



# MATERIAL SAFETY DATA SHEET

## CYPERMETHRIN 200 EC

**Date Issued:** April 2014 and is valid for 3 years from this date.

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**Revision:** 5

**Print Date:** 3/10/14

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### 1. PRODUCT AND COMPANY IDENTIFICATION

**TRADE NAME:** CYPERMETHRIN 200 EC

**SUPPLIER:** EFEKTO

PO BOX 652147

BENMORE

2010

**TEL No.** 011 287 5700

**EMERGENCY TELEPHONE NUMBERS:**

**SPILLAGES:** 083 1233 911

**Fax:** 086 685 3129

**POISONINGS:**

**National Poison Centre** 021-9386084 (office hours).

021-9316129 (after hours).

082 446 8946

**Use:** Non-systemic pyrethroid insecticide with contact and stomach action.

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### 2. HAZARDS IDENTIFICATION

**Environment:**

- Flammable.
- Toxic to aquatic organisms.
- Irritating to eyes and skin.
- Harmful.

**Likely routes of exposure:**

Skin and eye contact, ingestion and inhalation.

**Biological hazards:**

Skin and eye contact, ingestion and inhalation.

**Eye contact:**

The product may cause mild eye irritation.

**Skin contact:**

The product may cause moderate irritation.

**Ingestion:**

Harmful if ingested. See point 4 for symptoms.

**Inhalation:**

Harmful by inhalation. See point 4 for symptoms.

**Reproductive hazard:** See section 11.



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**Carcinogenicity:** See section 11.

**Mutagenicity:** See section 11.

**Neurotoxicity:** See section 11.

**Symbols:** Xn, Xi; N  
**Risk-Phrase(s):** R10, R20/22, R37, R 50/53, R 57  
**UN No.:** 3351  
**Class:** 6.1+3

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### Active ingredients:

Active ingredients.	CAS No.:	EC No.:
Cypermethrin 200 g/l	52315-07-8	257-842-9
Emulsifiers	Trade secret	-
Solvent Balance	Trade secret	-

**Chemical Name:** (RS)- $\alpha$ -cyano-3-phenoxybenzyl(1RS,3RS;1RS,3SR)-3-(2,2 dichlorovinyl)-2,2-dimethylcyclopropanecarboxylate (IUPAC)

**Chemical Family:** Pyrethroid

**Chemical Formula:** C<sub>22</sub>H<sub>19</sub>Cl<sub>2</sub>NO<sub>3</sub>

**NIOSH/RTECS No.:** GZ1250000

### 4. FIRST-AID MEASURES

**Symptoms of high dermal exposure:** includes numbness, 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. Nasal discharge and a scratchy throat from inhalation, ataxia, urinary incontinence, convulsions, nervous irritability and tremors may also appear.

Sweating and washing with warm water can exacerbate these abnormal sensations. Transient red papules, congestion and edema of the skin are occasionally seen.

**Inhalation:**

Remove the source of contamination or move victim to fresh air. The patient should be kept under observation and transported to a health center if necessary.

**Skin contact:**

Remove contaminated clothing, shoes and leather goods. Wash skin gently and thoroughly with cold water and non-abrasive soap.

**Eye contact:**

Immediately flush eyes with a stream of clean water for at least 20 minutes, holding the eyelid(s) open.

**Ingestion:**



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If only small amounts have been ingested, or if treatment has been delayed, oral administration of activated charcoal and cathartic probably represents optimal management

**Advice on treatment:**

There is no specific antidote available. Treat symptomatically and supportive.

**Note:** Occupational acute pyrethroid poisoning has often occurred in spray men working in the fields in summer. Therefore heatstroke, respiratory infection, and food poisoning should be cautiously differentiated. Care should be taken not to misdiagnose cases of acute pyrethroid poisoning by ingestion as acute organophosphorous poisoning, as the smell of pyrethroids is somewhat similar to the organophosphorous pesticides, and pulmonary edema can occur in severely poisoned patients of both kinds of poisoning. To differentiate these two kinds of pesticide poisoning, the exposure history is most important.

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### 5. FIRE-FIGHTING MEASURES

**Fire and explosion hazard:**

Product is highly flammable due to the solvent (xylene) content.

