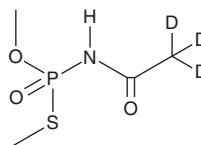


PRODUCT INFORMATION



Acephate-d₃ Item No. 39579

CAS Registry No.: 2140327-70-2
Formal Name: N-acetyl-d₃-phosphoramidothioic acid,
O,S-dimethyl ester
MF: C₄H₇D₃NO₃PS
FW: 186.2
Chemical Purity: ≥98% (Acephate)
Deuterium
Incorporation: ≥99% deuterated forms (d₁-d₃); ≤1% d₀
Supplied as: A solid
Storage: -20°C
Stability: ≥4 years



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

Laboratory Procedures

Acephate-d₃ is intended for use as an internal standard for the quantification of acephate (Item no. 24038) 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).

Acephate-d₃ is supplied as a solid. A stock solution may be made by dissolving the acephate-d₃ in the solvent of choice, which should be purged with an inert gas. Acephate-d₃ is soluble in chloroform and DMSO.

Description

Acephate is an organophosphate insecticide.¹ It inhibits acetylcholinesterase (AChE; K_i = 7 mM for the rat enzyme).² Acephate is lethal to houseflies (LD₅₀ = 1.8 mg/kg), mayflies, stoneflies, damselflies, and mosquitoes (LC₅₀s = 3.2, 37, 140, and 650 ppm, respectively).^{1,2} It is toxic to male and female rats (LD₅₀s = 945 and 866 mg/kg, respectively).¹ *In vivo*, acephate (140 mg/kg) also increases blood glucose, plasma corticosterone, hepatic glycogen levels, as well as decreases the activity of hepatic glucose-6-phosphate dehydrogenase (G6PDH) and adrenal cortisol levels, in rats.³ Formulations containing acephate have been used in the control of insects in agriculture and horticulture.

References

1. Rojakovick, A.S. and March, R.B. In vitro and in vivo inhibition of house fly acetylcholinesterase by the N-acetyl phosphoramidothioate orthene. *J. Econ. Entomol.* **65**(5), 1505-1507 (1972).
2. Hussain, M.A., Mohamad, R.B., and Oloffs, P.C. Studies on the toxicity, metabolism, and anticholinesterase properties of acephate and methamidophos. *J. Environ. Sci. Health B* **20**(1), 129-147 (1985).
3. Joshi, A.K.R. and Rajini, P.S. Reversible hyperglycemia in rats following acute exposure to acephate, an organophosphorus insecticide: Role of gluconeogenesis. *Toxicology* **257**(1-2), 40-45 (2009).

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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