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PRODUCT: CYPERMETHRIN TECHNICAL

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SECTION 1: Identification of the substance or mixture and of the company/undertaking

- 1.1 Product identifier : Cypermethrin (BSI, E-ISO, ANSI, BAN);
cyperméthrine ((*Λ*) F-ISO)
- 1.2 Relevant identified uses of the substance or mixture and uses advised against : Insecticide
- 1.3 Details of the supplier of the safety data sheet : Tagros Chemicals India Ltd.
"Jhaver Centre", Rajah Annamalai Building,
IV Floor, 72, Marshalls Road,
Egmore, Chennai-600 008, India
Telephone number: +91-44-42007400
E-mail: info@tagros.com
- 1.4 Emergency telephone number : +91-4142-239373 Ext. 151

SECTION 2: Hazards identification

- 2.1 Classification of the substance or mixture : Classification as per Directives 67/548/EEC:
Xn; R20/22
Xi; R37
N; R50-53

Classification as per Regulation (EC) No 1272/2008:
Acute Tox. 4 *, H332
Acute Tox. 4 *, H302
STOT SE 3, H335
Aquatic Acute 1, H400
Aquatic Chronic 1, H410

2.2 Label elements

Pictogram, Signal Word Code(s) : GHS07  GHS09 

Wng

Hazard statement Code(s) : H332: Harmful if inhaled.
H302: Harmful if swallowed.
H335: May cause respiratory irritation.

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H410: Very toxic to aquatic life with long lasting effects.

Precautionary Statements

: P270: Do not eat, drink or smoke when using this product.
P301 + P312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P330: Rinse mouth
P261: Avoid breathing dust/fume/gas/mist/vapours/spray.
P271: Use only outdoors or in a well-ventilated area.
P304 + P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P312: Call a POISON CENTER or doctor/physician if you feel unwell.
P403 + P233: Store in a well-ventilated place. Keep container tightly closed.
P405: Store locked up.
P273: Avoid release to the environment.
P391: Collect spillage.
P501: Dispose of contents/container in accordance with local/regional/national/regulation.

2.3 Other hazards

: Very toxic to aquatic life with long lasting effects. Does not meet the criteria for vPvB in accordance with Annex XIII of REACH.

SECTION 3: Composition/information on ingredients

3.1 Substances

Chemical name	CAS No/ EC No	Index No.	Classification (Directives 67/548/EEC)	Classification (Regulation (EC) No 1272/2008)	Con. % w/w
Cypermethrin, ((<i>RS</i>)- α -cyano-3-phenoxybenzyl (<i>1RS,3RS;1RS,3SR</i>)-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylate (Cis:trans ratio: 50:50)	52315-07-8/ 257-842-9	607-421-00-4	Xn; R20/22 Xi; R37 N; R50-53	Acute Tox. 4 *, H332 Acute Tox. 4 *, H302 STOT SE 3, H335 Aquatic Acute 1, H400	93.0 (min)

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				Aquatic Chronic 1, H410	
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SECTION 4: First aid measures

- 4.1 Description of first aid measures : If SWALLOWED, Call a POISON CENTRE or doctor/physician if you feel unwell. Keep the person calm and comfortable. Rinse mouth. IF EYE CONTACT, immediately flush with plenty of water at least for 15 minutes. IF ON SKIN: Wash with plenty of soap and water. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- 4.2 Most important symptoms and effects, both acute and delayed : Based on animal studies, these may include excessive salivation, nausea and vomiting; shortness of breath and laboured breathing; coarse tremors, hypersensitivity to external stimuli and general weakness; a burning or itching sensation following contact; hypotension and slow heart rate. These may be followed by hypertension, increased heart rate and convulsive muscle contractions.
- 4.3 Indication of any immediate medical attention and special treatment needed : There is no specific antidote, treatment must be symptomatic. Keep the patient warm and calm. In cases of severe intoxication, therapy should include a sedative and Anticonvulsant (e.g. barbiturates, diazepam, paraldehyde, etc.). The use of antispasmodic drugs is of limited value; mephenesin and atropine have been found to effectively alleviate the symptoms of pyrethroid poisoning in laboratory animals. If a large quantity of the compound has been swallowed, unless the patient is vomiting, gastric lavage should be performed using a 5% sodium bicarbonate solution, followed by powdered activated Charcoal.

