



Material Safety Data Sheet (MSDS)
Tennin 260 EC

IDENTIFICATION OF THE SUPPLIER:

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PRODUCT IDENTIFICATION:

Common name: Permethrin 9.75% + Tetramethrin 1.5% + PBO 11.25% w/v

Trade Name: Tennin 260 EC

Chemical name:

permethrin: (3-phenoxyphenyl)methyl 3-(2,2-dichloroethenyl)-2,2-dimethylcyclopropanecarboxylate

tetramethrin: (1,3,4,5,6,7-hexahydro-1,3-dioxo-2H-isoindol-2-yl)methyl 2,2-dimethyl-3-(2-methyl-1-propenyl)cyclopropanecarboxylate

P.B.O: 5-[2-(2-butoxyethoxy)ethoxymethyl]-6-propyl-1,3-benzodioxole; 2-(2-butoxyethoxy)ethyl 6-propylpiperonyl ether

Empirical formula:

Permethrin: C₂₁H₂₀Cl₂O₃

Tetramethrin: C₁₉H₂₅NO₄

PBO: C₁₉H₃₀O₅

Molecular Weight:

Permethrin: 391.3

Tetramethrin: 331.4

PBO: 338.4

PRODUCT COMPOSITION:

Active ingredient:	% w/v	CAS#
Permethrin	9.75%	[51-03-6]
Tetramethrin	1.5%	[7696-12-0]
P.B.O	11.25%	[52645-53-1]

Inert Ingredients:

Emulsifier	8% w/v	--
Solvent	up to 100% w/v	--



HAZARDS IDENTIFICATION:

Main hazard

Toxicity class: EPA (Formulation) IV

Flammability: Flammable

Eye contact: Moderate irritant

Skin contact: Moderate irritant.

Oral : Tetramethrin > 5000 mg/kg Permethrin 6000 mg/kg,P.B.O
>7500mg/kg

Inhalation: Tetramethrin >2.73 mg/L,Permethrin >685 mg/ L, P.B.O >5.9
mg/L

FIRST-AID MEASURES:

Obtain the MSDS, and if available, the product container or label with you when calling a poison control center or doctor, or going for treatment.

Eye:

Wash immediately and continuously with flowing water for at least 30 minutes. Remove contact lenses after the first 5 minutes and continue washing. Obtain prompt medical consultation, preferably from an ophthalmologist.

Skin:

Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

Ingestion:

If swallowed, seek medical advice immediately and show this container or label.

Do not induce vomiting.

Inhalation:

Prolonged excessive exposure may cause adverse effects. May cause respiratory irritation and central nervous system depression.

Move person to fresh air. If not breathing, call an ambulance, and then give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask etc).

Call a poison control center or doctor for treatment advice. If breathing is difficult, oxygen should be administered by qualified personnel.

Advice to physician: There is no specific antidote



FIRE-FIGHTING MEASURES: -

Suitable extinguishing Media:

Extinguishing media - small fires Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Extinguishing media - large fires : Alcohol-resistant foam

Extinguishing media which must not be used for safety reasons:

As the product contains combustible organic components, fire will produce dense black smoke containing hazardous products of combustion

Exposure to decomposition products may be a hazard to health.

Flash back possible over considerable distance.

Special protective equipment for firefighters:

Wear full protective clothing and self-contained breathing apparatus

Further information:

Do not allow run-off from fire fighting to enter drains or water courses.

Cool closed containers exposed to fire with water spray

ACCIDENTAL RELEASE:

Personal precautions:

Avoid contact with skin and eyes. Do not inhale fumes. For personal protection

Environmental precautions:

Do not allow to enter drains or water courses. When the product contaminates public waters, inform appropriate authorities in accordance with local regulations.

Methods for cleaning up

Small spills:

For small liquid spills, soak up with sand or other suitable noncombustible absorbent material, such as sawdust, and place into containers for subsequent disposal.

Large spills: For large spills, contain liquid far ahead of spill. Contain spillage and contaminated water for subsequent disposal. Do not flush spilled material into drains. Keep spectators away.

Additional advice:

If the product contaminates rivers and lakes or drains inform respective authorities





PERSONAL PROTECTION/SAFTETY:

Respiratory	: Approved respiration
Eye and Face	: Safety goggles or face shield.
Hands	: Gloves.

PERSONAL PROTECTION/SAFTETY: (Follow up)

Body	: Boots and apron and hat.
Ventilation	: provide local exhaust.
Industrial hygiene	: Safety shower and eye wash should be provided at work place. Do not eat, drink or smoke while Working. Wash hands before Meals and after work with soap.

HANDLING AND STORAGE:

Handling:

keep away from heat. Keep away from sources of ignition. Ground all equipment containing material.

Do not ingest. Do not breathe gas/fumes/ vapor/spray. Avoid contact with skin. Wear suitable protective clothing.

If ingested, seek medical advice immediately and show the container or the label.

Storage:

Store in a segregated and approved area .

Keep container in a cool, well-ventilated area.

Keep container tightly closed and sealed until ready for use.

Avoid all possible sources of ignition (spark or flame).

Keep out of the reach of children.

Keep away from food, drink and animal feeding stuffs.