**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 firefighting 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. Water can be used to cool unaffected containers but must be contained for later disposal. Avoid inhaling hazardous vapours. Keep upwind.

**Personal protective equipment:**

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

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### 6. ACCIDENTAL RELEASE MEASURES

**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 to enter drains or water courses. When the product contaminates public waters, inform appropriate authorities immediately in accordance with local regulations.

**Occupational spill:**

Remove all sources of flames and sparks. For small liquid spills, soak up with lime, damp earth or sand, or other noncombustible 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.

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### 7. HANDLING AND STORAGE



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**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 labeled 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.

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### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Occupational exposure limits:**

ACGIH-TLV: 5 mg/m<sup>3</sup>

**Engineering control measures:**

It is essential to provide adequate ventilation. The measures appropriate for a particular worksite 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. 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 adequate. 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 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 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.

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### 9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance:** Liquid  
**Color:** Light amber.  
**Odour:** Aromatic.  
**Flammability:** Flammable.



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<b>Explosive properties:</b>	Not explosive.
<b>Flash point:</b>	23,0 °C (Tag Closed Cup method).
<b>Corrosive properties:</b>	Not corrosive.
<b>pH:</b>	5,5 at 24 °C
<b>Density:</b>	0.883 g/ml at 20 °C
<b>Solubility in water:</b>	This formulation forms an emulsion in water.

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### 10. STABILITY AND REACTIVITY

**Storage stability:**

Stable for up to 2 years under normal warehouse and field conditions.

The product is stable in light and water (i.e. considered stable in spraying mix over a 24 hour period).

**Incompatibility:**

Compatible with many insecticides, fungicides and acaricides, but incompatible with alkaline substances. The product should therefore not be used if the water has high pH values. A compatibility test is required before using with other products. Cypermethrin formulations are not compatible with several adjuvants, oils, seaweed extracts, amitraz, dodine, prothiofos and vamidothion. Do not physically mix concentrate directly with other herbicides or pesticide concentrates; always dilute first.

**Thermal decomposition:**

Toxic fumes of hydrogen cyanide, chlorine, and oxides of nitrogen and carbon are produced when the product decomposes on heating.

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### 11. TOXICOLOGICAL INFORMATION

**DATA AS FOR 5 EC FORMULATION.**

**Acute oral LD<sub>50</sub> :** > 1000 mg/kg in rats.

**Acute dermal LD<sub>50</sub> :** >2000 mg/kg in rats.

**Acute inhalation LC<sub>50</sub> :**

*(Data for technical material)* > 2.5 mg/ℓ of air over 4 hours (rats).

**DATA FOR 5 EC FORMULATION**

**Acute inhalation LC<sub>50</sub> :** 12.35 mg/l (1 h) (rat)

**Acute skin irritation:** The product may cause slight skin irritation.

**Acute eye irritation:** The product is a mild irritant.

**Dermal sensitisation:** The product is a mild sensitizer.

**Carcinogenicity:** EPA has classified Cypermethrin as a possible human carcinogen, because available information is inconclusive.

**Teratogenicity:** Studies did not detect any teratogenic effects.

**Mutagenicity:** Cypermethrin is not mutagenic.

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### 12. ECOLOGICAL INFORMATION



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**Data for technical material except as is indicated.**

**ECOTOXICOLOGY:**

**Birds:**

Cypermethrin is practically non-toxic to birds.

Acute oral LD<sub>50</sub>: > 10 000 mg/kg (mallard ducks).

> 2 000 mg/kg (chickens).

**Fish :**

Highly toxic to fish and aquatic invertebrates.

LC<sub>50</sub> (96 hr): 2,9 µg/L (*Rainbow Trout*).[5EC]

LC<sub>50</sub> (96 hr): 2,37µg/L (sheephead minnow).

**Daphnia:**

Very toxic to *Daphnia magna*.

LC<sub>50</sub>: 0,0002mg/litre.

LC<sub>50</sub>: >0,1µg/l [5% EC]

**Bees:**

Highly toxic to bees in laboratory tests, but field applications at recommended dosages do not put hives at risk.

