MATERIAL SAFETY DATA SHEET OF CYPERMETHRIN 10% EC

1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION:

- **Common Name**: Cypermethrin
- **Chemical Name**: (RS)-Alpha-Cyano-3-phenoxybenzyl (1, RS)-cis Trans-3-(2,2-dichlorovinyl)-2,2-dimethyl cyclopropane Carboxylate.
- **Empirical Formula**: C_{22}H_{19}Cl_{2}NO_{3}
- **Intended Use**: Insecticide
- **Pesticide Family**: Pyrethroids
- **Manufactured By**: JAI SHREE RASAYAN UDYOG LTD. 
  M-4, Aradhana Bhawan, Commercial Complex, Azadpur, Delhi-110 033
  Telephon No. +91-11-45750100 to 40 (40 lines)
  Telefax: +91-11-45750140
- **CAS NO.**: 52315078
- **Molecular weight**: 416.32

2. PHYSICAL & CHEMICAL PROPERTIES

- **Physical state**: Liquid
- **Colour**: Light Yellow
- **Emulsion Stability**: Stable emulsion for 24 hours
  (No creaming and no sedimentation)
- **Acidity (As H_2SO_4)**: 0.05% max.
- **Solubility**: Miscible with water
- **Stability**: Stable at room temperature for 2 years
- **Compatibility**: Compatible with non–alkaline pesticides
- **Acidity as H2SO4**: Not > 0.15 w/w
- **Boiling point / range**: 155 - 180°C
- **Melting point / range**: Not applicable.
- **Flash point**: 61°C
- **Flammability**: Flammable/ > 61°C
- **Auto ignition**: 47°C
- **Oxidising properties**: None
- **Vapour pressure**: -2.3 x 10^-4 m pa (20°C)
Density 
0.95 at 20°C
Water solubility 
Emulsifies in water

3. COMPOSITION / INGREDIENTS

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Ingredients</th>
<th>%age</th>
<th>CAS No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Cypermethrin Technical (Based on 92% w/w a.i.)</td>
<td>10.87 % w/w</td>
<td>52315-07-8</td>
</tr>
<tr>
<td>2</td>
<td>Emulsifiers (Mixture of Ethylene oxide condensate of Alkyl-phenol and Sulphonated alkyl benzene)</td>
<td>8.80 % w/w</td>
<td>68412-54-4 and 26264-06-2</td>
</tr>
<tr>
<td>3</td>
<td>Solvent (Xylene)</td>
<td>80.33 % w/w</td>
<td>1330-20-7</td>
</tr>
<tr>
<td></td>
<td>Total:</td>
<td>100.00 % w/w</td>
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</tbody>
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4. HAZARDS IDENTIFICATION

Symptoms of poisoning 
Accidental ingestion or large quantities could produce tumours, anxieties and weakness of limbs, nervousness convulsion and allergic manifestation.

Skin 
Coetaneous parenthesis may occur including numbness, itching, burning, tingling and warmth.

Eyes 
Mild irritant.

Inhalation 
May cause, after heavy exposure, hypersensitivity, ataxia, Urinary incontinence.

Ingestion 
May cause hypersensitivity, ataxia, urinary incontinence.

Other information 
-

Physical/chemical effects 
Flammable product.

Environmental effects 
Toxic to aquatic organism.

5. FIRST AID

First Aid 
If accidental contamination of the product, wash immediately with large amounts of water. Follow washings by irrigating eyes with normal saline of phosphate buffer solution. This should continue till eyes feel comfortable. Patient then should undergo medical attention.
Eye contact
Rinse immediately with plenty of water and seek medical advice.

Inhalation
Remove from exposure area to fresh air immediately. If breathing has stopped, perform artificial respiration. Keep person warm and at rest. Treat symptomatically and supportively. Get medical attention immediately.

Ingestion
Do not induce vomiting. Remove by gastric lavage and catharsis. Maintain blood pressure and airway. Give oxygen if respiration is depressed. Do not perform gastric lavage if victim is unconscious. Get medical attention immediately.

Other information
Treat symptomatically and supportively.

Antidote
If ingested, take the patient to hospital and give gastric lavage with care to prevent aspiration. Give symptomatic and supportive treatment. Administer antihistamine in case of allergic symptoms occur. Phenobarbital may be used to control nervous symptoms. Treat symptomatically.

6. FIRE AND EXPLOSION DATA

Flash point
47°C or 63°C

Extinguishing media
Dry chemical, carbon dioxide, water spray or standard foam.

