KOMBAT CYPERMETHRIN

Registration No. L7014 – ACT 36 OF 1947

KOMBAT CYPERMETHRIN is an emulsifiable concentrate contact and stomach insecticide for agricultural use on crops as indicated.

COMPOSITION
Active Ingredient
Cypermethrin (pyrethroid) - 200g/l

USES AND BENEFITS

KOMBAT CYPERMETHRIN controls crop pests such as all bollworms, semi-looper, caterpillars of the diamond back moth and greater cabbage moth, thrips, pine emperor moth, willow tree emperor moth, weavils, army worm, crickets, lawn caterpillar, termites, stink bug, cut worm, mealie bug, Australian bug, flower beetles, lily borer, shield bugs and twig wilters, white fly, fruit fly, false codling moth, banded fruit weavel, stalkborer and wattle bagworm.

DIRECTIONS FOR USE

See “WARNINGS” on withholding periods i.e. period between last application and harvest of crop.

COMPATIBILITY:
- High pH spray mixtures may reduce the efficacy of KOMBAT CYPERMETHRIN. Thus do not mix KOMBAT CYPERMETHRIN with alkaline materials.
- KOMBAT CYPERMETHRIN is not compatible with spray oils, several adjuvants and some pesticides. The compatibility of KOMBAT CYPERMETHRIN with other products must be tested beforehand.
- KOMBAT CYPERMETHRIN is most stable at approximately pH4. If an acidifying agent is used to lower pH, it should be added first to the spray water. Molasses also acidifies the spray mixture and prevents evaporation of spray droplets. If molasses is added, a 10% for ground application, is recommended.

MIXING INSTRUCTIONS

1. Fill spray tank \( \frac{1}{4} \) to \( \frac{1}{2} \) full with water.
2. Measure the required KOMBAT CYPERMETHRIN into a bucket with water and stir the mixture.
3. Pour the mixture in the spray tank and fill up whilst stirring – also during application.
4. Do not leave spray mixture overnight.
## METHOD OF APPLICATION

