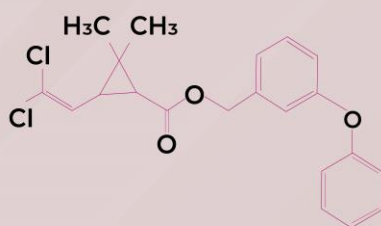


PERMETHRIN (WITH CEP)



PRODUCT IN FOCUS

EXSYN[®]
ESSENTIAL CHEMISTRY

Permethrin (with CEP)

INTRODUCTION

Permethrin is an insecticide in the pyrethroid family. Pyrethroids are synthetic chemicals that act like natural extracts from the chrysanthemum flower.

Manufacture

Permethrin is produced by condensation of 3-phenoxybenzyl alcohol with (1RS)-cis/trans-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylic acid.

Synonyms	3-(2,2-Dichloroethenyl)-2,2-dimethylcyclopropanecarboxylic acid (3-phenoxyphenyl)-methyl ester; 3-phenoxybenzyl (1RS)-cis-trans-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylate
CAS no.	52645-53-1
EINECS no.	258-067-9
Molecular formula	C ₂₁ H ₂₀ Cl ₂ O ₃
Molecular weight	391.3
Structure	

APPLICATIONS

Permethrin is used in agricultural, textile, food and pharma industries. Some of the key applications where it is used are:

Insecticide

- ✔ to protect crops & to kill livestock parasites
- ✔ on structures and buildings, including livestock housing and food-handling establishments. Permethrin can also be used in numerous residential sites, both indoor and outdoor and on pets
- ✔ to prevent insect attack on woollen products
- ✔ in aircraft disinfection

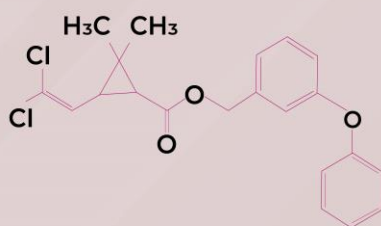
Insect repellent

- ✔ as a personal protective measure, permethrin is applied to clothing. It is a cloth impregnant, notably in mosquito nets and field wear.
- ✔ while permethrin may be marketed as an insect repellent, it doesn't prevent insects from landing. Instead, it works by incapacitating or killing insects before they can bite.
- ✔ in pet flea preventive collars or treatment (safe for use on dogs but not cats)
- ✔ in timber treatment

Medicinal

- ✔ available for topical use as a cream or lotion
- ✔ used for the treatment and prevention in exposed individuals of head lice
- ✔ used as a medication in the treatment of scabies in humans and animals

PERMETHRIN (WITH CEP)



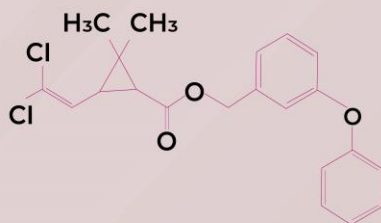
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SPECIFICATIONS - EP

Test	Unit	Specification
Appearance	-	Colorless or slightly brownish viscous liquid, semi solid or crystalline solid.
Solubility	-	Practically insoluble in water, very soluble in heptane, freely soluble in anhydrous ethanol, sparingly soluble in ethylene glycol.
Identification		
- by IR	-	IR Spectrum exhibits maxima which are only at the same wave number as those in "Reference Spectrum of Permethrin Reference Standard"
- by HPLC	-	The 2 Principal peaks in the chromatogram obtained with the test solution are similar in retention time and in cis/trans ratio to the 2 principal peaks in the chromatogram obtained with the reference solution
Water (by KF)	%	NMT 0.25
Sulphated Ash	%	NMT 0.1
Related Substances (by GC)		
- Impurity B	%	NMT 0.15
- Impurity C	%	NMT 0.15
- Impurity G	%	NMT 0.10
- Unspecified Impurities	%	NMT 0.10
- Total Impurity	%	NMT 0.50
Residual Solvent		
- IPA	ppm	NMT 5000
- Toluene	ppm	NMT 890
- DMF	ppm	NMT 880
- *Benzene	ppm	NMT 2

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SPECIFICATIONS - EP (continued...)

Test	Unit	Specification
Assay (on anhydrous basis)	%	98.0 - 102.0
Cis isomer	%	23.0 - 27.0
Trans isomer	%	73.0 - 77.0

Note : Before sampling stir well & warm up to 40°C Permethrin solidifies below 35°C. In case of solidification please warm up to 70 to 80°C to get liquid (Before use). This does not affect the quality

**Benzene is not used in process, but tested due to the use of Toluene*

PACKAGING OPTIONS

25 Kg HDPE Drums

STORAGE

Store in a sheltered place away from sources of heat and moisture

CERTIFICATION

WHO-GMP, DMF & CEP

No matter the quantity you need, our exceptional quality and service will make ExSyn your supplier of choice! If you need any additional information or SDS, please contact us.