KOMBAT CYPERMETHRIN

Version 1.2
Revision Date December 2016

1. IDENTIFICATION OF SUBSTANCE / PREPARATION AND COMPANY UNDERTAKING:

Harmful

Dangerous for the environment

PRODUCT INFORMATION

Product Name	:	KOMBAT CYPERMETHRIN
Design Code	:	
Registration No.	:	L7014, Act No. 36 of 1947
Use	:	Insecticide
Company	:	Kombat (Pty) Ltd 39 Dr. Gordon Road Greytown 3250
Telephone	:	+27-33-417-1906/7

EMERGENCY TELEPHONE NUMBERS

SPILLAGES:

Emergency telephone: +27-82-446-8946 (all hours)

POISONING INCIDENTS:

Poison Information Centre of the Western Cape: +27-861-555-777 (all hours)
Griffon Poison Information Centre +27-82-446-8946 (all hours)
UFS Pharmacology/Toxicology information centre: +27-82-491-0160

2. HAZARD IDENTIFICATION

WHO Category II HARMFUL

Ingestion: Nausea, vomiting and abdominal pain commonly occur and develop within 10 to 60 minutes following ingestion.

Inhalation: Hypersensitivity reactions characterized by pneumonitis, cough, dyspnea, wheezing, chest pain, and bronchospasm may occur. Rare cases of respiratory failure and cardiopulmonary arrest have been reported.

Eyes: A stuffy, runny nose and scratchy throat following inhalational exposure may be noted.

Skin: Irritant and contact dermatitis may develop. Erythema which mimics sunburn has also been noted after prolonged repeated exposure.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Components contributing to hazard
Cypermethrin
IUPAC Name (RS)-alpha-cyano-3-phenoxybenzyl (1RS,3RS:1RS,3SR)-3-(2,2-dichlorovinyldimethylcyclopropanecarboxylate
CAS RN 52315-07-8
Concentration: Cypermethrin 200 g/kg
Inert ingredients : Petroleum distillates and adjuvants

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4. FIRST- AID MEASURES

Ingestion: If swallowed, DO NOT induce vomiting. Keep at rest. Call a poison information centre for advice. Treat symptomatically and supportively. Get prompt medical attention. Vomiting to be supervised by physician because of possible pulmonary damage by aspiration of solvent.

Inhalation: Immediately remove the affected victim from exposure to an area of fresh air. Administer artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device if breathing is stopped. Keep at rest. Call for prompt medical attention.

Eyes: Flush eyes with large amount of water for +- 15 minutes until irritation subsides. If irritation persists, get medical attention.

Skin: Remove grossly contaminated clothing, including shoes, and launder before reuse. Flush with large amount of water; use soap or detergent if available. Call for prompt medical attention if irritation or pain persists. Vitamin e topical application is highly effective in relieving paresthesias.

Note to physician: No specific antidote is known. In case of ingestion, carry out gastric lavage with care to prevent aspiration of solvent. Treat symptomatically.

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5. FIRE-FIGHTING MEASURES

Cypermethrin is not combustible. Fire may produce irritating, corrosive and/or toxic gases.
Flash Point: Not applicable
Auto-ignition temp: Does not auto-ignite
Flammability limits in air: Lower: N/A Upper: N/A
Firefighting media
CO_2, Foam, dry chemical or water spray to extinguish fire
Firefighting precaution
Firefighter must wear self-contained breathing apparatus, with full-face mask and full protective equipment.
Personal Precautions
Wear appropriate safety clothing and eye/face protection (see Section 8).

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6. ACCIDENTAL RELEASE MEASURES

Steps to be taken if material is released
Absorb or cover liquid with dry earth, sand or other non-combustible material and transfer to containers.
DO NOT GET WATER INSIDE CONTAINERS. Remove contaminated soil as much as possible

(shovel up and sweep up). Place in closed, labelled containers and store in a safe place to await proper disposal. Do not contaminate water while cleaning equipment or disposing of wastes. Persons performing this work should wear adequate personal protective equipment and clothing.

Cleaning of equipment

Wash with plenty of water. Do not contaminate water while cleaning equipment or disposing of wastes.

Additional Information

N/A

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7. HANDLING AND STORAGE

Handling

Use good personal hygiene. Do not consume or store food in the work area. Wash hands and exposed skin before eating, drinking or smoking and after work. Avoid eye and skin contact.

Storage

The formulation is stable if stored in an airtight container and free of moisture and high humidity. Keep out of reach of children. Do not contaminate water, food, or feed by storage or disposal. Keep from contact with fertilizers, herbicides, fungicides, and seeds during storage. Avoid breathing dust or spray mist. Avoid contact with skin, eyes, and clothing. Do not apply, drain, or flush equipment on or near desirable trees or other plants.

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8. EXPOSURE CONTROL / PERSONAL PROTECTION

Applicable Exposure Limits
ADI: 0.25 mg/kg/day
RfD: 0.05 mg/kg/day

Engineering Controls

Use only with adequate ventilation.
Good general ventilation should be sufficient for most conditions.
Local exhaust ventilation may be necessary for some operations.
Control airborne concentrations below the exposure guideline.

Respiratory Protection

When airborne exposure guidelines and/or comfort levels may be exceeded, use an approved air-purifying respirator. For emergency conditions, use an approved positive-pressure self-contained breathing apparatus.

Hand/Skin Protection

Use protective clothing impervious to this material.(Long-sleeved shirt and long pants. Rubber boots plus socks. Long rubber gloves). Selection of specific items will depend on operation.

Eye/Face Protection

Use safety glasses. Where contact with the liquid is likely, chemical goggles are recommended.