<table>
<thead>
<tr>
<th>CROP/PEST</th>
<th>DOSAGE</th>
<th>DIRECTIONS OF APPLICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>APPLES AND Pears</strong>&lt;br&gt;Banded fruit weevil (Snout beetle)</td>
<td>10ml/100ℓ water 250 - 350ml/ha</td>
<td>HV: 2 500 - 3 500ℓ spray mix/ha&lt;br&gt;LV: Apply 1/4 - 1/8 of the spray mix volume as for HV application. Apply two sprays. The first at 75% petal fall and the second four weeks later. A third spray can be applied in mid-January to prevent late season damage. Initially this treatment will also control American bollworm and Codling moth.&lt;br&gt;NOTE: Toxic to bees. Apply the first spray at 75% petal drop. Repeat every 14 days in orchards where high infestation warrants intensive control or where pheromone traps dictate applications. Repeat every 21 days in orchards when low infestations are experienced.&lt;br&gt;NOTE: Toxic to bees. Apply as a corrective spray. Do not apply before 75% petal drop.&lt;br&gt;NOTE: Toxic to bees.</td>
</tr>
<tr>
<td>Codling moth, Leaf eaters</td>
<td>5ml/100ℓ water 125 - 175ml/ha</td>
<td></td>
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<tr>
<td>American bollworm</td>
<td>5ml/100ℓ water</td>
<td></td>
</tr>
<tr>
<td><strong>COTTON</strong>&lt;br&gt;All bollworms: i.e. American (<em>Helicoverpa</em>), Red and Spiny bollworm Stainers</td>
<td>Weekly spraying 75ml/100ℓ water</td>
<td>See Warning on resistance under “Warnings” above (rest of remarks follows and refers only to the weekly preventive dosage). In order to comply with the principles of pest management and integrated control measures, KOMBAT CYPERMETHRIN is intended to be used during the period of fruiting from peak flowering until boll split, e.g. approximately 10 - 22 weeks after plant emergence. KOMBAT CYPERMETHRIN is primarily intended for use as a preventative control measure against all bollworm larvae based on weekly scouting, or a regular spray programme applied at 7 day intervals. Normally a bollworm spray programme will commence at the beginning of flowering, i.e. about 6 weeks after emergence. From then until peak flowering use registered non-pyrethroid remedies. After boll split use as recommended on scouting data. Cotton plants older than 12 weeks after emergence is considered mature. PREVENTIVE: apply as determined by scouting for eggs i.e. for American bollworm an average of 0,5 eggs per plant; red bollworm an average of 0,25 eggs/plant; spiny bollworm when two or more larvae are found during scouting, after scouting 24 plants at random in lands up to 15ha in size. Scouting should be done at weekly intervals from flowering until boll split. Stainers will be controlled during regular applications for control of bollworm. Ground application: With boom and nozzles. Ensure thorough coverage of the plants. For plants smaller than 60cm apply 100ℓ spray mixture/ha. For taller plants increase the volume of</td>
</tr>
<tr>
<td>Pest</td>
<td>Recommended Dosage</td>
<td>Remarks</td>
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<td>-------------------------------</td>
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<td>-------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| All bollworms and Leaf eaters Semi-looper (*Plusia* and *Spodoptera*) | 75 or 150mℓ/ha, 87 or 175mℓ/ha, 175 or 350mℓ/ha | **Mistblower:** Use the lower dosage on cotton less than 60 cm high and the higher dosage rate on cotton taller than 60 cm. Do not use less than 150mℓ KOMBAT CYPERMETHRIN/ha on mature cotton.  
**Aerial application:** As for mistblower application, by applying 30ℓ water/ha.  
**CORRECTIVE:** Apply as corrective spray to control an established infestation, i.e. when more than 2 bollworms per 24 plants are found during scouting or when leaf eaters are found and damage to leaves is increasing. Later instar red bollworms established inside bolls might not be controlled successfully. Success of treatment can be related to application, density of crop foliage, stand and instar of caterpillars. Allow up to 4 days for Cypermethrin to achieve its full effect. A corrective application is to be considered an emergency measure and thereafter a regular programme must be resumed irrespective of the crop stage.  
**Ground application:** With boom and nozzles. Ensure thorough coverage of the plants. For plants smaller than 60cm apply 100ℓ spray mixture/ha. For taller plants increase volume of spray mixture/ha gradually to 200ℓ/ha for mature cotton. Do not use less than 500mℓ Cypermethrin/on mature cotton.  
**Mistblower:** Use the lower dosage on cotton less than 60 cm high and the higher dosage rate on cotton taller than 60 cm. Do not use less than 500 mℓ Cypermethrin on mature cotton.  
**Aerial application:** As for mistblower application, by applying 30ℓ water/ha.  
| **CRUCIFERAE** | **American bollworm** 10mℓ/10ℓ water | Ensure good wetting of the plant by adding a wetting agent. Commence spraying at the first signs of the pest and repeat sprays every 10-14 days. This treatment will suppress aphids in a programme spray.  
| **FORESTRY** | **Pine Emperor moth** 50mℓ/ha  
**Willow Tree Emperor moth** 100mℓ/ha | **Aerial application:** In 30ℓ water/ha. This caterpillar defoliates Pines, Eucalyptus en Proteas.  
**Aerial application:** In 30ℓ water/ha. This caterpillar defoliates Willows, Acacias, Poplars and Oaks.  
| **GRAPE VINES** | **Weevils** 10mℓ/10ℓ, 25 - 150mℓ/ha | HV: 250 – 1500ℓ spray mixture/ha  
Apply as a full cover application ensuring thorough coverage of all parts of the plant.  |
**Apply first spray when the first signs of movement and/or feeding of snout beetles are detected. Repeat within 21 - 28 days as necessary. The first occurrence of weevils varies from area to area but can be expected from mid-October to mid-November. NOTE: Toxic to bees.**

### Grazing

**Army worm**

- **150mℓ/ha**
- A pest of grasses only (veldt, grazing and grass crops). Apply when pest occurs. Ground or aerial application. Apply a minimum of 300ℓ/ha for ground application.

