

MATERIAL SAFETY DATA SHEET

Apollo® SC OVICIDAL MITICIDE

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1. CHEMICAL PRODUCT and COMPANY IDENTIFICATION

Product name: **Apollo® SC OVICIDAL MITICIDE (PCP Reg. No.21035)**
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 Infotrac: Phone: 1-800-535-5053
For medical emergencies and health and safety inquiries, contact Prostar: 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. Keep out of reach of children. Do not take internally. Avoid contact with skin, eyes, or clothing. Avoid breathing spray mist.

ROUTES OF EXPOSURE: Skin contact, inhalation.

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 in eyes: 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 centre or doctor for treatment advice.

If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control centre or doctor for treatment advice.

If inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control centre or doctor for further treatment advice.

If swallowed: Call a poison control centre 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 centre or doctor. Do not give anything by mouth to an unconscious person.

Take container, label or product name and Pest Control Product Registration Number with you when seeking medical attention.

TOXICOLOGICAL INFORMATION: Skin or eye contact may cause irritation.

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5. FIRE FIGHTING MEASURES

FLASH POINT: N/A.

FLAMMABLE LIMITS: LFL/UFL: N/A

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. Take all necessary actions to prevent and to remedy the adverse effects of the spill. Notify the appropriate authorities immediately.

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

PRECAUTIONS TO BE TAKEN IN HANDLING: Do not contaminate water, food, or feed by storage or disposal. All users must follow all handling precautions, use directions and clean-up procedures noted on the label.

PRECAUTIONS TO BE TAKEN IN 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.

- Wear a broad-brimmed hat
- Wear long-sleeved coveralls and apron (or a nonpermeable rainsuit)
- Wear suitable chemical resistant gloves during mixing, loading, application and clean-up to minimize exposure.
- **Users should:**
 - Wash hands and exposed skin before eating, drinking or smoking and after spraying or handling
 - Wash contaminated clothing thoroughly before reuse.

EXPOSURE GUIDELINES: Refer to Section 2.

ENGINEERING CONTROLS: Use adequate ventilation to minimize airborne concentrations of this material.

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 x 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.

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11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY/IRRITATION STUDIES:

Acute Oral LD50 (Rat) :	> 5,000 mg/kg
Acute Dermal LD50 (Rat) :	> 2,400 mg/kg
Acute Inhalation LC50 (Rat):	Not determined *
Eye Irritation:	Slightly irritating
Dermal Irritation:	Mildly irritating
Dermal Sensitization:	Not a skin sensitizer

* 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 TOXICITY (TARGET ORGAN EFFECTS):

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

CHRONIC TOXICITY:

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).

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.

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: For information on disposal of unused, unwanted product, contact the manufacturer or the provincial regulatory agency.

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CONTAINER DISPOSAL: Do not reuse this container for any purpose. This is a recyclable container, and is to be disposed of at a container collection site. Contact your local distributor/dealer or municipality for the location of the nearest collection site. Before taking the container to the collection site: Triple- or pressure rinse the empty container. Add the rinsings to the spray mixture in the tank. Make the empty, rinsed container unsuitable for further use. If there is no container collection site in your area, dispose of the container in accordance with provincial requirements.

14. TRANSPORT INFORMATION

DOT CLASSIFICATION:

Not regulated

INTERNATIONAL TRANSPORTATION:

IMO (vessel): Not regulated

IATA (air): Not regulated

15. REGULATORY INFORMATION

CANADIAN REGULATIONS:

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the CPR.

WHMIS INGREDIENT DISCLOSURE LISTED COMPONENTS:

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

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): Not applicable

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.

TSCA STATUS: The ingredients of this product are listed on the TSCA inventory or are exempt.

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

MSDS DATE: 1-11-12.

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.