



MATERIAL SAFETY DATA SHEET

SUBJECT: ANT EC
EFFECTIVE DATE: JULY 2013
REVISION DATE: MAY 2014
REVISION NO: 4
PAGE : 1 of 5
PRODUCT CODE: -

1. PRODUCT AND COMPANY IDENTIFICATION

SUPPLIER: **EFEKTO**
PO Box 654127,
BENMORE, 2010

EMERGENCY TELEPHONE NUMBERS
SPILLAGES:
Emergency telephone: 011 3047200

POISONINGS:
National Poison Centre: 021-9386084 (office hours).
021-9316129 (after hours).
Emergency Number 0831233911
UOFS Pharmacology/Toxicology information centre:
0824910160

Product name: ANT

Use: An emulsifiable concentrate insecticide containing a residual contact pyrethroid.

2. COMPOSITION / INFORMATION ON INGREDIENTS

Ingredients: Deltamethrin = 10 g/l
PBO = 0.0435 g/l

Chemical Family: Pyrethroids
Common name: **Deltamethrin**
Chemical Name: (S)- α -cyano-3-phenoxybenzyl(1R,3R)-3-(2,2-dibromovinyl)-2,2-dimethylcyclopropanecarboxylate (IUPAC)
Piperonyl Butoxide
S-[2-(2-utoxyethoxy)ethoxymethyl]-6-propyl-1,3-benzodioxole

CAS No.: 52918-63-5 Deltamethrin
51-03-6 (Piperonyl Butoxide)

Chemical Formula: **Deltamethrin**
 $C_{22}H_{19}Br_2NO_3$ (Mol. wt.: 505.2)
Piperonyl Butoxide
 $C_{19}H_{30}O_5$ (Technical)

UN No.: 1993

3. HAZARD IDENTIFICATION

FLAMMABLE.
A moderately toxic insecticide.

Environment:
Very toxic to aquatic organisms may cause long-term adverse effects in the aquatic environment.

Likely routes of exposure:
Skin and eye contact, ingestion and inhalation.

Eye contact:
Risk of serious damage to eyes. The product may cause irritation.

Skin contact:
The product is irritating. Short-term dermal exposure may cause itching, burning, tingling, numbness, or a feeling of warmth, but not dermatitis. Repeated exposure may cause skin dryness or cracking.

Ingestion:
May cause lung damage if swallowed. See point 4 for symptoms.

Inhalation:
Harmful by inhalation. Irritating to respiratory system. See point 4 for symptoms.

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4. FIRST AID MEASURES

Symptoms of exposure to the product include: mucous membrane irritation from inhalation, itching, numbness and burning of the skin, dizziness, headache, nausea, vomiting, gastro-enteritis with diarrhoea, nervousness, anxiety, salivation, inco-ordination, tremors, muscular paralysis, convulsions, coma, and death through respiratory failure.

Deltamethrin can induce numbness, itching, tingling, and burning sensations in exposed workers, which develop after a latent period of approximately 30 min, peak by 8 hours, and disappear within 24 hours.

Inhalation:
Remove source of contamination or move victim to fresh air. Keep affected person warm and at rest. Keep airway clear, administer artificial respiration if necessary. Treat symptomatically and supportively. Seek medical advice immediately.

Skin contact:
Remove contaminated clothing, shoes and leather goods. Gently wipe off excess chemical. Wash skin gently and thoroughly with water and non-abrasive soap followed by alcohol. Apply Vitamin E cream or simple toilet milks. Seek medical advice if necessary. The product is not considered to be a dermal sensitiser, but persons who become sensitized may



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require specialized medical management with anti-inflammatory agents.

Eye contact:

Immediately flush eyes with gently flowing lukewarm water or saline solution for 20 minutes, holding the eyelid(s) open. Instillation of local anesthetic drops e.g. 1 % Amethocain Hydrochloride eye drops. Give Analgesics as necessary. Seek medical attention if necessary.

Ingestion:

DO NOT INDUCE VOMITING. Wash out mouth with water. Seek medical advice immediately. Administration of gastric lavage or oxygen should be performed by qualified medical personnel. Do not administer milk, cream, or other substances containing vegetable or animal fats which enhance absorption of pyrethroids.

Advice to physician: There is no specific antidote.

Systemic treatment: Endotracheal intubation should be done and gastric lavage performed, followed by administration charcoal. Monitor respiratory and cardiac functions. ECG-monitoring. Check for pulmonary oedema in the event of inhalation.

Treatment against convulsions:

Give diazepam: for adults 5-10 mg intravenously as necessary until fully sedated: for children 2.5 mg intravenously.