### Groundnuts en Beans

(Including soya beans)

**American bollworm**

- **150mℓ/ha**
- Commence application as soon as eggs or larvae are noticed on the plants. Repeat the application at 14 day intervals or as directed by inspection of the crop. **Ground application:** Apply not less than 200ℓ mix/ha.
  - **Aerial application:** Apply in 30ℓ water/ha.

### Lawns

**Crickets**

- **5mℓ/10ℓ water**
- Apply at the rate of 0,5ℓ spray mixture/10m² and/or pour 50mℓ of the mixture into each hole. Repeat when necessary.

**Lawn caterpillar**

- **5mℓ/10ℓ water**
- Apply when damage is noticed. Light full cover application. A damp sack left on the lawn overnight will reveal infestation when removed early in the morning.

**Northern harvester Termite and ants**

- **5mℓ/10ℓ water**
- Apply onto lawns at 5ℓ spray mixture/100m². Repeat application when activity is noticed again. Home garden only. In case of Northern harvester termite up to 30 days control may be expected.

**Army worm**

- **5mℓ/10ℓ water**
- Spray as an overall light cover onto the lawn.

### Peas

**American bollworm**

- **150mℓ/ha**
- **Ground application:** Apply in not less than 200ℓ water/ha.
  - **Aerial application:** Apply 30ℓ water/ha

**Lesser Army worm**

- Ground application in 300ℓ water/ha. Ground application: Full cover spray in 300ℓ water/ha.

### Lucerne

**Caterpillar**

- **75mℓ/ha**
- Aerial application: Apply in 30ℓ water/ha. Ground application: Full cover spray in 300ℓ water/ha.

### Macadamias

**Stink bug**

- **20mℓ/100ℓ water**
- Apply as high volume spray when the nuts are marble size (Oct./Nov.) Repeat 4 weeks later. A third application may be necessary 4 weeks after the second.

### Maize and Sweetcorn

**Cut worm**

- **0,33mℓ/100m row**
- **Row treatment:** Apply post emergence to the crop as soon as pest is noticed in at least 3ℓ water/100m row. Apply in a band at least 30cm wide over the row. Ensure that soil is moist right to the surface at time of application. Later infestation may require a second application.

**Cut worm**

- **100mℓ/ha**
- **Overall application:** Ground application in 300ℓ water/ha.

**American bollworm**

- **100mℓ/ha**
- **Aerial application:** In 30ℓ water/ha. Soil must be moist up to surface.

**Stalk borer** *(Busseola fusca)*

- **1,5mℓ/100m row**
- **Ground application:** If the row width allows ground application use not less than 3ℓ water/ 100 m. Direct nozzles towards the heads.

**Pink Stalk borer**

- **1,5mℓ/100m row**
- **Ground application:** If the row width allows ground application use not less than 3ℓ water/ 100 m. Direct nozzles towards the heads.
<table>
<thead>
<tr>
<th>ORNAMENTALS AND FLOWERS</th>
<th>1 mℓ/10 ℓ water</th>
<th>Apply when pest is noticed. Repeat when necessary. Full cover application. Only for home garden.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aphids</td>
<td>1 mℓ/10 ℓ water</td>
<td>Full cover application. Only for home garden. Ant control will materially assist with control.</td>
</tr>
<tr>
<td>Mealy bug, Australian bug</td>
<td>1 mℓ/10 ℓ water</td>
<td>Direct contact spray.</td>
</tr>
<tr>
<td>Flower beetles</td>
<td>1 mℓ/10 ℓ water</td>
<td>Apply regularly when the pest is about.</td>
</tr>
<tr>
<td>Lily borer</td>
<td>1 mℓ/10 ℓ water</td>
<td>Apply by air in 30ℓ water/ha</td>
</tr>
<tr>
<td>Pine emperor moth, Caterpillars (eg. on Proteas)</td>
<td>50 mℓ/ha</td>
<td>Direct contact spraying in home garden only.</td>
</tr>
<tr>
<td>Shield bug and Twig wilters</td>
<td>1 mℓ/10 ℓ water</td>
<td>Full cover application. Pay particular attention to the underside of the leaves. Home garden use only.</td>
</tr>
<tr>
<td>White fly</td>
<td>1 mℓ/10 ℓ water</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PEACHES</th>
<th>10mℓ/100ℓ water 150 - 350 mℓ/ha</th>
<th>Full cover spray at 14 day intervals, beginning 8 weeks prior to harvest. In the summer rainfall region, application should commence not later than third week in December.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fruit flies</td>
<td>5mℓ/100ℓ water 125 - 175 mℓ/ha</td>
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</table>