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SECTION 5: Firefighting measures

- 5.1 Extinguishing media : If product is involved in a fire, use water spray, foam, dry powder, carbon dioxide or sand. Keep nearby containers and equipment cool with a water stream.
- 5.2 Special hazards arising from the substance or mixture : May give off toxic fumes if heated to decomposition. Do not breathe fumes. Wear self contained breathing apparatus.
- 5.3 Advice for firefighters : Whenever this product involved in a major fire, firefighters to wear boots, overalls, gloves, eye and face protection and breathing apparatus. Keep containers cool with water spray. Cypermethrin is toxic to fish and water should be used only to cool unaffected stock.

SECTION 6: Accidental release measures

- 6.1 Personal precautions, protective equipment and emergency procedures : Wear suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing. Remove ignition sources and need to evacuate the danger area or to consult an expert. When dealing with a spillage do not eat, drink or smoke.
- 6.2 Environmental precautions : Do not discharge into the drains/surface water/groundwater.
- 6.3 Methods and material for containment and cleaning up : Do not contaminate waters and sewers. Soak up with absorptive material such as sand, soil, diatomaceous earth, etc. Prevent material from spreading, e.g. by damming in with absorptive material. Collect material in specially marked, tightly closing containers. Spilled product cannot be used further and must be disposed of. Clean contaminated floors and objects thoroughly with plenty of water, observing environmental regulations.

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- 6.4 Reference to other sections : Information regarding personal protective equipment, see section 8.
Information regarding waste disposal, see section 13.

SECTION 7: Handling and storage

- 7.1 Precautions for safe handling : Wear full protective clothing by those handling concentrates. Adequate washing facilities should be available at all times and should be close to site of handling. Eating, drinking and smoking should be prohibited during handling. Wash hands after use and to remove contaminated clothing and protective equipment before entering eating areas.

- 7.2 Conditions for safe storage, including any incompatibilities : It should be stored in clearly labelled rigid and leak proof containers and away from containers of food and drink. Storage should be under lock and key and secure from access by children and other unauthorized persons. Store in a well-ventilated place. Do not store together with oxidizing agents & strong alkalies.

- 7.3 Specific end use(s) : When opening a container and mixing, protective impermeable boots, clean overalls impermeable gloves, eye protection and a respirator should be worn. Avoid contact to mouth and eyes. Before eating, drinking or smoking, hands and other exposed skin should be thoroughly washed with alkaline soap.

SECTION 8: Exposure controls/personal protection

- 8.1 Control parameters
- Occupational exposure limit : Exposure limit values are not available.
- DNEL and PNEC values : PNEC water = 0.01 µg/l
PNEC soil = 0.575mg/kg soil
DNEL: Not available

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8.2 Exposure controls

8.2.1 Appropriate engineering controls : Mechanical ventilation should be used when handling this product in closed spaces.

8.2.2 Individual protection measures, such as personal protective equipment

General precautions : Do not inhale vapours.

Eye/face protection : Wear safety goggles with imperforated side shield and face shield.

Skin protection : Avoid contact with skin. Wear apron, boots and full protective suit.

Respiratory protection : Use respiratory protection in case of insufficient exhaust ventilation or prolonged exposure.

Thermal hazards : Whenever this product involved in a major fire, firefighters to wear boots, overalls, gloves, eye and face protection and breathing apparatus.