5. FIRE FIGHTING MEASURES

Suitable extinguishing media:

Water spray, alcohol-resistant foam, dry powder, carbon dioxide (CO₂). Do not use high volume water jet for safety reasons.

Extinguishing agents:

Extinguish small fires with carbon dioxide, dry powder, or alcohol-resistant foam. Water spray can be used for cooling of unaffected stock, but avoid water coming in contact with the product. Contain water used for fire fighting for later disposal.

Firefighting:

Remove container from fire area if possible or cool containers with water in order to avoid pressure being built up due to heat. Whenever possible, contain fire-fighting water by bunding area with sand or earth.

Personal protective equipment:

Fire may produce irritating or poisonous vapours (toxic oxides of carbon), mists or other products of combustion. Do not breathe fumes. Fire-fighters and others that may be exposed should wear full protective clothing and self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:

Avoid contact with skin and eyes. Avoid contact with spilled product or contaminated surfaces. Do not inhale fumes. When dealing with a spillage do not eat, drink or smoke. For personal protection see Section 8.

Environmental precautions:

Keep people and animals away. Do not allow to enter drains or water courses. When the product contaminates public waters, inform appropriate authorities immediately in accordance with local regulations.

Occupational spill:

Do not allow the product to come in contact with water systems. For small liquid spills, soak up with sand or other suitable noncombustible absorbent material, and place into containers for subsequent disposal. For large spills, contain liquid far ahead of spill. Contain spillage and contaminated water for subsequent disposal. Do not flush spilled material into drains. Keep spectators away and upwind.

7. HANDLING AND STORAGE

Handling:

The product is FLAMMABLE. Keep away from sources of ignition – NO SMOKING. Avoid contact with eyes and skin, and inhalation of fumes. Use with adequate ventilation, Vapours may form explosive mixture with air. Wash hands before eating, drinking, chewing gum, smoking or using the toilet. Operators should change and wash clothing daily. Remove clothing immediately if the insecticide gets inside. Then wash skin thoroughly using a non-abrasive soap and put on clean clothing. Do not apply directly to areas where surface water is present, or to intertidal areas below the mean high water mark. Water used to clean equipment must be disposed of correctly to avoid contamination.

Storage:

Keep under lock and key and out of reach of unauthorised persons, children and animals. **Store in a place accessible by authorized persons only.** Store in its original labeled container in isolated, dry, cool and well-ventilated area (0-30 °C). Keep away from direct sunlight. Protect against frost. Not to be stored next to foodstuffs and water supplies. Local regulations should be complied with.



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8. EXPOSURE CONTROL / PERSONAL PROTECTION

Engineering control measures:

It is essential to provide adequate ventilation. Ensure that control systems are properly designed and maintained. Comply with occupational safety, environmental, fire and other applicable regulations. If engineering controls and work practices are not effective in controlling exposure to this material, then wear suitable personal protective equipment including approved respiratory protection.

PERSONAL PROTECTIVE EQUIPMENT:

Respirator:

An approved respirator suitable for protection from dusts and mists of pesticides is required. Limitations of respirator use specified by the approving agency and the manufacturer must be observed.

Clothing:

Employee must wear appropriate protective (impervious) clothing and equipment to prevent skin contact with the substance.

Gloves:

Employee must wear appropriate synthetic protective gloves to prevent contact with this substance.

Eye protection:

The use of safety goggles is recommended.

Emergency eye wash: Where there is any possibility that an employee's eyes may be exposed to this substance, the employer should provide an eye wash fountain or appropriate alternative within the immediate work area for emergency use.

Hygiene measures:

When using, do not eat, drink or smoke. Remove soiled clothing immediately. Remove soaked clothing immediately. Clean hands and face at work intervals and after work. Work in an adequately ventilated room.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:

Very light straw coloured emulsifiable concentrate.

Odour:

Slight odour.

Flammability:

Flammable

Flash point:

42 °C

Corrosiveness:

Non-corrosive to metals

Solubility:

Emulsifiable with water

Stability:

Stable on exposure to air and sunlight.

Degradation:

The microbial degradation for deltamethrin in soil is within 1 to 2 weeks.

10. STABILITY AND REACTIVITY

Storage stability:

Stable for up to 2 years under normal warehouse conditions.

Conditions to avoid:

Extreme temperatures and direct sunlight.

Materials to avoid:

None

Hazardous reactions:

No hazardous reactions when stored and handled according to prescribed instructions. Stable under recommended storage conditions.

11. TOXICOLOGICAL INFORMATION

Data as for active ingredient.

