



# MATERIAL SAFETY DATA SHEET

## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name : Permethrin Technical  
CAS No : 52645-53-1  
Use : Insecticide  
Company Info : M/s HPM Chemicals & Fertilizers Ltd  
209-210, Anupam Bhawan, Commercial Complex  
Azadpur, Delhi-110033  
Telephone : (011)-45071800, 899  
Fax : (011)- 27681800  
Website : [www.hpmindia.com](http://www.hpmindia.com)  
E-mail : [info@hpmindia.com](mailto:info@hpmindia.com)

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

Composition	Concentration
Acephate a.i.	92.00% min.
Other associates impurities	08.00% max

## 3. HAZARDS IDENTIFICATION OF PREPARATION

**Major Health Hazards:** The onset of symptoms varies depending upon such factors as the route of absorption and quantity involved. In patients with occupational poisoning, skin symptoms usually develop within 4-6 hours after exposure, with systemic symptoms occurring as late as 48 hours after exposure. Paraesthesia of the facial skin can develop approximately 30 minutes after exposure and does not usually last beyond 24 hours when exposure is terminated. Following ingestion, the initial symptoms involve the gastrointestinal tract, developing 10-60 minutes after exposure. Patients suffering from acute oral poisoning usually develop prominent digestive symptoms such as epigastric pain, nausea and vomiting. Severely poisoned patients may have frequent convulsive attacks, coma, or pulmonary oedema. The prognosis is good if treated, with usually full recovery even in severely poisoned patients. (The hospitalisation period is usually longer than 4 weeks). **Safety**

**Phrase(s):** S2: Keep out of the reach of children.

S13: Keep away from food, drink and animal foodstuffs.

S23: Do not breathe vapour/mist.

S36/37: Wear suitable protective clothing and gloves.

**Poisons Schedule:** S6 Poison.

### Potential Health Effects

#### Health Effects:

No specific data is available for the product for chronic exposure symptoms. The ingredients are not listed as carcinogenic "Exposure Standards for Atmospheric Contaminants in the Occupational Environment".



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### Acute Effects:

**Swallowed:** Data suggests that this product is harmful if swallowed.

**Eye:** This product is mildly irritating to the eyes. It is likely to cause mild discomfort such as watering and redness of the eyes. However, this should quickly disappear once exposure is over.

**Skin:** Data suggests that this product may be absorbed through the skin and be harmful by skin absorption. Major skin exposure may lead to health problems. May be a weak skin sensitiser.

**Inhalation:** Data suggests that this product is harmful if inhaled. Minor or short-term exposure may lead to short term health problems, although long-term exposure may lead to permanent health problems.

### 4. FIRST AID MEASURES

- Skin Contact** : Remove contaminated clothing and shoes immediately. Wash contaminated area with soap or mild detergent and large amount of water until no effects of chemical remains. If symptoms persists get medical help.
- Eye Contact** : Irrigate the eyes with large amount water or normal saline occasionally lifting upper and lower lids until no evidence of chemical remains and obtain a medical help.
- Ingestion** : 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 victim is unconscious. Get medical attention immediately.
- Inhalation** : Remove the patient from the exposure area to fresh air immediately. If breathing has stopped perform the artificial respiration. Keep person warm and rest. Get medical attention immediately.

### 5. ACCIDENTIAL RELEASE

- Personal Preparation** : Avoid contact with skin, eyes and clothing.
- Environmental Precautions** : Prevent contamination of soil, drains and surface water.
- Method of cleaning** : Absorb the material in the sand, soil, diatomaceous earth or suitable absorbent. Place in suitable material and remove to safe place or dispose of in an incinerator approved for chemicals.

### 6. FIRE-FIGHTING MEASURES

**Suitable Extinguishing Media** : Dry chemical, CO2, Water spray, standard foam.

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<b>Exposure Hazards</b>	:	For larger fire, use water spray, fog or standard foam.
<b>Fire-Fighting</b>	:	During a fire, irritating and possibly toxic gases like carbon dioxide; carbon monoxide; nitrogen oxides; sulfur dioxide; hydrogen chloride; may be generated by thermal decomposition or combustion Use dry chemical, foam or CO2 extinguishing media. Wear full protective clothing and self-contained breathing apparatus. Evacuate non essential personnel from the area to prevent human exposure to fire, smoke, fumes or products of combustion. Prevent use of contaminated buildings, area, and equipment until decontaminated. Water runoff can cause environmental damage. If water is used to fight fire, dike and collect runoff.

### 7. HANDLING AND STORAGE

<b>Handling</b>	:	Use appropriate (impervious) clothing, gloves and closed foot ware to prevent the repeated contact with skin. Use flash proof and dust resistant goggles to prevent the contact with eyes.
<b>Storage</b>	:	Keep the product in original container tightly closed and correctly labeled. Store in suitable, cool, dry, well ventilated place under lock and key; away from the reach of the children, animals, food and animal feeding stuffs. Store away from the incompatible substances and source of ignition

### 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

<b>Technical protective measures</b>	:	None
<b>Exposure controls limits</b>	:	Not Established
<b>Respiratory protection</b>	:	Wear suitable mask
<b>Hand protection</b>	:	Wear impervious gloves
<b>Eye protection</b>	:	Wear flash proof and dust resistant goggles.
<b>Skin protection</b>	:	Wear impervious clothing and closed foot ware.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance:** Pale brown liquid.  
**Molecular weight:** 391.3



