



PRODUCT IN FOCUS

EXSYN[®]
ESSENTIAL CHEMISTRY

Permethrin

INTRODUCTION

Permethrin is an insecticide in the pyrethroid chemical family. Being a neurotoxic synthetic pyrethroid, it acts on the nervous system of insects. It interferes with sodium channels to disrupt the function of neurons and causes muscles to spasm, culminating in paralysis and death of arthropod. It affects sodium transport across the neuronal membranes in arthropods, thus causing depolarization. It is a mixture of a cis-trans isomer.

As an antiparasitic active ingredient, Permethrin finds an increasing use in veterinary and human medicines. It is used in livestock and pets against external parasites (lice, mites, fleas, flies, ticks, etc.). It acts as a mild repellent. It has a role as a pyrethroid ester insecticide, a pyrethroid ester acaricide, an ectoparasiticide and a scabicide. It is a member of cyclopropanes and a cyclopropane-carboxylate ester.

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	$C_{21}H_{20}Cl_2O_3$

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



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SPECIFICATIONS

Test	Unit	Specification
Description & Solubility	-	Yellow brownish coloured liquid which may solidify on standing or at lower temperature. Soluble in alcohol (96 % w/v) , Acetone, ether and hydrocarbons (Toluene)
Identification by IR	-	IR Spectrum exhibits maxima which are only at the same wave number as those in "Reference Spectrum of Permethrin- Working Standard" / CRS
Identification by HPLC	-	Retention time of Permethrin matches with retention time of standard in the assay test
Loss on Drying	%	NMT 0.2
Sulphated Ash	%	NMT 0.2
Assay by HPLC (on dried Basis)	%	98.0 - 101.0
Trans Isomer	%	73.0 - 77.0
Cis Isomer	%	23.0 - 27.0

ExSyn also offers Permethrin complying to Ph.Eur. standards

PACKAGING OPTIONS

25 Kg HDPE Drums

STORAGE

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

Permethrin offered by ExSyn is WHO-GMP certified. 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 get in touch with us.