Deltamethrin:

Acute oral LD₅₀ : >2000 mg/kg (rat)

Acute dermal LD₅₀ : > 2000 mg/kg (rat) **Acute**

Inhalation LC₅₀ : >2.2 mg/l of air over 4 hours (rats).

Data as for active ingredient.

Piperonyl Butoxide:

Acute oral LD₅₀ : 7500 mg/kg (rat)

Acute dermal LD₅₀ : > 7950 mg/kg (rat)

Acute Inhalation LC₅₀ : 5.9 mg/l (rat)

12. ECOLOGICAL INFORMATION

DELTA METHRIN:

ECOTOXICOLOGY:

Data as for active ingredient.

Birds:

Deltamethrin:

Acute oral LD₅₀ : >4640 mg/kg (mallard duck).

Piperonyl Butoxide:

Acute oral LD₅₀ : > 2250 mg/kg

Fish:

Deltamethrin:

Deltamethrin is highly toxic to fish under laboratory conditions, but is not toxic to fish under natural conditions. Deltamethrin had an impact on aquatic herbivorous insects.

This impact led to an increase of algae. Crustacea may be affected.



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LC₅₀ (96 hr): 0.91 µg/ℓ (rainbow trout).

Piperonyl Butoxide:

LC₅₀ (24 hr): 5.3 mg /ℓ (carp)

Daphnia:

Deltamethrin:

Toxic to *Daphnia magna*.

LC₅₀ (48 h): 0.35 µg /ℓ.

Piperonyl Butoxide

LC₅₀ (24 h): 2.95 mg/ℓ.

Bees:

Deltamethrin:

Toxic to bees

LD⁵⁰(oral): 79 ng/bee (contact).

Piperonyl Butoxide:

LD⁵⁰(oral): > 25 µg/bee

Deltamethrin:

Earthworms(LC₅₀):

28.57 mg.kg soil.

Degradability:

Deltamethrin undergoes microbial degradation within 1-2 weeks. There is strong adsorption by soil colloids and no risk of leaching.

13. DISPOSAL CONSIDERATIONS

Pesticide disposal:

Contaminated absorbents, surplus product, etc., should be burned in a high- temperature incinerator (> 1000 °C) or buried in approved landfill. Hydrolysis under alkaline conditions is a suitable method to dispose of small quantities of the product. Before disposal of the resultant waste, the material must be analyzed to ensure that the active ingredient has been degraded to a safe level. Never pour untreated waste or surplus products into public sewers or where there is any danger of run-off or seepage into water systems. Comply with local legislation applying to waste disposal.

Package product wastes:

Emptied containers retain vapours and product residues. Observe all labelled safeguards until container is destroyed. Combustible containers should be disposed of in pesticide incinerators. Non-combustible containers must first be triple rinsed with water, punctured and transported to a scrap metal facility for disposal.

14. TRANSPORT INFORMATION

UN NUMBER: 1993

Proper shipping name:

FLAMMABLE liquid, N.O.S

Packaging group: III

Class: 3

Declaration for land shipment:

1993 Flammable Liquid, N.O.S

Declaration for sea shipment:

1993 Flammable Liquid, N.O.S

Declaration for shipment by air:

1993 Flammable Liquid, N.O.S

15. REGULATORY INFORMATION

Risk phrase(s): R23/25, 36/37/38, 51, 55, 57

Safety phrases: S2, 3, 13, 20/21, 28, 36

National Legislation:

In accordance with the South African National Road Traffic Act, 1996 (Act 93 of 1996), the Fire Brigade Act, 1987 (Act 99 of 1987) and the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993)

16. OTHER INFORMATION

Compiled by: Danie Fourie

All information and instructions provided in this Material Safety Data Sheet (MSDS) are based on the current state of scientific and technical knowledge at the date indicated on the present MSDS and are presented in good faith and believed to be correct. This information applies to the PRODUCT AS SUCH. In case of new formulations or mixes, it is necessary to ascertain that a new danger will not appear.

It is the responsibility of persons in receipt of this MSDS to ensure that the information contained herein is properly read and understood by all people who may use, handle, dispose or in any way come in contact with the product. If the recipient subsequently produces formulations(s) containing this product, it is the recipients sole responsibility to ensure the transfer of all relevant information from this MSDS to their own MSDS.

REFERENCES

- Applicable own physical and chemical studies.
- *The Pesticide Manual*; Thirteenth Edition; Editor, Clive Tomlin; Crop Protection Publications, 2003.
- ECB-ESIS (European chemical Information System).



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- Dangerous Goods Regulations, IATA, 46th Edition, Effective 1 January 2005
- Agrevo, Esbiothrin MSDS, 08/01/1998.
- SABS 0265:1999

END OF MSDS.