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9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Amber liquid.
Odour: Strong xylene odour.
Bulk density: 0.94 g/ml
Water solubility: Insoluble in water. Emulsifiable in water.

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10. STABILITY AND REACTIVITY

Chemical Stability
Store in well-closed containers at a temperature less than 40°C, preferably between 15-30°C. It is not compatible with spray oils, several adjuvants and some pesticides. Compatibility must be tested beforehand.

Conditions to Avoid
Avoid extremes of temperature. Avoid contact with strong oxidizers. Incompatible with lime and ordinary soaps because acids and alkalies speed up processes of hydrolysis.

Hazardous Decomposition Products
When heated to decomposition it emits toxic fumes of hydrogen cyanide, nitrogen oxides, hydrogen chloride.

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11. TOXICOLOGICAL INFORMATION (FORMULATION)

Acute Oral LD50 (male rat)
> 935 - 1630 mg/kg (1250 mg/kg in corn oil and 20 615 mg/kg in water).
Acute Dermal LD50
> 8000 mg/kg (rabbit)
Skin irritation
Moderate skin irritant.
Sensitisation
A weak skin sensitizer in animals (guinea pig) and may cause skin sensitization in humans.
Eye Irritation
Slight eye irritant.
Inhalation LC50
> 12.5 mg/l/4 HOURS (rat, formulation)
Other Information
Cypermethrin is **not teratogenic**.
Cypermethrin is **not mutagenic**, but tests with very high doses on mice caused a temporary increase in the number of bone marrow cells with micronuclei. Other tests for mutagenic effects in human, bacterial, and hamster cell cultures and in live mice have been negative.
EPA has classified cypermethrin as a **possible human carcinogen** because available information is inconclusive.

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12. ECOLOGICAL INFORMATION

Breakdown in soil and groundwater: Cypermethrin has a moderate persistence in soils. Under laboratory conditions, cypermethrin degrades more rapidly on sandy clay and sandy loam soils than on clay soils, and more rapidly in soils low in organic material. In aerobic conditions, its soil half-life is 4 days to 8 weeks. When applied to a sandy soil under laboratory conditions, its half-life was 2.5 weeks. Cypermethrin is more persistent under anaerobic conditions. It photodegrades rapidly with a half-life of 8 to 16 days. Cypermethrin is also subject to microbial degradation under aerobic conditions. Cypermethrin is not soluble in water and has a strong tendency to adsorb to soil particles. It is therefore unlikely to cause groundwater contamination.

Breakdown in water: In neutral or acid aqueous solution, cypermethrin hydrolyzes slowly, with hydrolysis being more rapid at pH 9 (basic solution). Under normal environmental temperatures and pH, cypermethrin is stable to hydrolysis with a half-life of greater than 50 days and to

photodegradation with a half-life of greater than 100 days. In pond waters and in laboratory degradation studies, pyrethroid concentrations decrease rapidly due to sorption to sediment, suspended particles and plants. Microbial degradation and photodegradation also occur.

Breakdown in vegetation: When applied to strawberry plants, 40% of the applied cypermethrin remained after one day, 12% remained after three days, and 0.5% remained after seven days, with a light rain occurring on day 3. When cypermethrin was applied to wheat, residues on the wheat were 4 pm immediately after spraying and declined to 0.2 ppm 27 days later. No cypermethrin was detected in the grain. Similar residue loss patterns have been observed on treated lettuce and celery crops.

GENERAL TOXICITY TO WILDLIFE AND FISH: (formulation)
Birds
Cypermethrin is practically non-toxic to birds.
Acute Oral LD50 > 23 200 mg/kg for mallard duck.
Oral dietary LC50 of > 100 000 ppm for bobwhite quail and mallard duck.
Fish
Cypermethrin is highly toxic to fish and aquatic invertebrates. Cypermethrin is metabolized and eliminated significantly more slowly by fish than by mammals or birds, which may explain this compound's higher toxicity in fish compared to other organisms. The half-lives for elimination of several pyrethroids by trout are all greater than 48 hours, while elimination half-lives in birds and mammals range from 6 to 12 hours. The bioconcentration factor for cypermethrin in rainbow trout was 1200 times the ambient water concentration, indicating that there is a moderate potential to accumulate in aquatic organisms. Elimination of half of the accumulated amount of the compound took nearly eight days. After 14 days 70 to 80% of the material had been eliminated from the organisms.
LC50 (96 hr) = > 0.041 mg/l for rainbow trout.
= > 0.009 mg/l for bluegill sunfish.
Daphnia
LC50 (48 hr) = 0.75 µg/l
Effects on other organisms
Cypermethrin is highly toxic to bees.

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13. DISPOSAL CONSIDERATIONS

Do not contaminate ponds, waterways or ditches with chemical or used container. Triple rinse containers, puncture and dispose of via a licensed plastics recycler. The preferred options are to send to licensed reclaimer or to permitted incinerators. Do not re-use container for any purpose.

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14. TRANSPORT INFORMATION

Proper Shipping Name: PESTICIDE, LIQUID, TOXIC, N.O.S.
UN NO: 1993
Hazard Class: 6.1
Packing Group: I
ERG 151

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15. REGULATORY INFORMATION

Risk Phrases :
R20/21/22. Harmful by inhalation, in contact with skin and if swallowed.
R 36. Irritating to eyes.
R43. May cause sensitization by skin contact.
Safety Phrases :
S 2. Keep out of reach of children.
S 37. Wear suitable gloves.

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16. OTHER INFORMATION

REFERENCES:
• Bitrad MSDS.
• Cornell University, cypermethrin
• SABS Dangerous Goods documentation
• Dangerous Goods Regulations, IATA,42nd Edition, Effective 1 January 2001.
• EXTOXNET
• BCPC – Pesticide Manual

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