

MATERIAL SAFETY DATA SHEET

Apollo® SC OVICIDE/MITICIDE

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1. CHEMICAL PRODUCT and COMPANY IDENTIFICATION

Product name: **Apollo® SC OVICIDE/MITICIDE**
Chemical name of active ingredient(s): Clofentezine: 3,6-bis-(2-chlorophenyl)-1,2,4,5-tetrazine
Registrant: Makhteshim Agan of North America, Inc.
4515 Falls of Neuse Road, Suite 300
Raleigh, NC 27609
Phone: 919-256-9300
For fire, spill, and/or leak emergencies, contact Phone: 1-800-535-5053
Infotrac:
For medical emergencies and health and safety inquiries, contact Prosar: Phone: 1-877-250-9291

2. COMPOSITION/INFORMATION ON INGREDIENTS

MATERIAL	%	OSHA/PEL	ACGIH/TLV	OTHER	NTP/IARC/OSHA (Carcinogen)
Clofentezine	42	Not established	Not established	4 mg/m ³ (TWA)	Not applicable

3. HAZARDS IDENTIFICATION

PHYSICAL PROPERTIES:

APPEARANCE: Viscous magenta liquid

ODOR: Odorless

EMERGENCY OVERVIEW: CAUTION. Causes mild eye irritation. Avoid contact with eyes, skin or clothing. Harmful if swallowed or absorbed through skin.

ROUTES OF EXPOSURE: Skin contact, mist inhalation.

SIGNS AND SYMPTOMS OF EXPOSURE: Effects of overexposure: None known

IMMEDIATE EFFECTS

Skin: May be a slight skin irritant. A weak skin sensitizer in animal studies.

Eyes: A slight eye irritant.

Inhalation: No specific health effects are known.

Ingestion: No specific health effects are known.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: None known.

4. FIRST AID MEASURES

FIRST AID	
IF ON SKIN OR CLOTHING:	<ul style="list-style-type: none">Take off contaminated clothing.Rinse skin immediately with plenty of water for 15-20 minutes.Call a poison control center or doctor for treatment advice.
IF IN EYES:	<ul style="list-style-type: none">Hold eye open and rinse slowly and gently with water for 15-20 minutes.Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.Call a poison control center or doctor for treatment advice.
IF SWALLOWED:	<ul style="list-style-type: none">Call a poison control center or doctor immediately for treatment advice.Have person sip a glass of water if able to swallow.Do not induce vomiting unless told to do so by a poison control center or doctor.Do not give anything by mouth to an unconscious person.
IF INHALED:	<ul style="list-style-type: none">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 a poison control center or doctor for further treatment advice.

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Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact PROSAR at 1-877-250-9291 for emergency medical treatment information.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES:

Flash Point: Not applicable

Advice on protection against fire and explosion:

FIRE AND EXPLOSION HAZARDS: Evolution of toxic fumes, which may include nitrogen oxides and hydrogen chloride.

FIRE FIGHTING INSTRUCTIONS: Do not breathe fumes. Wear self-contained breathing apparatus. Spray containers with water to keep cool.

SUITABLE EXTINGUISHING MEDIA: Water, foam, dry powder or carbon dioxide.

6. ACCIDENTAL RELEASE MEASURES

GENERAL: Use proper protective equipment to minimize exposure (see Section 8). Take all necessary actions to prevent and to remedy the adverse effects of the spill. Notify the appropriate authorities immediately.

DISPOSAL: Ensure that the disposal is in compliance with federal requirements and state or local regulations.

LAND SPILL OR LEAK: Contain and absorb spillage with absorptive material. Use clean shovel and place into clean, dry containers for disposal. Wash the area with detergent and water. Do not allow spilled material to enter sewer or watercourse.

7. HANDLING AND STORAGE

PROHIBITIONS: Do not contaminate water, food, or feed by storage or disposal.

STORAGE: Store in original container, tightly closed, in a safe place. The material must be protected from frost. Do not allow product to freeze.

STORAGE TEMPERATURE (MIN/MAX): Minimum: 32° F (0° C); Maximum: 86° F (30° C)

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

THE FOLLOWING RECOMMENDATIONS FOR EXPOSURE CONTROLS/PERSONAL PROTECTION ARE INTENDED FOR THE MANUFACTURE, FORMULATION AND PACKAGING OF THE PRODUCT. FOR COMMERCIAL APPLICATION AND ON-FARM APPLICATIONS, CONSULT THE PRODUCT LABEL.

FOR APPLICATORS AND HANDLERS:

Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for category C on an EPA chemical resistance category selection chart. Do not enter or allow worker entry into treated areas during the restricted entry interval of 12 hours. PPE required for early entry to treated areas that is permitted under the WPS and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls,
- Chemical-resistant gloves such as barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, poly-vinyl chloride or Viton, and
- Shoes plus socks.

The personal protective equipment (PPE) in accordance with OSHA standards is recommended immediately below.

BODY PROTECTION: Rubber protective gloves, long-sleeve shirt, long pants, boots.

EYE PROTECTION: Goggles, safety glasses.

RESPIRATORY PROTECTION: Ensure good ventilation. If not adequate, wear suitable respirator for spray mist.

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Users should:

- Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove and wash contaminated clothing before reuse.

EXPOSURE GUIDELINES: Refer to Section 2.