LD<sub>50</sub> (oral): 0.035 µg/bee

LD<sub>50</sub> (topical): 0.02 µg/bee.

**Earthworms:**

Earthworms are resistant to the product. Solvents used in the formulation may pose a hazard to earthworms.

**Soil micro-organisms:**

Soil micro-organisms are generally resistant to the product **Degradability:**

Biological degradation is rapid and residues do not accumulate in the environment. In soil, hydrolysis with cleavage of the ester bond occurs within 2-4 weeks. This is the primary route of degradation, giving rise to two main metabolites, namely cyclopropane and phenoxybenzyl moieties. Photodegradation plays a minimal role in the breakdown of the product. In river water, rapid degradation occurs, with a half-life of approximately 5 days.

**Mobility:**

The product has low mobility as it strongly adsorbs to soil.

**Accumulation:**

With recommended application rates, it is unlikely that cypermethrin or its degradation products will attain levels of environmental significance. Cypermethrin is moderately persistent in soil.

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### 13. DISPOSAL CONSIDERATIONS

**Pesticide disposal:**

Contaminated absorbents, surplus product, etc., should be burned in a high- temperature incinerator (> 1000 °C) with effluent gas scrubbing. Where no incinerator is available, hydrolysis under alkaline conditions (pH 12 or above) is a suitable method to dispose of small quantities of the product. Before disposal of the resultant waste, the material must be analysed 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 vapour and product residues. Observe all labelled safeguards until container is destroyed. Combustible containers should be disposed of in pesticide incinerators. Non-combustible containers must be punctured and transported to a scrap metal facility for recycling or disposal.



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### 14. TRANSPORT INFORMATION

UN NUMBER: 3351  
ADR/RID:  
Proper shipping name: Pyrethroid Pesticide, liquid, toxic, flammable, n.o.s (Cypermethrin 20%)  
flashpoint  $\geq 23$  ° C  
Classification Code: TF2  
Class: 6.1  
Label: 6.1+3

#### IMDG/IMO

Shipping name: Pyrethroid Pesticide, liquid, toxic, flammable, n.o.s (Cypermethrin 20 %)  
flashpoint  $\geq 23$  ° C  
Packaging group: III  
Label of class: 6.1 MARINE POLLUTANT  
Subsidiary risk: 3  
AIR/IATA  
Shipping name: Pyrethroid Pesticide, liquid, toxic, flammable, n.o.s(Cypermethrin 20%),  
flashpoint  $\geq 23$  ° C  
Class: 6.1  
Subsidiary Risk: 3  
Hazard Label: Toxic & Flammable liquid  
Packaging Group: III  
Passenger Aircraft 611 (max 2 L) Y611 (max 60 L)  
Cargo Aircraft 618 (max 220L)

**Tremcard number:** 61GTF2-III

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### 15. REGULATORY INFORMATION

**Symbol :** Xn, Xi; N  
**Indication of danger:** Harmful, Irritant, dangerous to the environment.

#### Risk phrase(s):

**R10** Flammable  
**R20/22** Harmful by inhalation or if swallowed  
**R 37** Irritating to respiratory system.  
**R 50/53** Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment..  
**R 57** Toxic to bees.

#### Safety phrases:

**S 2** Keep out of reach children.



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<b>S 24/25</b>	Avoid contact with skin and eyes.
<b>S 36/37/39</b>	Wear suitable protective clothing, gloves and eye/face protection.
<b>S60</b>	This material and its container must be disposed of as hazardous waste.
<b>S61</b>	Avoid release to the environment. Refer to special instructions/Safety data sheets.

**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)

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### 16. OTHER INFORMATION

**Compiled by:** Danie Fourie

#### Regulatory Information

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

- ECB-ESIS (European chemical Information System).
- EXTOXNET PIP. Revised June 1996. Primary files maintained and archived at Oregon State University
- Own data.
- The Pesticide Manual; Thirteenth Edition; Editor Clive Tomlin; Crop Protection Publications, 2003.
- ADR 2011, Part 3.
- IMDG Code, 2005 Edition, Vol. 2.
- IATA Dangerous goods regulations, Effective 1 January 2011

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**END OF MSDS.**