

UNIVERSAL DELTA-THRIN 25EC

MATERIAL SAFETY DATA SHEET

1. PRODUCT & COMPANY IDENTIFICATION

Product Name: DELTA-THRIN 25EC
 Insecticide
UN No.: 3351
Supplier: Universal Crop Protection (Pty) Ltd.
Co. Reg. No.: 1983/008184/07
 PO Box 801,
 Kempton Park, 1620, South Africa
Telephone: (011) 396 2233
Fax: (011) 396 4666
Website: www.villacrop.co.za

Emergency telephone numbers:

24 Hr Transport / Spill emergency no:

Envirosure. +27 31 205 4918
 (Hazcall24) +27 86 044 4411
 (Client: Villa Crop Protection)
 Griffon Poison Information Centre +27 82 446 8946
 (Client: Villa Crop Protection)

Poisoning Emergency telephone numbers:

Griffon Poison Information Centre +27 82 446 8946
 Poisons Information Centre +27 861 555 777

Villa Crop Protection Emergency number:

National Safety, Health and Environmental Manager:
 +27 63 698 0668

2. COMPOSITION/INFORMATION ON INGREDIENTS

Common Name: Deltamethrin
Chemical Name: (S)-alpha-cyano-3-phenoxybenzyl (1R, 3R)-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylate
Roth: (S)-alpha-cyano-3-phenoxybenzyl (1R)-cis-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylate (IUPAC)
CAS No.: 52918-63-5
Chemical family: pyrethroid
Chemical formula: C₂₂H₁₉Br₂NO₃
Molecular weight: 505.2
Use: Non-systemic insecticide with stomach and contact action. Prevents the sodium channels from functioning, so that no transmission of nerve impulses can take place.
Formulation: Deltamethrin 25 g/l Emulsifiable Concentrate
Hazardous ingredients: Deltamethrin
Symbol: F, Xn, Irritating
Indication of danger: Flammable, Harmful if swallowed

3. HAZARD IDENTIFICATION

Likely routes of exposure:

Skin: Irritating to the skin. Harmful if absorbed through skin.

Eye: Severe irritant to the eyes.

Inhalation: Harmful if inhaled. Avoid inhalation.

Swallowed: Data suggests the product is harmful if swallowed.

4. FIRST AID MEASURES AND PRECAUTIONS

Irritating to the skin. Harmful if absorbed through the skin. Expose to the skin can induce burning, itching or tingling sensations, typically in the face, and less frequently in other regions of the skin and readily disappear within several hours or 1 day after exposure. Sweating and washing with warm water can exacerbate these abnormal sensations.

Nasal discharge and a scratchy throat from inhalation, ataxia, urinary incontinence, convulsions, nervous irritability and tremors may also appear.

Symptoms of poisoning include dizziness, headache, nausea, fatigue, listlessness, vomiting and increased stomach secretion, muscular fasciculation of limbs, unconsciousness, convulsions and coma (very high doses).

Inhalation: If vapours or mists have been inhaled, and irritation has developed, remove the source of contamination or move victim to fresh air. The patient should be kept under observation and obtain medical attention if irritation persists.

Skin contact: Remove contaminated clothing, shoes and leather goods. Wash skin gently and thoroughly with cold water and non-abrasive soap. Application of olive oil to the affected area will afford prompt relief. After the affected area is washed with soap and water, dry off and apply olive oil.

Eye contact: Immediately flush eyes with a stream of clean water for at least 20 minutes, holding the eyelid(s) open. Obtain medical attention if irritation persists.

Ingestion: Do not induce vomiting. Do not give anything by mouth. Obtain medical attention. If the person is alert, rinse mouth thoroughly with water.

Advice on treatment: There is no specific antidote available.

In cases of ingestion, consider gastric lavage with water, or 5 % sodium bicarbonate solution. Treatment should be symptomatic. Convulsions should be treated with anti-convulsants. Vomiting may be induced by using Ipecac Syrup.

Over-exposure may cause local irritation of the skin (burning sensation on the face and elsewhere) and

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irritation of the respiratory tract causing rhinorrhea, chest tightness or dyspnea.

5. FIRE FIGHTING MEASURES

Fire and explosion hazard:

Flash point: 30.5 °C.

This material is highly flammable. Combustible.

