

MATERIAL SAFETY DATA SHEET

Permethrol plus

1. COMPANY AND PRODUCT IDENTIFICATION

Commercial Name : Permethrol plus
 manufacturer : Tapazol Chemical Works Ltd.
 Issue Date: 11.08.08 Hasolela 1, Bet-shemesh, Israel
 Date of revision: 13.05.2012

2. COMPOSITION INFORMATION ON INGREDIENTS

Chemical Nature of Substance or Preparation

Family : Pyrethroid insecticide
 Utilisation : Insecticide

Constituents

CAS	EINECS	NAME	Concentration
52645-53-1	613-058-00-2	Permethrin tech	10%
51-03-06	200-076-7	Piperonyl butoxide	40%

3. HAZARDS IDENTIFICATION

Emergency Overview

Viscous, yellow- brown liquid with a mild odor. Slightly combustible. May support combustion at elevated temperatures. Thermal decomposition and burning may form toxic by-products. Highly toxic to fish, bees and aquatic organisms. Keep out of drains and watercourses.

Potential Health Effects

Effects from exposure result from inhalation, ingestion or coming into contact with the skin. Symptoms of exposure include diarrhea and vomiting and mild skin irritation. Contact with this product may rarely produce reversible skin sensations such as numbing, burning and tingling.

Medical Conditions Aggravated by Exposure

Skin affections.



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4. FIRST AID MEASURES

Instructions for first aid

Inhalation

Remove to fresh air. If breathing difficulty persists, obtain medical attention.

Contact with Skin

Wash with plenty of soap and water.

Contact with Eyes

Flush with water for at least 15 minutes. If irritation persists, obtain medical attention.

Ingestion

Drink one or two glasses of water and induce vomiting by touching the back of the throat with a finger or by giving syrup of ipecac. Never induce vomiting or give anything by mouth to an unconscious person. Contact a medical doctor.

Note to Medical Doctor

Permethrin formulation has low oral, dermal and inhalation toxicity, and is minimally irritating to the eyes and practically non-irritating to the skin. Reversible skin sensation (paresthesias) may occur and ordinary skin salves have been found useful in reducing discomfort. Treatment is otherwise controlled removal of exposure followed by symptomatic and supportive care.

5. FIRE FIGHTING MEASURES

Extinguishing Media

Foam or water fog

Explosion Hazard

Combustible. This material may support combustion at elevated temperatures.

Special Fire Fighting Procedures

Isolate fire area. Evacuate downwind. Wear full protective clothing and self-contained breathing apparatus. Do not breathe smoke gases or vapor generated.

Hazardous Decomposition Products

Carbon monoxide and carbon dioxide. Minor quantities of chlorine and hydrogen chlorine may be formed.

6. ACCIDENTAL RELEASE MEASURES

Spillage

Isolate and post spill area. Wear protective clothing and personal protective equipment as prescribed in Section 8. 'Exposure Controls Personal Protection'. Keep unprotected persons

and animals out of the area. Keep material out of streams and sewers. Dike to confine spill and absorb with a non-combustible absorbent such as clay, sand or soil. Vacuum, shovel or pump water into a drum and label content.

Clean Spillage

To clean and neutralize spill area, tools and equipment, wash with a suitable solution (i.e. bleach or caustic soda ash and either ethylene glycol or an appropriate alcohol, i.e. methanol, ethanol or isopropanol). Follow this by washing with a strong soap and water solution.

7. HANDLING AND STORAGE

Store in a cool, dry, well ventilated place. Do not use or store near heat, open flame and hot surfaces. Store in original containers only. Keep out of reach of children and animals. Do not contaminate other pesticides, fertilizers, water, food or feed by storage or disposal.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Ventilation

Use local exhaust at all process locations where vapor or mist may be emitted. Ventilate all transport vehicles prior to unloading.

Respiratory Protection

For splash, spray or mist exposure, as a minimum, a properly fitted half-face air-purifying respirator, which is approved for pesticides (U>S>NIOSH< MSHA, EU Cen or comparable certification organization). Respirator use and selection must be based on airborne concentrations.

Hand Protection

Wear chemical protective gloves made of materials such as neoprene. Thoroughly wash the outside of gloves with soap and water prior to removal. Inspect regularly for leaks.

Eye Protection

For splash, spray or mist exposure, wear chemical protective goggles or face shield.

Work Clothing

Depending upon concentrations encountered, wear coveralls or long-sleeved uniform and head covering. For larger exposures as in the case of spills, wear full body cover barrier suit..

Launder all work clothing before reuse (separately from household laundry).

Clean water should be available for washing in case of eye or skin contamination. Wash skin prior to eating, drinking or smoking. Shower at the end of the workday.