8.2.3 Environmental exposure controls : Keep away from food, drink and animal feed stuff. This material and its container must be disposed of as hazardous waste. Avoid release to the environment. Refer to special instructions/safety data sheet.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance : Viscous semi-solid gel like liquid at 25°C

Odour : Distinctively unique mild chemical odor at 25°C

Odour threshold : Not available

PH : 6.38 at 25°C

Melting point/freezing point : 63°C to 70°C at 101.45 mbar

Initial boiling point and boiling range : 172.5°C at 101.45 mbar

Flash point : >246°C

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Evaporation rate	:	Not available
Flammability (solid, gas)	:	Non-relevant
Upper/lower flammability or explosive limits	:	Non-explosive
Vapour pressure	:	1.166 x 10 ⁻⁶ Pa 25°C
Relative density	:	1.12 g/ml
Solubility(ies)	:	Water: 82.8 µg / lit at 20°C In acetone, chloroform, cyclohexanone, xylene >450, ethanol 337, hexane 103 (all in g/l, 20 °C).
Partition coefficient: n-octanol/water	:	Log Pow: 6.09
Auto-ignition temperature	:	400°C
Decomposition temperature	:	Decomposes at 220°C.
Viscosity	:	Not available
Explosive properties	:	Non-explosive
Oxidising properties	:	Non-oxidizer
9.2 Other information	:	Does not dissociate in water

SECTION 10: Stability and reactivity

10.1	Reactivity	:	Hydrolysed under alkaline conditions.
10.2	Chemical stability	:	Stable for two years at ambient conditions.
10.3	Possibility of hazardous reactions	:	Reactions with strong alkalis. Incompatible with oxidizing materials.
10.4	Conditions to avoid	:	Avoid excessive heat and flame.
10.5	Incompatible materials	:	Alkaline materials.

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10.6 Hazardous decomposition products : When handled and stored appropriately, no dangerous decomposition products are known.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity, oral, dermal, inhalation : Oral LD₅₀>300-2000 mg/kg bw (Rats)
Dermal LD₅₀: >2000 mg/kg bw (Rats)

skin corrosion/irritation : Non-irritant to skin of rabbits

serious eye damage/irritation : Non-irritant to eye of rabbits

respiratory or skin sensitisation : Non-sensitiser to skin of Guinea pigs

germ cell mutagenicity : Non-mutagenic

Carcinogenicity : Non-carcinogenic

Reproductive toxicity : Non-reprotoxic and teratogenic

STOT-single exposure : STOT SE 3, H335: May cause respiratory irritation.

STOT-repeated exposure : Not applicable

Aspiration hazard : Inhalation or pulmonary aspiration may cause a hypersensitivity pneumonitis and pulmonary oedema. May precipitate wheezing in asthmatics.

SECTION 12: Ecological information

12.1 Toxicity

Sheepshead minnow, 96 hours : LC₅₀ : 2.37 µg/l

Daphnia magna, 24 hours : EC₅₀: 0.13 µg/l

Chlorella vulgaris, 72 hours : EC₅₀: 26.41 µg/ml

Bees, 24 hours (oral) : LD₅₀: 0.035 µg/bee

Birds, mallard ducks : LD₅₀: for >10 000 mg/kg

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- 12.2 Persistence and degradability : In soil, typical DT₅₀ 60 d (fine sandy loam); hydrolysis with cleavage of the ester bond occurs and also further hydrolytic and oxidative degradation. Field dissipation is much faster. In river water, rapid degradation occurs, DT₅₀ c. 5 d.
- 12.3 Bioaccumulative potential : Cypermethrin is rapidly taken up by fish (accumulation factor approximately 1000); the half-life of residues in rainbow trout was 8 days. In view of the low concentrations of cypermethrin that are likely to arise in water bodies and their rapid decline, it has been concluded that, under practical conditions, residues in fish will not reach measurable levels.
- 12.4 Mobility in soil : Cypermethrin is adsorbed very strongly on soil particles, especially in soils containing large amounts of clay or organic matter. Movement in the soil is therefore extremely limited and downward leaching of the parent molecule through the soil does not occur to an appreciable extent under normal conditions of use.
- 12.5 Results of PBT and vPvB assessment : Very toxic to aquatic life with long lasting effects. Does not meet the criteria for vPvB in accordance with Annex XIII of REACH.
- 12.6 Other adverse effects : With recommended application rates it is unlikely that cypermethrin or its degradation products will attain levels of environmental significance. Notwithstanding its high toxicity for fish and honey bees, this is only likely to cause a problem in the case of spillage and over spraying.

