halon, water spray or standard foam.

Firefighting instructions: Evacuate area and fight fire from a safe distance.

Approach from upwind to avoid hazardous vapors and decomposition products. Fire exposed containers can build up pressure and should be kept cool with water spray if possible. Explosive vapor could form from ruptured containers. Foam fire extinguishing system is preferred to prevent environmental damage from excessive water run off. If water is used, avoid heavy hose streams. If possible, dike and collect water used to fight fire to prevent minimize run off.

Firefighting equipment: Self-contained breathing apparatus with full-face piece. Wear full firefighting turn-out gear (Bunker gear).

Hazardous combustion products: Thermal decomposition may product CO, CO₂, SO₂ and/or strong oxidizers.

6. Accidental Release Measures

Clean up spills immediately, using precautions described in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering.

Small spill: Absorb spill with inert material such as dry sand, vermiculite or fuller's earth, then place in a chemical waste container. Rinse area with dilute soda ash and place rinsate into chemical waste container.



Large spill: Same as for small spills; may neutralize with dilute alkaline solutions of soda ash and place into chemical waste container. Do not allow material to run off into soil, drainage systems, or bodies of water. Notify and consult with proper regulatory authorities.

7. Handling And Storage

Handling: Use only in a well-ventilated area. Loosen closure cautiously before opening. Do not reuse this container. Empty containers retain product residue and can be dangerous.

Storage: Keep out of reach of children! Store away from heat (77-88°F) and keep from freezing (<20°F). Keep away from food, feed and drinking water.

8. Exposure Controls/Personal Protection

Engineering controls: Local exhaust ventilation may be necessary to control any air contaminants to within their TLVs during the use of this product. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

Personal protective equipment:

Eye protection - Safety glasses.

Clothing - Long-sleeved shirt and long pants. Shoes plus socks.

Gloves - Chemical-resistant such as barrier laminate or viton.

Respirator - When handled in an area where exposure limits may be exceeded, use a respirator with either an organic vapor removing cartridge with a prefilter approved for pesticides (MSHA/NIOSH approval number prefix TC-23C), or a canister approved for pesticides (MSHA/NIOSH approval number prefix TC-14G).

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning and maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

9. Physical and Chemical Properties

Appearance: crystalline solid

Odour: odorless

Acidity: 0.1%



Explosibility: Thermal decomposition (e.g. fire) may produce carbon monoxide, carbon dioxide, nitrogen oxides

Partition coefficient: $\log P = 3.9$ at 20°C

Vapour pressure: 0.01mPa at 20°C

Flammability: not flammable

Corrosion characteristic: non corrosive to HDPE bottles

Melting point: 111°C

Density: 1.04g/ml at 20°C

Boiling point: Decomposes before boiling

Water solubility: 0.018 mg/l at 20°C

Other solubility: Solubility in organic solvents: methanol 246g/L, toluol 59g/L, acetone 164 g/l, hexane 0.8 g/l all at 20°C .

10. Stability and Reactivity

Conditions to avoid: None

Incompatibility (MATERIALS TO AVOID): N/A

Stability: This material is well stable in normal condition.

Hazardous Polymerization: Will not occur.

11. Toxicological Information

Acute oral LD50 for rats is 2189 mg/kg.

Acute dermal LD50 for rats is >2000 mg/kg.

Acute inhalation toxicity LC50 (4 h) for rats is >5.9 mg/L.

Skin irritation: Non-irritating to skin (rabbits).

Eye irritation: Slightly irritating to eyes (rabbits).

Skin sensitization for guinea pig: Non-sensitizing.

12. Ecological And Ecotoxicological Information

Effect on birds: Acute oral LD50 (8 d) for Mallard is >4000 mg/kg.

Effect on fish: Acute LC50 (96 h) for Rainbow trout is 3.4 mg/l.



Effects on aquatic invertebrates: Acute EC50 (48 h) for *Daphnia magna* is >2.9mg/l.

Effects on algae: Acute 72 hour EC50 is >1.7 mg/l.

Effects on bees: oral acute 48 hour LD50 is >100 µg/bee.

Effects on earthworms: Acute 14 day LC50 is 414 mg/kg.

13. Disposal Considerations

Pesticide disposal: Contaminated absorbents, used containers, surplus product, etc., should be burnt at > 1000°C in an incinerator, preferably designed for pesticide disposal, or buried in an approved landfill. Comply with local legislation applying to waste disposal.

Container disposal: Emptied containers retain product residues. Observe all labelled safeguards until container is cleaned, reconditioned, or destroyed. Combustible containers should be disposed of in pesticide incinerators or buried in an approved landfill. Noncombustible containers must first be triplerinsed with water.

14. Transport Information

Treated as normal goods.

UN No.: 2903.

15. Regulatory Information

Not applicable.

16. Other Information

This MSDS summarizes our best knowledge of the health and safety hazard information of the product and how to safely handle and use the product in the workplace. Each user should read this MSDS and consider the information in the context of how the product will be handled and used in the workplace including in conjunction with other products.

If clarification or further information is needed to ensure that an appropriate risk assessment can be made, the user should contact this company.

Our responsibility for products sold is subject to our standard terms and conditions, a copy of which is sent to our customers and is also available on request.