Unsuitable extinguishing
High pressure water jet media

Special exposure hazards
Do not release chemically contaminated water into drains, soil and surface waters.

Special protective
As for all fires involving chemicals: chemical protection suit, suitable gloves equipment for fire-fighters and boots, and self-contained breathing apparatus.

7. ACCIDENTAL RELEASE MEASURES

Personal Precautions
Use personal protective equipments.

Method of Cleaning Up
Do no touch spilled material. Stop leak if you can do it without risk. For small spills, take up with sand or other absorbent material and place into containers for later disposal.
Move containers from spill area. For larger spills, dike far ahead of spill for later disposal. Keep unnecessary people away. Isolate hazard are and deny entry. Ventilate closed space.

Environmental Precautions Prevent contamination of water.

8. HANDLING AND STORAGE

Handling: Keep product in original tightly closed container. Avoid exposure by inhalation. Do not eat, drink or smoke when handling. Wash hands before eating, drinking or smoking.

Storage: Keep in a cool dry place in original packing store under lock and key. Keep out of reach of children. Do not store near foodstuff. Poultry and domestic animals. Do no load with foodstuff while transportation. Check that containers are sound and labels undamaged before dispatch.

9. EXPOSURE CONTROLS/ PERSONAL PROTECTION

Eye Protection Wear splash proof or dust resistant safety goggles and face shield.

Hand protection Rubber impermeable gloves

Respiration Wear an air respirator or self contained breathing apparatus impervious clothes so as to avoid skin contact.

10. STABILITY AND REACTIVITY

Stability Stable for 2 years under optimum condition of storage.

Conditions to avoid No special precautions other than good housekeeping of chemicals.

Material to avoid Strong oxidising agents

Hazardous decomposition Thermal decomposition products may emit toxic fumes of hydrogen cyanide and oxides of carbon and nitrogen.

Incompatibility with other Incompatible with alkaline pesticides

Material

11. TOXICOLOGICAL INFORMATION (a.i.)
LD<sub>50</sub> Acute Oral  Rat = 321.64 mg/kg b.w.  Mice = 269.92 mg/kg b.w.

LD<sub>50</sub> Acute Dermal  Rat = >2000 mg/kg b.w.  Rabbit = 2500 mg/kg b.w.

LD<sub>50</sub> Acute Inhalation  Rat = 5.18 mg/lit. air  Skin Irritation  Rabbit = Slight irritation  Eye Irritation  Rabbit = Slight irritation  Skin Sensitization  Weak skin sensitizer.

**CHRONIC TOXICITY**

2 Years study in Rat  NOEL : 7.5mg/kg  2 Years study in dog  NOEL : 5mg/kg

**12. ECOLOGICAL INFORMATION (a.i.)**

Bees  Toxic to bees  Birds  Bobwhite Quail LC<sub>50</sub> = >20,000 ppm  Mallard Duck LD<sub>50</sub> Oral = >4640 mg/kg

The Aquatic Organisms  Daphnia Magna LD<sub>50</sub> = >0.0002 mg/lit  (Pitch, Daphnia, Algae Blue-Green Algac (Nostoc linckia)LC<sub>50</sub> (20H)=20,000 ug/lit.

Fishes  Bluegill Sunfish LD<sub>50</sub> (96H) = 0.0018 mg/lit  Rainbow Trout  LD<sub>50</sub> (96H) = 0.0082 mg/lit

**13. TRANSPORT INFORMATION**

UN No.  2902  IMCO Class  6.1  IMDG PG  6219  Packing Group  III  Proper Shipping Name  Pyrethroid pesticide, liquod, toxic, flammable  Environmental risk  Marine pollutant

**14. REGULATORY INFORMATION**

Hazard Symbol  The harmful symbol (Xn)
15. DISPOSAL PROCEDURES

Used packages, surplus materials and washings of insecticides and containers shall be disposed off in a safe manner so as to prevent environmental or water pollution. The used packages shall not be left outside to prevent their re-use. Packages shall be broken and buried away from habitation.

16. OTHER INFORMATION

Cypermethrin is a pyrethroid pesticide of moderate toxicity to mammals. It is readily absorbed from the gastrointestinal tract.

The information contained in this safety data sheet is given in good faith. It is accurate to our best of knowledge and belief and represents the most up-to-date information. The information given in this data sheet does not constitute or replace the user's own assessment of workplace risk as required by other health and safety legislation. Jai Shree Rasayan Udyog Ltd. will not be liable for any claims or damages arising out of use of this information.

For JAI SHREE RASAYAN UDYOG LTD.

AUTHORISED SIGNATORY