SECTION 13: Disposal considerations

- 13.1 Waste treatment methods
- Product Disposal
Avoid exposure, if possible by the use of appropriate protective clothing and masks.
- Absorb spillage with lime, damp sawdust, sand, or earth and dispose of safely (see below). If spillage is large, contain it by building a barrier of earth or sandbags.

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Waste containing cypermethrin should be burnt in a proper high temperature incinerator with effluent scrubbing. Where no incinerator is available, contaminated absorbents or surplus products should be decomposed by hydrolysis at pH 12 or above. Contact with a suitable hydrolysing agent is required to ensure degradation of the active ingredient to a safe level. Dispose of product in accordance with local regulation.

Never pour untreated waste or surplus products into public sewers or where there is any danger of run-off or seepage into streams, water-courses, open waterways, ditches, fields with drainage systems, or the catchment areas of boreholes, wells, springs, or ponds.

Package disposal

Decontaminate empty, damaged, or leaking containers with a 10% sodium carbonate solution added at the rate of at least 1 litre per 20-litre drum. Puncture containers to prevent reuse. Dispose of empty containers in an incinerator approved for chemicals. Dispose of container in accordance with local regulation.

SECTION 14: Transport information

- 14.1 UN number : 3352
- 14.2 UN proper shipping name : PYRETHROID PESTICIDE, LIQUID, TOXIC
- 14.3 Transport hazard class(es) : ADR: 6.1
IMDG: 6.1
ICAO/IATA: 6.1
RID: 6.1
- 14.4 Packing group : III
- 14.5 Environmental hazards : Cypermethrin designated as marine pollutant
- 14.6 Special precautions for user : Ensure that containers are sound and that labels are securely fixed and undamaged before

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dispatch. Do not load together with food and animal feed.

14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code : Not relevant

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture : Cypermethrin has been classified under Dangerous substances Directive (67/548/EEC) & Regulation No 1272/2008.

15.2 Chemical safety assessment : Chemical safety assessment has been performed by World Health Organization for the International Programme on Chemical Safety.

SECTION 16: Other information

16.1 Indication of changes
Changes have been made in all section.

16.2 Abbreviations and acronyms
LD₅₀: Lethal Dose, 50%
LC₅₀: Lethal Concentration, 50%
STOT: Specific Target Organ Toxicity
DNEL: Derived No Effect Level
PNEC: Predicted No Effect Concentration
ADR: International Carriage of Dangerous Goods by Road
IMDG: International Maritime Dangerous Goods
ICAO/IATA: International Civil Aviation Organization /International Airlines Travel Agent
RID: International Carriage of Dangerous Goods by Rail

16.3 Key literature references and sources for data
-Our study reports
- World Health Organization for the International Programme on Chemical Safety.
-BCPC, Pesticide Manual
- Document I, Evaluation report according to Directive 98/8/EC)

16.4 Text of R-phrases mentioned in Section 3:

R20/22: Harmful by inhalation and if swallowed
R37: Irritating to respiratory system
R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

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Text of the hazard statements mentioned in Section 3:

H332: Harmful if inhaled.

H302: Harmful if swallowed.

H335: May cause respiratory irritation.

H400: Very toxic to aquatic life.

H410: Very toxic to aquatic life with long lasting effects.

16.5

Training

Training of workers in techniques to avoid contact with substance is essential.

16.6

Liability

The information provided in this safety data sheet is accurate at the date of publication and will be updated as and when appropriate. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use or disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.