

Syngenta Crop Protection, Inc.
Post Office Box 18300
Greensboro, NC 27419

In Case of Emergency, Call
1-800-888-8372

1. PRODUCT IDENTIFICATION

Product Name: **ORDRAM 15GM** Product No.: A12896A
 EPA Signal Word: Caution
 Active Ingredient(%): Molinate Technical (15.0%) CAS No.: 2212-67-1
 Chemical Name: S-ethyl hexahydro-1H-azepine-1-carbothioate
 Chemical Class: A thiocarbamate herbicide, germination inhibitor
 EPA Registration Number(s): 100-1102 **Section(s) Revised: All sections**

2. COMPOSITION/INFORMATION ON INGREDIENTS

Material	OSHA PEL	ACGIH TLV	Other	NTP/IARC/OSHA Carcinogen
Crystalline Silica, Quartz	10 mg/m ³ /(%SiO ₂ +2) (respirable dust)	0.1 mg/m ³ (respirable silica)	Not Established	IARC Group 2A
Bentonite	15 mg/m ³ TWA (total); 5 mg/m ³ TWA (respirable)	10 mg/m ³ TWA (total); 3 mg/m ³ TWA (respirable)	Not Established	No
Molinate Technical (15.0%)	Not Established	Not Established	0.4 mg/m ³ TWA (skin)***	No

*** Syngenta Occupational Exposure Limit (OEL)

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.

3. HAZARDS IDENTIFICATION
Symptoms of Acute Exposure

Causes eye irritation and mild skin irritation. Harmful if inhaled or swallowed.

This product is a cholinesterase inhibitor. Principal routes of exposure are skin contact and inhalation. Symptoms of cholinesterase inhibition may include salivation, sweating, headache, nausea, muscle twitching, tremors, poor coordination, blurred vision, tears, abdominal cramps, diarrhea and chest discomfort.

Hazardous Decomposition Products

Can decompose at high temperatures forming toxic gases.

Physical Properties

Appearance: Beige to gray granules

Odor: Slight aromatic

Unusual Fire, Explosion and Reactivity Hazards

During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

4. FIRST AID MEASURES

Have the product container, label or Material Safety Data Sheet with you when calling Syngenta (800-888-8372), a poison control center or doctor, or going for treatment.

Ingestion: If swallowed: Call Syngenta (800-888-8372), a poison control center or doctor immediately for treatment

advice. Have the person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so after calling 800-888-8372 or by a poison control center or doctor. Do not give anything by mouth to an unconscious person.

Eye Contact: If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after 5 minutes, then continue rinsing eye. Call Syngenta (800-888-8372), a poison control center or doctor for treatment advice.

Skin Contact: If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call Syngenta (800-888-8372), a poison control center or doctor for treatment advice.

Inhalation: If inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call Syngenta (800-888-8372), a poison control center or doctor for further treatment advice.

Notes to Physician

There is no specific antidote if this product is ingested.

Treat symptomatically.

This product is a cholinesterase inhibitor. If cholinesterase inhibition is suspected, atropine by injection is antidotal.

Pralidoxime chloride (2-PAM, Protopam) is NOT recommended as an adjunctive therapy. Never use morphine.

Continued adsorption of the poison may occur resulting in fatal relapse after initial improvement. Very close supervision of the patient is indicated for 48-72 hours.

Medical Condition Likely to be Aggravated by Exposure

None known.

5. FIRE FIGHTING MEASURES

Fire and Explosion

Flash Point (Test Method): Not Applicable

Flammable Limits (% in Air): Lower: % Not Applicable Upper: % Not Applicable

Autoignition Temperature: Not Available

Flammability: Not Applicable

Unusual Fire, Explosion and Reactivity Hazards

During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

In Case of Fire

Use dry chemical, foam or CO₂ extinguishing media. Wear full protective clothing and self-contained breathing apparatus. Evacuate nonessential personnel from the area to prevent human exposure to fire, smoke, fumes or products of combustion. Prevent use of contaminated buildings, area, and equipment until decontaminated. Water runoff can cause environmental damage. If water is used to fight fire, dike and collect runoff.

6. ACCIDENTAL RELEASE MEASURES

In Case of Spill or Leak

Control the spill at its source. Contain the spill to prevent it from spreading, contaminating soil, or entering sewage and drainage systems or any body of water. Clean up spills immediately, observing precautions outlined in Section 8. If a solid, sweep up material and place in a compatible disposal container. If a liquid, cover entire spill with absorbing material and place into compatible disposal container. Scrub area with hard water detergent (e.g. commercial products such as Tide, Joy, Spic and Span). Pick up wash liquid with additional absorbent and place into compatible disposal container. Once all material is cleaned up and placed in a disposal container, seal container and arrange for disposition.

7. HANDLING AND STORAGE

Store the material in a well-ventilated, secure area out of reach of children and domestic animals. Do not store food, beverages or tobacco products in the storage area. Prevent eating, drinking, tobacco use, and cosmetic application in areas where there is a potential for exposure to the material. Wash thoroughly with soap and water after handling.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

THE FOLLOWING RECOMMENDATIONS FOR EXPOSURE CONTROLS/PERSONAL PROTECTION ARE INTENDED FOR THE MANUFACTURE, FORMULATION, PACKAGING AND USE OF THIS PRODUCT.

FOR COMMERCIAL APPLICATIONS AND/OR ON-FARM APPLICATIONS CONSULT THE PRODUCT LABEL.

