MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name	:	Fenvalerate Technical
CAS No	:	51630-58-1
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
E-mail	:	info@hpmindia.com

2. COMPOSITION/INFORMATION ON INGREDIENTS

Composition	**Concentration**
Ethion a.i.	96.00% min.
Other associates impurities	4.00% max

3. HAZARDS IDENTIFICATION OF PREPARATION

Emergency Overview:

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).

Potential Health Effects

ROUTES OF EXPOSURE: Skin contact and absorption and vapor/mist inhalation. Fenvalerate is synthetic pyrethroid, which following ingestion, inhalation or skin contact can be absorbed into the bloodstream causing effects such as transient skin sensations (tingling, burning, and numbness). Keep under observation and treat symptomatically. If indicated, lavage with cuffed tube.

4. FIRST AID MEASURES

General Information:
You should call doctor if you feel that you may have been poisoned, burned or irritated by this product. Have this MSDS with you when you call.

INHALATION:
Acute exposure: May cause mucous membrane irritation. Fenvalerate produce central nervous system stimulation in animals with symptoms of nausea, vomiting, gastroenteritis with diarrhoea, hypersensitivity, incoordination, tremors, muscular paralysis, convulsion, coma, and death due to respiratory failure.
Chronic exposure: Prolonged or repeated exposure may cause irritation of the mucous membrane.
First aid: 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.

SKIN CONTACT:
Acute exposure: May cause irritation. Exposure to fenvalerate may cause severe irritation.
Chronic exposure: Prolonged or repeated exposure may cause irritation.
First aid: Remove contaminated clothing and shoes immediately. Wash affected area with soap or mild detergent and large amounts of water until no evidence of chemical remains (approximately 15-20 minutes). Get medical attention immediately.

EYE CONTACT:
Acute exposure: May cause irritation. Contact with fenvalerate may cause severe irritation with substantial but temporary eye injury.
Chronic exposure: Prolonged or repeated exposure may cause irritation or conjunctivitis.
First aid: Wash eyes immediately with large amounts of water or normal saline, occasionally lifting upper and lower lids, until no evidence of chemical remains (approximately 15-20 minutes). Get medical attention immediately.

INGESTION:
Acute exposure: In laboratory animals, Fenvalerate material has produced central nervous system stimulation with symptoms of nervousness, anxiety, salivation, tremors and convulsions. . Rats given high doses suffered nerve damage. A low dose of fenvalerate mixed with DMSO was lethal in rats; the DMSO may be responsible for increase absorption from the gut resulting in an increase in the toxicity. A more moderate dose of the technical grade of fenvalerate suspended in water was lethal in rats.
Chronic exposure: Rats fed 1000 ppm in the diet for 2 years exhibited signs of decreased body weight with some increase of organ/body weight ratios. Chronic ingestion of a cumulative dose of 1138 mg/kg for 26 weeks produced in dogs adverse effects on the reproductive system of females.
First aid: 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. Administration of lavage or oxygen should be performed by qualified medical personnel.
ANTIDOTE: No specific antidote. Treat symptomatically and supportively.

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. For larger fire, use water spray, fog or standard foam.
Exposure Hazards	:	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
Fire-Fighting	:	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

Handling	:	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.
Storage	:	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

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

9. PHYSICAL AND CHEMICAL PROTERITES

Physical Description & colour	:	Yellow brown viscous liquid.
Odour	:	Mild chemical odour.
MOLECULAR WEIGHT	:	419.9
MOLECULAR FORMULA	:	C25H22ClNO3
Boiling Point	:	Decomposes on distillation.
Freezing/Melting Point	:	39.5-53.7 °C (pure)
Volatiles	:	No data.
Vapour Pressure	:	1.92 x 10-2 mPa (20°C)
Vapour Density	:	No data.
Specific Gravity	:	1.175 (25 °C)
Water Solubility	:	In water <10 µg/l (25°C).
pH	:	Non Available
Flash Point	:	230 °C

10. STABILITY AND REACTIVITY

Thermal Stability	:	Stable to heat.
Conditions to avoid	:	Direct source of heat/open flames.
Material to avoid	:	Alkaline material
Hazardous Decomposition Products	:	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.

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY:

Oral LD_{50} (Rats) - 451 mg/Kg

Dermal LD_{50} (Rats) - > 5000 mg/Kg, LD_{50} for (Rabbits) 1000-3200 mg/Kg

Inhalation LC_{50} (Rats) - > 101 mg/m^3

Eye Irritation (Rabbits) - Slight irritant

Skin Irritation (Rabbits) - Slight irritant
Sensitization (guinea pig) - Non-sensitizer
ADI - 0.02 mg/kg/day (ppm) (WHO)
Toxicity class - WHO (a.i.) II

12. ECOLOGICAL INFORMATION

Fenvalerate 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.
Birds: Acute oral LD_{50} domestic fowl: >1600 mg/kg, LD_{50} mallard ducks: 9932 mg/kg. Dietary LC_{50} for quail: >10000 mg/kg, Dietary LC_{50} for mallard duck: 5500 mg/kg.
Fish:LC_{50} (96h) for rainbow trout 0.0036 mg/l.
Bees: Toxic to bees.
Contact LD_{50} 0.23 µg/bee

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: 3352
Hazard Class: 6.1
Packing group: III

15. REGULATORY INFORMATION

Risk Symbols
T - Toxic
N - Dangerous for the environment
Risk Phrases
R23/25 Toxic by inhalation and if swallowed
R43 May cause sensitisation by skin contact
R50 Very toxic to aquatic organisms
R53 May cause long-term adverse effects in the aquatic environment

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.