**Aerial application:** Apply in 30 ℓ water/ha according to the directions above for ground application.

**Sweet corn:** Start spraying 3 weeks after planting and repeat with 10 - 14 day intervals until ears appear. Use in not less than 3 ℓ water/100 m row. Will suppress *Busseola fusca* stalk borer, American bollworm and leafhoppers.

**Early cultivars:** Full cover spray at 14 day intervals, beginning 6 weeks prior to harvest.

**Late cultivars:** Full cover spray at 14 day intervals beginning 8 weeks prior to harvest.
<table>
<thead>
<tr>
<th>Insect</th>
<th>Concentration</th>
<th>Application Type</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Codling moth</td>
<td>5ml/100lt water 125 - 175 ml/ha</td>
<td>Full cover spray at 75% petal drop. Repeat at 14 -21 day intervals, depending on level of infestation.</td>
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</tr>
<tr>
<td>American bollworm</td>
<td>5ml/100lt water 125 - 175 ml/ha</td>
<td>Full cover application from 75% petal drop or when pest is noticed.</td>
<td></td>
</tr>
<tr>
<td>Banded fruit weevil</td>
<td>10ml/100lt water 250 - 350ml/ha</td>
<td>Apply as soon as damage is noticed. Repeat 4 weeks later if necessary.</td>
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<tr>
<td>SORGHUM</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Cutworm</td>
<td>0,33 ml/100 m row 100 ml/ha</td>
<td><strong>Row treatment</strong>: Apply post emergence to the crop as soon as pest is noticed in at least 3lt water/ 100m row. Apply in a band at least 30 cm wide over the row. Ensure that soil is moist right to the surface at time of application. Later infestation may require a second application.</td>
<td></td>
</tr>
<tr>
<td>American bollworm</td>
<td>1,5 ml/100 m row 150 ml/ha</td>
<td><strong>Ground application</strong>: Direct application onto ears. Apply in not less than 2lt water/100m row. <strong>Aerial application</strong>: Apply according to the above conditions in 30lt water/ha.</td>
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</tr>
<tr>
<td>Stalk borer (Busseola fusca)</td>
<td>3,5 ml/100 m row 350 ml/ha</td>
<td><strong>Ground application</strong>: Apply in not less than 3lt/100m row. <strong>Aerial application</strong>: As for maize.</td>
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<tr>
<td>TOMATOES</td>
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<tr>
<td>American bollworm</td>
<td>15ml/100lt water 75 - 150ml/ha</td>
<td><strong>Ground application</strong>: Apply as a full cover spray at the first signs of an infestation. Repeat application every 7 - 10 days or as directed by inspection of the crop. <strong>High volume</strong>: Apply up to 500lt spray mixture/ha to plants up to 60cm high, and 1000lt/h or more to plants higher than 60cm e.g. trellised tomatoes. Do not use more than 150ml KOMBAT CYPERMETHRIN/ha. <strong>Mistblowers</strong>: Apply in 150 - 500lt water. Use the lower rate and volume for plants up to 60cm high and the higher rate and volume for plants higher than 60cm e.g. trellised tomatoes. Do not use more than 150ml KOMBAT CYPERMETHRIN/ha.</td>
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<tr>
<td>VARIOUS CROPS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cutworm</td>
<td>0,33ml/100m row 100ml/ha</td>
<td><strong>Row treatment</strong>: Apply only if the top 3cm of soil is moist. Post emergence over the row in 3lt water as a 30 cm wide band. Overall application in 300lt water/ha for ground application or aerial application in 30lt water/ha.</td>
<td></td>
</tr>
<tr>
<td>WATTEL PLANTATIONS</td>
<td></td>
<td></td>
<td>Wattle Bagworm 100ml/ha</td>
</tr>
</tbody>
</table>
WARNINGS AND PRECAUTIONS