ENGINEERING CONTROLS: Refer to product label.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Viscous magenta liquid

ODOR: Odorless

Solubility (H₂O): <1.0 mg/l (22°C, a.i.)

Vapor Pressure: 1.3×10^{-7} Pa@25°C a.i.

Density: 9.9 lb./gal

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable under normal ambient and anticipated storage conditions.

HAZARDOUS POLYMERIZATION: Will not occur

FIRE AND EXPLOSION HAZARDS: Evolution of toxic fumes, which may include nitrogen oxides and hydrogen chloride.

11. TOXICOLOGICAL INFORMATION

INGESTION:	Oral LD50 (Rat)	>5,000 mg/kg
DERMAL:	Dermal LD50 (Rabbit)	>2,400 mg/kg
INHALATION:	Inhalation LC50 (Rat)	Not determined*
EYE CONTACT:	Slight eye irritant	
SKIN CONTACT:	Mild skin irritant	
SKIN SENSITIZATION:	Not a Sensitizer (Guinea Pig)	

* Apollo SC proved to be too viscous for generation of an aerosol; risk of inhalation exposure is minimal.

The studies reported below were carried out with the Clofentezine Technical (96%), the active ingredient.

SUBCHRONIC (TARGET ORGAN EFFECTS)

Results from 90-day animal studies suggest no target organ effects under the conditions of normal handling and use.

CHRONIC (CANCER INFORMATION)

Clofentezine showed no adverse effect in a 115-week feeding study with rats at low dose levels of clofentezine. At the highest test dose of 400 ppm, treated rats had increased liver weight and male rats showed a slight increase in incidence of thyroid follicular cell tumors; the latter, however, is an indirect effect caused by stimulation of TSH hormone and is unlikely to occur in humans. EPA has interpreted this animal study result and placed clofentezine technical in Carcinogenicity Category C, a possible human carcinogen under chronic exposure to extreme experimental dose.

Similarly, in feeding studies with mice (105 weeks) and dogs (52 weeks), effects on organ weights were only observed at the highest test dose: female mice (5,000 ppm), increased liver weight, dogs (20,000 ppm), moderate liver toxicity, slight increases in adrenal weights (males) and thyroid weights (females).

CARCINOGENICITY: NTP: NO IARC: No OSHA: No

TERATOGENICITY (BIRTH DEFECTS)

Clofentezine demonstrated no teratogenic effects in fetuses of rats and rabbits given up to 3200 mg/kg/day and 3000 mg/kg/day, respectively.

REPRODUCTIVE EFFECTS

In a three-generation study in rats, clofentezine showed no adverse effects on fertility or reproductive performance at dose levels up to 400 ppm.

MUTAGENICITY (GENETIC EFFECTS)

Clofentezine was not mutagenic or genotoxic when tested in the Ames gene mutation assay and four other mutagenesis systems.

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12. ECOLOGICAL INFORMATION

ENVIRONMENTAL HAZARDS: For terrestrial uses, do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not apply within 100 feet of lakes, reservoirs, rivers, permanent streams, marshes, natural ponds, estuaries, and commercial fish farm ponds. Do not apply when weather conditions favor drift from treated area. Do not allow spray to drift off of crop, especially when spraying outer rows. Always direct spray *into* the orchard. Do not contaminate water when disposing of equipment washwaters or rinsate.

ECOLOGICAL EFFECTS (clofentezine):

Rainbow Trout 96-hour LC50:	10 mg/L
Bluegill Sunfish 96-hour LC50:	24 mg/L
<i>Daphnia magna</i> 48-hour EC50:	51 mg/L

13. DISPOSAL CONSIDERATIONS

PESTICIDE DISPOSAL: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. Ensure that the disposal is in compliance with federal requirements and state or local regulations.

CONTAINER DISPOSAL: Dispose of product containers, waste containers, and residues according to label instructions and local, state, and federal health and environmental regulations.

14. TRANSPORT INFORMATION

DOT CLASSIFICATION:

Not regulated

INTERNATIONAL TRANSPORTATION:

IMO (vessel): Not regulated

IATA (air): Not regulated

15. REGULATORY INFORMATION

SARA TITLE III CLASSIFICATION:

SECTION 302: Not applicable

SECTION 311/312: Acute (Immediate) Health Hazard

SECTION 313 Chemical(s): Not applicable

CA PROPOSITION 65: Not Applicable

CERCLA REPORTABLE QUANTITY(RQ): None

RCRA CLASSIFICATION: Under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste.

TOXIC SUBSTANCES CONTROL ACT (TSCA): The ingredients of this product are listed on the TSCA inventory or are exempt.

WHMIS INGREDIENT DISCLOSURE LISTED COMPONENTS:

CANADIAN WHMIS CLASSIFICATION: NC; Apollo SC is not a Controlled Product under WHMIS regulations.

16. OTHER INFORMATION

HAZARD RATINGS	NFPA	HMIS		
HEALTH:	1	1	0	MINIMAL
FLAMMABILITY:	0	0	1	SLIGHT
REACTIVITY:	0	0	2	MODERATE
			3	HIGH
			4	SEVERE

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MSDS DATE: 11-6-08. Supersedes versions dated 12-05-05, 9-22-05, 5-11-05 and 4-4-03. Changes made to all sections.

The information contained herein is given in good faith and is believed to be correct, but no warrant, express or implied, is made. Consult Makhteshim Agan of North America, Inc. for further information.