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**Molecular formula:** C<sub>21</sub>H<sub>20</sub>Cl<sub>2</sub>O<sub>3</sub>

**Melting/softening point:** 34-35°C

**Boiling point:** 200 °C/0.1 mmHg; >290 °C/760 mmHg.

**Vapour pressure:** Not Available.

**Flashpoint:** >100 °C.

**Specific gravity/Density:** 1.21gm/cm<sup>3</sup>

**Solubility in water:** In water 6 x 10<sup>-3</sup> mg/l (pH 7, 20 °C).

**PH:** 5.6

### 10. STABILITY AND REACTIVITY

**Stability:** Product is stable for at least 2 years under ambient storage conditions.

Stable to heat (≥2 y at 50 °C), more stable in acidic than alkaline media with optimum stability.

### 11. TOXICOLOGICAL INFORMATION



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No adverse health effects expected if the product is handled in accordance with this Safety Data Sheet and the product label. Symptoms or effects that may arise if the product is mishandled and overexposure occurs are:

**Ingestion:** Swallowing can result in nausea, vomiting and central nervous system depression. If the victim is showing signs of central system depression (like those of drunkenness) there is greater likelihood of the patient breathing in vomit and causing damage to the lungs. Breathing in vomit may lead to aspiration pneumonia (inflammation of the lung). Swallowing large amounts may result in muscle tremors, central nervous system depression, convulsions and coma.

**Eye contact:** May be an eye irritant.

**Skin contact:** Contact with skin may result in irritation. May cause skin sensitisation in sensitive individuals. Repeated or prolonged skin contact may lead to allergic contact dermatitis. May cause tingling, burning, and itching or numbness in exposed areas which is transient that can last up to 36 hours.

**Inhalation:** Breathing in vapour can result in headaches, dizziness and possible nausea. Breathing in high concentrations can produce central nervous system depression, which can lead to loss of co-ordination, impaired judgement and if exposure is prolonged, unconsciousness.

**Long Term Effects:**

No information available for the product.

**Toxicological Data:**

No LD50 data available for the product. However, for constituent(s)

PERMETHRIN:

Oral LD50 (rat): Male 2949 Female >4000mg/kg.

Dermal LD50 (rabbit): >2,000 mg/kg.

Inhalation LC50 (rat): >685 mg/m<sup>3</sup>/3hr.

SKIN: Mild irritant (rat). Moderate skin sensitiser.

EYES: Mild irritant (rabbit).

Short term tests have shown that permethrin is unlikely to be genotoxic.

Animal studies have shown that repeated or prolonged doses produce no significant toxic effects.

ADI (Acceptable Daily Intake) for humans is 0.05 mg/kg bw/day.

### 12. ECOLOGICAL INFORMATION



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Permethrin is extremely toxic to aquatic life, such as bluegill and lake trout while it is slightly toxic to bird species, such as mallards. Toxicity increases with higher water temperatures and acidity.

### **ENVIRONMENTAL FATE**

Permethrin has low mobility in soil. It has a high potential for bioaccumulation but is rapidly eliminated from fish (about 80% in 14 days). There is evidence of degradation in soil and water. The half life in soil is less than 38 days.

Use as a fumigant in buildings means a low potential for environmental contamination.

### **ECOLOGICAL DATA**

Very toxic to aquatic organisms. Risk of bioaccumulation in an aquatic species is high.

96hr LC50 (rainbow trout): 2.5 µg/L.

48hr LC50 (rainbow trout): 5.4 µg/L.

48hr LC50 (bluegill sunfish): 1.8 µg/L.

48hr LC50 (Daphnia magna): 0.6 µg/L.

**Terrestrial toxicity:** Toxic to bees.

Oral LD50 (24h): 0.098 µg/bee.

Contact LD50 (topical): 0.029 µg/bee.

Oral LD50 (mallard duck) : >5,000 mg/kg (females).

## **13. DISPOSAL CONSIDERATION**

**PESTICIDE DISPOSAL:** Wastes resulting from the use of this product may be disposed on site (by use according to the label) or at an approved waste disposal facility. Further information can be obtained from the EPA or the equivalent state and local agencies.

**CONTAINER DISPOSAL:** Completely empty bag into application equipment. Check with EPA, State, and local authorities for the current regulations applicable to your area for disposal of waste containers.

## **14. TRANSPORT INFORMATION**

**SHIPPING NAME:** Pyrethroid pesticide, Liquid, Toxic.

**UN NUMBER:** UN 3352

**HAZARD CLASS:** 6.1

**PACKING GROUP:** PG III

**PRIMARY/SUBSIDIARY LABEL:** Keep Away From Food

**PRIMARY/SUBSIDIARY PLACARD:** Keep Away From Food

## **15. REGULATORY INFORMATION**

**Risk Sympol:** Xn: Harmful

**Risk Phrase(s):** R22 harmful if swallowed



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### 16. OTHER INFORMATION

Incompatible with the alkaline material.

**Antidote** : No specific antidote is available. Treat the patient symptomatically and supportively.

*This product should be stored, handled and used in accordance with good industrial practices and in conformity with legal regulation.*

*This information is based on present knowledge for your guidance on safety requirements. It is not intended as a specification.*