- Ingestion: Prevent eating, drinking, tobacco usage and cosmetic application in areas where there is a potential for exposure to the material. Wash thoroughly with soap and water after handling.
- Eye Contact: Where eye contact is likely, use chemical splash goggles. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.
- Skin Contact: Where contact is likely, wear chemical-resistant (such as nitrile or butyl) gloves, coveralls, socks and chemical-resistant footwear. For overhead exposure, wear chemical-resistant headgear.
- Inhalation: Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below exposure limits. A NIOSH-certified combination air-purifying respirator with an N, P or R 95 or HE class filter and an organic vapor cartridge may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air-purifying respirators is limited. Use a pressure demand atmosphere-supplying respirator if there is any potential for uncontrolled release, exposure levels are not known, or under any other circumstances where air-purifying respirators may not provide adequate protection.

9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance: Beige to gray granules
- Odor: Slight aromatic
- Melting Point: Not Available
- Boiling Point: Not Applicable
- Specific Gravity/Density: 60.00 lbs./cu.ft.
- pH: Not Available

Solubility in H₂O

- Molinate Technical: Soluble in/with water (~0.1%)

Vapor Pressure

- Molinate Technical: 0.0053 mmHg @ 68°F (20°C)

10. STABILITY AND REACTIVITY

- Stability: Stable under normal use and storage conditions.
- Hazardous Polymerization: Will not occur.
- Conditions to Avoid: None known.
- Materials to Avoid: None known.
- Hazardous Decomposition Products: Can decompose at high temperatures forming toxic gases.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity/Irritation Studies (Finished Product)

- Ingestion: Slightly Toxic
Oral (LD50 Rat) : 4,100 mg/kg body weight
- Dermal: Slightly Toxic
Dermal (LD50 Rabbit) : > 2,000 mg/kg body weight
- Inhalation: Slightly Toxic
Inhalation (LC50 Rat) : 1.39 mg/l 4 hrs (applies to technical dry material)
- Eye Contact: Severely Irritating (Rabbit)
- Skin Contact: Non-Irritating (Rabbit)
- Skin Sensitization: Not a Sensitizer (Guinea Pig) (data based on the technical material)

Reproductive/Developmental Effects

- Molinate Technical: Developmental: Fetotoxicity in rats at dose levels that are also considered maternotoxic. No clear evidence of unique fetal susceptibility for molinate.
Reprotoxicity: Reproductive toxin in rodent studies. Evidence of reproductive toxicity in humans

and other non-rodent animals is either non-existent or unclear.

Chronic/Subchronic Toxicity Studies

Molinate Technical: Reversible clinical signs of neurotoxicity seen in animals resulting from weak cholinesterase inhibition.

Carcinogenicity

Molinate Technical: No treatment-related tumors seen in animal studies.

Other Toxicity Information

This product is a cholinesterase inhibitor. Principal routes of exposure are skin absorption and inhalation. Severe cases of cholinesterase inhibition may lead to convulsions, pulmonary edema, respiratory failure and death.

Toxicity of Other Components

Bentonite

Prolonged inhalation of excessive concentrations of dust may lead to lung injury.

Crystalline Silica, Quartz

Chronic inhalation exposure to crystalline silica is known to cause silicosis and pulmonary fibrosis in humans. Experimental animals exposed to crystalline silica developed respiratory tract cancers.

Target Organs

Active Ingredients

Molinate Technical: CNS, blood

Inert Ingredients

Bentonite: Respiratory tract

Crystalline Silica, Quartz: Respiratory tract

12. ECOLOGICAL INFORMATION

Summary of Effects

Molinate Technical:

Highly toxic to invertebrates. Slightly toxic to fish and birds.

Eco-Acute Toxicity

Molinate Technical: Invertebrates (water flea) LC50/EC50 0.76 ppm

Fish (Trout) LC50/EC50 13 ppm

Fish (Bluegill) LC50/EC50 22 ppm

Birds (8-day dietary - Bobwhite Quail) LC50/EC50 > 5,620 ppm

Birds (8-day dietary - Mallard duck) LC50/EC50 2,500 ppm

Eco-Chronic Toxicity

Molinate Technical: Not Available

Environmental Fate

Molinate Technical:

The information presented here is for the active ingredient, molinate.

Persistence (Half-Life): Soil - 13 days. Water - stable.

Photolysis (Half-Life): Soil - stable.

Leaching/Mobility: High mobility (Koc = 117). Leaches readily.

13. DISPOSAL CONSIDERATIONS

Disposal

Do not reuse product containers. Dispose of product containers, waste containers, and residues according to local, state, and federal health and environmental regulations.

Characteristic Waste: Not Applicable

Listed Waste:

Not Applicable

14. TRANSPORT INFORMATION

DOT Classification

Not regulated by DOT.

B/L Freight Classification

Herbicides, NOIBN

Comments

None.

15. REGULATORY INFORMATION

EPCRA SARA Title III Classification

Section 311/312 Hazard Classes: Acute Health Hazard
Chronic Health Hazard

Section 313 Toxic Chemicals: Molinate Technical (15.0%) (CAS No. 2212-67-1)

California Proposition 65

Not Applicable

CERCLA/SARA 302 Reportable Quantity (RQ)

None

RCRA Hazardous Waste Classification (40 CFR 261)

Not Applicable

TSCA Status

Exempt from TSCA, subject to FIFRA

16. OTHER INFORMATION

NFPA Hazard Ratings

Health: 2
Flammability: 1
Instability: 0

HMIS Hazard Ratings

Health: 2
Flammability: 1
Reactivity: 0

0	Minimal
1	Slight
2	Moderate
3	Serious
4	Extreme

For non-emergency questions about this product call:

1-800-334-9481

Original Issued Date: 10/23/2000

Revision Date: 11/15/2002

Replaces:

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein.

RSVP# : SCP-955-00379A

End of MSDS