WARNINGS:
- Handle with care.
- Poisonous if swallowed and moderately toxic by skin contact.
- May cause skin irritation.
- Toxic to fish and bees and moderately toxic to wild life.
- FLAMMABLE – Do not store or spray near open flames.
- Keep out of reach of children, uninformed persons and animals.
- Store away from food and feedstuff in a cool place.
- Re-entry: Do not enter treated areas within 1 day after application.
- IN CASE OF POISONING CALL A DOCTOR AND MAKE THIS LABEL AVAILABLE TO HIM.
- Aerial application: Notify all inhabitants of the immediate area to be sprayed and issue the necessary warnings. Do not spray over or allow drift contaminate water or adjacent area.

PRECAUTIONS:
- Wear a hat, face shield, cotton overalls and boots when applying spray mixture.
- When preparing the spray mixture wear a face shield, rubber gloves and boots.
- Avoid skin contact, and inhalation of the spray mist. Avoid eye splashes.
- Wash with soap and water immediately after accidental skin contact.
- Wash overalls daily.
- Do not eat, drink or smoke while using or before having washed hands or face.
- Rinse empty container three times with a volume of water equal to a minimum of 10% of that of the container. Add the rinsing to the contents of the spray tank before recycling the container in the prescribed manner.
- Destroy empty container by perforation and dispose it in a safe and responsible way.
- Do not re-use for any other purpose.
- Clean applicator after use and dispose of wash water where it will not contaminate crops, grazing, rivers or dams.
- Avoid pollution of water sources, areas not under treatment, food, feedstuffs and eating utensils.

KOMBAT CYPERMETHRIN is classified as harmful with a yellow band. All recommendations are to be followed carefully.

PLEASE READ THE LABEL BEFORE USE.
1. IDENTIFICATION OF SUBSTANCE / PREPARATION AND COMPANY UNDERTAKING:

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 inhalation 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-dichlorovinyl)dimethylcyclopropanecarboxylate
CAS RN 52315-07-8
Concentration: Cypermethrin 200 g/kg
Inert ingredients : Petroleum distillates and adjuvants

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.

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
CO₂, 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).

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

### 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.

### 8. EXPOSURE CONTROL / PERSONAL PROTECTION

**Applicable Exposure Limits**

<table>
<thead>
<tr>
<th>Exposure Limit</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADI</td>
<td>0.25 mg/kg/day</td>
</tr>
<tr>
<td>RfD</td>
<td>0.05 mg/kg/day</td>
</tr>
</tbody>
</table>

**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.

### 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.
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.

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.

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 ppm 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.

**14. TRANSPORT INFORMATION**

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

16. OTHER INFORMATION

REFERENCES:
• Bitrad MSDS.
• Cornell University, cypermethrin
• SABS Dangerous Goods documentation
• EXTOXNET
• BCPC – Pesticide Manual

This Material Safety Data Sheet complies with basic EU regulatory requirements for Safety Data Sheets on the date of publication, and is intended for translation and adaptation into European National documents. This document should NOT be relied upon for compliance with the laws and regulations of individual countries without the appropriate local translations and adaptations. It is your responsibility to ensure that any Safety Data Sheet taken or adapted from this system for re-distribution or use complies with all the laws and regulations which apply to any such use or re-distribution.