STABILITY AND REACTIVITY

-Storage stability:



Physically and chemically stable for at least 3 years when stored in the original unopened sales container at ambient temperatures

-Hazardous decomposition products:

Combustion or thermal decomposition will evolve toxic and irritant vapors

Hazardous reactions:

Unknown. Hazardous polymerization does not occur. Stable under normal conditions.

PHYSICAL -CHEMICAL DATA(product) :

State: liquid

Colour : yellow

Odour: Characteristic odor

Density: 0.93 g/cm³ at 20 °C

PH: 4-7

Flash Point: 40 °C

ACUTE TOXICITY (IRRITATION, SENSITISATION ETC.)

ACUTE TOXICITY: (for active only)

Permethrin :

Oral Oral LD₅₀ values of permethrin depend on such factors as: carrier, *cis/trans* ratio of the sample, the test species, its sex, age and degree of fasting; values reported sometimes differ markedly. Values for a *cis/trans* ratio of *c.* 40:60 are: for rats 430-4000, mice 540-2690 mg/kg; with a 20:80 ratio, the LD₅₀ is *c.* 6000 mg/kg.

Skin and eye Acute percutaneous LD₅₀ for rats >2500, rabbits >2000 mg/kg. Mild eye and skin irritant (rabbits). Moderate skin sensitiser.

Inhalation LC₅₀ (3 h) for mice and rats >685 mg/m³ air; (separate study gives >13 800 mg/m³).

NOEL In 2 y feeding trials, rats receiving 100 mg/kg diet showed no ill-effects.

ADI (JMPR) 0.05 mg/kg b.w. (for tech., with *cis/trans* ratios 25:75 to 40:60) [1999].

Water GV 20 µg/l (based on ADI).

Other No mutagenic,

Tetramethrin

Oral Acute oral LD₅₀ for rats >5000 mg/kg.

Skin and eye Acute percutaneous LD₅₀ for rabbits >2000 mg/kg. Non-irritant to skin.

Inhalation LC₅₀ (4 h) for rats >2.73 mg/l air.

NOEL In 13 w feeding trials, dogs receiving 5000 mg/kg diet showed no ill-effects. In 6 mo feeding trials, no-effect level for rats was 1500 mg/kg diet.

Other No evidence of oncogenicity.



PBO:

Oral Acute oral LD₅₀ for rats and rabbits *c.* 7500 mg/kg.

Skin and eye Acute percutaneous LD₅₀ for rats >7950, rabbits 1880 mg/kg. Not irritant to eyes or skin; not a skin sensitiser.

Inhalation LC₅₀ for rats >5.9 mg/l.

NOEL (2 y) for mice and rats 30 mg/kg b.w. daily; (1 y) for dogs 16 mg/kg b.w. daily.

ADI (JMPR) 0.2 mg/kg b.w. [1995, 2001].

Other Not teratogenic, mutagenic or carcinogenic.

ECOLOGICAL INFORMATION: -

Permethrin

Birds Typical oral LD₅₀ values for a *cis/trans* ratio of *c.* 40:60 are: for chickens >3000, mallard ducks >9800, Japanese quail >13 500 mg/kg.

Fish LC₅₀ (96 h) for rainbow trout 2.5 µg/l; (48 h) for rainbow trout 5.4, bluegill sunfish 1.8 µg/l.

Daphnia LC₅₀ (48 h) 0.6 µg/l.

Bees Toxic to bees. LD₅₀ (24 h) (oral) 0.098 µg/bee; (topical) 0.029 µg/be

TETRAMETHRIN

Birds Acute oral LD₅₀ for bobwhite quail >2250 mg/kg. Dietary LC₅₀ for bobwhite quail and mallard ducks >5620 ppm.

Fish LC₅₀ (96 h) for rainbow trout 3.7, bluegill sunfish 16 µg/l.

Daphnia EC₅₀ (48 h) 0.11 mg/l.

Bees Toxic to bees.

PBO

Birds Acute oral LD₅₀ for bobwhite quail >2250 mg/kg.

Fish LC₅₀ (24 h) for carp 5.3 mg/l.

Daphnia LC₅₀ (24 h) 2.95 mg/l.

Algae EC₅₀ (cell volume) for *Chlorella fusca* 44 µmol/l (*Pestic. Sci.*, **47**, 337 (1996)).

Bees LD₅₀ >25 µg/bee.

Disposal Considerations

Engineering measures Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Occupational Exposure Limits

Exposure controls/personal protection

Wash hands, forearms, and face thoroughly after handling compounds and before eating, smoking, using lavatory, and at the end of day.

Hygiene measures

Skin and body

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Personal protective equipment

Vapor respirator. Be sure to use an approved/certified respirator or equivalent.

Wear appropriate respirator when ventilation is inadequate. Lab coat.

Hands Chemical resistant gloves.

Eyes Safety glasses.

Respiratory system

Disposal Considerations (follow up)

Product:

Do not contaminate ponds, waterways or ditches with chemical or used container.

Do not dispose of waste into sewer.

Where possible recycling is preferred to disposal or incineration.

If recycling is not practicable, dispose of in compliance with local regulations.

Contaminated packaging :

Empty remaining contents

Transport Information

International transport regulations

UN number: 2903

Proper shipping name: pesticide, liquid, toxic, flammable, n.o.s

ADR/RID Clas: 6.1

Packing group: 609

Proper shipping name: pesticide, liquid, toxic, flammable, , n.o.s