Extinguishing agents:

Extinguish 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. Use as little water as possible. Use spray or fog. Solid stream may cause spreading. Contain water used for fire fighting for later disposal.

Firefighting: Remove spectators from surrounding area. Remove container from fire area if possible. Contain fire control agents for later disposal. Use a recommended extinguishing agent for the type of surrounding fire. Avoid inhaling hazardous vapours and fumes from burning materials. Keep upwind.

Personal protective equipment: Fire may produce irritating or poisonous vapours (toxic fumes of carbon oxides and nitrogen oxides), mists or other products of combustion. Fire fighters and others that may be exposed should wear full protective clothing and self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES (SPILLAGE)

Personal precautions: Avoid contact with skin and eyes. Do not breathe in spray or fumes. For personal protection see Section 8.

Environmental precautions: Do not allow entering drains or watercourses. Spillage or uncontrolled discharges into water courses (or public waters) to be reported immediately to the Police and to the Department of Water/Environmental Affairs.

Occupational spill: Remove all sources of flames and sparks. For small liquid spills, soak up with lime, damp earth or sand, or other non-combustible absorbent material and place into containers for later disposal. For large liquid spills, contain the liquid for later disposal. In situations where product comes in contact with water, contain contaminated water for later disposal. Do not flush spilled material into drains. Keep spectators away.

7. HANDLING AND STORAGE REQUIREMENTS

Handling: Do not use near source of sparks or open flame. Harmful by skin or eye contact, inhalation or ingestion. Avoid contact with eyes and skin, and inhalation of spray and vapour. Use with adequate ventilation. 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: Do not store near sources of sparks, flame or heat. Keep under lock and key and out of reach of unauthorised persons, children and animals. Store in its original labelled container in isolated, dry, cool and well-ventilated area. Not to be stored next to foodstuffs and water supplies. Local regulations should be complied with.

8. EXPOSURE CONTROL / PERSONAL PROTECTION

It is essential to provide adequate ventilation. The measures appropriate for a particular work site depend on how this material is used and on the extent of exposure. Ensure that control systems are properly designed and maintained. Comply with occupational safety, environmental, fire, and other applicable regulations.

PERSONAL PROTECTIVE EQUIPMENT:

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.

Respirator: An approved respirator suitable for protection from mists of pesticides is adequate. Limitations of respirator use specified by the approved agency and the manufacturer must be observed.

Clothing: Employee must wear appropriate protective (impervious) clothing and equipment to prevent repeated or prolonged skin contact with this 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 eyewash: 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.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Colourless homogeneous liquid with chemical odour.

Flammability: Flammable

Flash point: 30.5 °C (closed cup)

Solubility: Forms an emulsion with water.

pH: 5.8 (1% m/v solution).

Density: 0.886 g/ml @ 20 °C.

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Corrosive: Corrosive.

10. STABILITY AND REACTIVITY

Stability: Chemically and thermally stable. Stable under normal storage conditions. Stable in neutral and weak acidic media (optimum is pH 5 to 8). The product is stable in light and water.
Incompatibility: Compatible with many insecticides, fungicides and acaricides, but incompatible with alkaline substances.

11. TOXICOLOGICAL INFORMATION

Acute oral LD₅₀:
 > 430 mg/kg in rats (calculated for the formulation)
(technical = 135 g/kg in rats)
Acute dermal LD₅₀:
 > 2000 mg/kg in rats (calculated for the formulation)
(technical = > 2000 mg/kg in rats)
Inhalation:
Technical = 2,2 (4 hours, rats)
Acute skin irritation: Mild irritant, may cause skin sensations.
Acute eye irritation: Severe.
Dermal sensitisation: Mild-Sensitizer. May cause sensitisation during over exposure.
Mutagenicity: Studies indicate that **Deltamethrin** is non-mutagenic by Ames bacterial reverse mutation assay.
ADI: 0.01 mg/kg b.w (JMPR, 1982).

