

PRODUCT INFORMATION



Cypermethrin-d₅

Item No. 39265

CAS Registry No.: 2140327-50-8
Formal Name: 3-(2,2-dichloroethenyl)-2,2-dimethylcyclopropanecarboxylic acid, cyano[3-(phenoxy-2,3,4,5,6-d₅)phenyl]methyl ester

MF: C₂₂H₁₄Cl₂D₅NO₃

FW: 421.3

Chemical Purity: ≥95% (Cypermethrin)

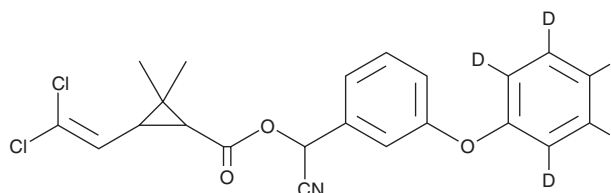
Deuterium

Incorporation: ≥99% deuterated forms (d₁-d₅); ≤1% d₀

SSupplied as: A neat oil

Storage: -20°C

Stability: ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Cypermethrin-d₅ is intended for use as an internal standard for the quantification of cypermethrin (Item No. 24117) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated versus unlabeled).

Cypermethrin-d₅ is supplied as a neat oil. A stock solution may be made by dissolving the cypermethrin-d₅ in the solvent of choice, which should be purged with an inert gas. Cypermethrin-d₅ is soluble in acetonitrile. Cypermethrin-d₅ is slightly soluble in chloroform and methanol.

Description

Cypermethrin is a type II pyrethroid insecticide.¹⁻⁴ It prolongs opening of sodium channels resulting in membrane depolarization and a conductance block of the insect nervous system, and point mutations in sodium channels induce cypermethrin-resistance in house flies, cockroaches, and mosquitos.³ Cypermethrin (1-1.5 mg) reduces survival of ticks (*H. anatolicum*) *in vitro* in a concentration-dependent manner.² Topical administration of cypermethrin reduces the number of ticks on infested cattle. Cypermethrin (5 and 10 ppm) reduces survival of lice (*D. ovis*) in sheep fleece and prevents re-infestation in contact-challenged sheep for 7 and 19 weeks, respectively.¹ It induces developmental neurotoxicities in zebrafish, increasing mortality and edema and inducing body-axis curvature when used at concentrations ranging from 50 to 200 µg/L.⁵ Cypermethrin (15 mg/kg twice weekly for 24 weeks) also induces Parkinson's disease-like neurodegeneration in rats, decreasing locomotor activity, dopamine production, and the number of tyrosine hydroxylase positive (TH⁺) neurons in the substantia nigra.⁴ Formulations containing cypermethrin have been used in the control of insects in agriculture and on commercial and residential premises.

References

1. Hall, C.A. *Aust. Vet. J.* **54**(10), 471-472 (1978).
2. Sajid, M.S., Iqbal, Z., Khan, M.N., *et al. Parasitol Res.* **105**(4), 1133-1138 (2009).
3. Hu, Z., Du, Y., and Dong, K. *Insect Biochem. Mol. Biol.* **41**(1), 9-13 (2011).
4. Singh, A.K., Tiwari, M.N., Prakash, O., *et al. Curr. Neuropharmacol.* **10**(1), 64-71 (2012).
5. DeMicco, A., Cooper, K.R., Richardson, J.R., *et al. Toxicol. Sci.* **113**(1), 177-186 (2010).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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