9. PHYSICAL & CHEMICAL PROPERTIES of tech AI

Appearance	:	light yellow liquid
Flash Point	:	81 ⁰ C (closed cup)
Boiling Point	:	Vast range 140 ⁰ C to 200 ⁰ C
Vapour Density	:	Not applicable



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Vapour Pressure for Permethrin TC	:	0.7mPa at 20 C
Specific Gravity	:	0.9 gr./ml at 20 ⁰ C
pH	:	Not applicable
Solubility in Water	:	< 0.02 ppm

10. STABILITY AND REACTIVITY

Conditions to Avoid	:	Excessive heat and fire
Hazardous Polymerization	:	Will not occur

11. TOXICOLOGICAL INFORMATION for formulated product

Acute Toxicity (as per acute toxicity studies)

LD ₅₀ > 2000 mg/Kg	(rat – oral)
LD ₅₀ >2000 mg/Kg	(rabbit – dermal)
eye irritation:	minimally (rabbit)
skin irritation:	mild (rabbit)
sensitizer:	negative (mice)
LC ₅₀ > 5000 mg/m ³ ,4 h	(rat – inhalation)- calculated

Effects from Overexposure

Permethrin has low oral, dermal and inhalation toxicity, and is minimally irritating to eyes and practically non-irritating to the skin. Experience to date indicated that contact with Permethrin has rarely produced skin sensations such a numbing, burning or tingling. These sensations are reversible and usually subside within 12 hours. Large, toxic doses administered to laboratory animals have produced symptoms such as diarrhea, salivation, tremors and intermittent convulsions. Overexposure of animals of Permethrin via inhalation has also produced hyperactivity and hypersensitivity.

PBO may cause vomiting and diarrhea.

Chronic Effects from Overexposure

In studies with laboratory animals, Permethrin did not cause reproductive toxicity or tertogenicity. Chronic feeding studies in mice and rats with Permethrin resulted in the conclusion that Permethrin's potential for oncogenicity is low. The likelihood of oncogenic effects in humans is non-existent or extremely low. Long term feeding studies in animals resulted in increased liver and kidney weights, induction of the liver microsomal drug metabolizing enzyme system and histopathological changes in the lungs and liver. An overall absence of genotoxicity has been demonstrated in mutagenicity testing with Permethrin.

PBO is not a carcinogen.

12. ENVIRONMENTAL INFORMATION for Permethrin and PBO

Physical Environmental Properties

Permethrin has a moderate rate of degradation in soil. Because of its highly affinity for organic matter ($K_{OC}=86,000$), there is little potential for movement in soil or entry into ground water. The potential for bio-concentration and accumulation in the environment is low ($BCF=500$).

PBO is mobile in soil, does not leach to groundwater. Is biodegradable and not expected to bio-accumulate.

Environmental Toxicology

Permethrin and PBO are highly toxic to fish (LC_{50} , 96 hs: $20 \mu\text{g/l}$ to $50 \mu\text{g/l}$). Marine species are often more tolerant of Permethrin than the fish and arthropods. Care should be taken to avoid contamination of the aquatic environment.

Permethrin and PBO are slightly toxic to birds and oral LD_{50} values are greater than 9000 mg/kg. Longer dietary studies showed that concentrations of up to 500 ppm in the diet had no effect on bird reproduction.

Permethrin is highly toxic to bees.

13. DISPOSAL CONSIDERATIONS

Open dumping of this pesticide is prohibited. If spilled material cannot be disposed of by use according to label instructions, an acceptable method of disposal is to incinerate in accordance with environmental regulations. Container which held these pesticides should be cleaned, prior to disposal, by triple-rinsing.

14. TRANSPORT INFORMATION

UN-nr	:	3082
RT MDR	:	ADR (Road)
Transport	:	Environmentally hazardous subst., liquid, (Permethrin 10%)
Class	:	9
O.A.C.I. (Air)	:	O.A.C.I. (Air)
Transport	:	Pesticide, liquid, toxic n.o.s. (Permethrin 10%)
Group	:	III
Passenger	:	Yes
Cargo	:	Yes

I.M.D.G. (Maritime)

Transport	:	marine pollutant (Permethrin 10%)
Class	:	9
Group	:	III

15. REGULATORY INFORMATION

Hazards Identification

Xn	:	Harmful
N	:	Very toxic to aquatic organisms

Safety Sentences (S)

S52	:	Keep out of reach of children
S13	:	Keep away from food, drink and animal feeding stuff
S20 21	:	When using, do not eat, drink or smoke
S49	:	Keep in original container
S61	:	Avoid release into the environment

16. OTHER INFORMATION

The data contained herein is based on current knowledge and experience and is made in conformity with applicable regulations and in good faith. This safety data sheet is additional to technical data sheets but does not replace them. It does not dispense the user, by all means, to know and apply all the regulatory requirements. He will undertake all responsibility concerning the precautions related to the use made with this product.

The purpose of this safety data sheet is to describe the product in terms of its safety requirements. The data does not signify any warranty with regard to the product properties.