12. ECOLOGICAL INFORMATION

Degradability: Rats: Elimination of the compound occurs within 2 to 4 days of administration. The phenyl ring is hydroxylated, the ester bond hydrolysed and the acid moiety is eliminated as the glucuronide and glycine conjugate.
Plants: no uptake through the leaves and roots, is not systemic. No major metabolites except in oily crops, where trans-deltamethrin is part of the residue definition.
Soil: **Deltamethrin** undergoes microbial degradation within 1 to 2 weeks. Strong absorption by soil colloids occurs and no risk of leaching.
ECOTOXICOLOGY: Toxic to fish and to bees in laboratory tests. But do not represent a significant hazard to fish, bees and aquatic fauna at normal rate under field conditions.
Birds: Moderately toxic to birds.
 Oral LD₅₀: Mallard ducks: > 4640 mg/kg
 LC₅₀ (8 day diet): Quail: > 5620 mg/kg diet
 Mallard ducks: > 8039 mg/kg diet
Fish: Toxic to fish. However, not toxic to fish under normal application conditions.
 LC₅₀ (96 hours): Rainbow trout: 0.91 µg/ℓ

Bluegill sunfish: 1.4 µg/ℓ

Daphnia:
 LC₅₀ (48 hours): *Daphnia magna*: 3.5 µg/ℓ
 EC₅₀ (24 hours): 4.15 µg/ℓ
Bees: Toxic to bees. However, no hazard to bees under normal application conditions.
 LD₅₀ (oral): 79 ng/bee
 LC₅₀ (contact): 51 ng/bee
Earthworm:
 LC₅₀ (14 days): 28.57 mg/kg soil

13. DISPOSAL CONSIDERATION

Pesticide and container disposal: Open dumping or burning of this pesticide is prohibited. Never pour untreated waste or surplus products into public sewers or where there is any danger of run-off or seepage into water systems. Do not contaminate rivers, dams or any other water sources with the product or used containers. Emptied containers retain vapour and product residues. Observe all labelled safeguards until container is destroyed.
TRIPLE RINSE empty containers in the following manner. Invert the empty container over the spray or mixing tank and allow draining for at least 30 seconds after the flow has slowed down to a drip. Thereafter rinse the container three times with a volume of water equal to a minimum of a third of that of the container. Add the rinsing to the contents of the spray tank before destroying the container in the prescribed manner.
 Do not re-use the empty container for any other purpose but destroy it by perforation and flattening and bury in an approved dumpsite. Prevent contamination of food, feedstuffs, drinking water and eating utensils.

14. TRANSPORT INFORMATION

UN NUMBER: 3351
Road Transport ADR/RID:
 Class: 6.1
 Subsidiary Group: 3.3
 Packaging group: III
 Shipping name: Pyrethroid pesticide, liquid, Toxic, **Flammable**, (Deltamethrin 25 g/ℓ)
Maritime Transport IMDG/IMO:
 Class: 6.1
 Subsidiary Group: 3.3
 Packing group: III
 Shipping name: Pyrethroid pesticide, liquid, Toxic, **Flammable** (Deltamethrin 25 g/ℓ)
Considered a marine pollutant.

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15. REGULATORY INFORMATION

Symbol: F, Xn, Xi
Indication of danger: Flammable, Harmful, Irritating substance

Risk phrase(s):
 R 11 **Highly Flammable**
 R 20/22 Harmful by inhalation and if swallowed.
 R 36/37 Irritating to eyes and respiratory system.
 R 43 May cause sensitisation by skin contact.
 R 51 Toxic to aquatic organisms.
 R 57 Toxic to bees.

Safety phrases:
 S 1/2 Keep locked up and out of reach children.
 S 13 Keep away from food, drink and animal feeding stuffs.
 S 16 Keep away from sources of ignition – no smoking.
 S 23 Do not breathe vapour/spray.
 S 24/25 Avoid contact with skin and eyes.
 S 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

16. OTHER INFORMATION

Packaging: Packed in 50 ml, 100 ml, 200 ml, 250 ml and 500 ml + 1, 5, 10, 20 and 25 litres fluorinated plastic containers and labelled according to South African regulations and guidelines.

Disclaimer: The information on this sheet is not a specification; it does not guarantee specific properties. The information is intended to provide general guidance as to health and safety based upon our knowledge of the handling, storage use of the product. It is not applicable to unusual or non-standard uses of the product nor where instructions or recommendations are not followed. All information is given in good faith but without guarantee in respect of accuracy, and no responsibility is accepted for errors and omissions or the consequence thereof.

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For detailed information on revisions, contact the Registration holder.