

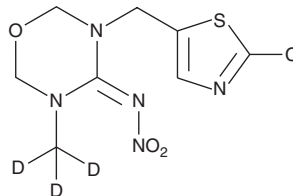
PRODUCT INFORMATION



Thiamethoxam-d₃

Item No. 35685

CAS Registry No.: 1294048-82-0
Formal Name: 3-[(2-chloro-5-thiazolyl)methyl]tetrahydro-5-(methyl-d₃)-N-nitro-4H-1,3,5-oxadiazin-4-imine
MF: C₈H₇ClD₃N₅O₃S
FW: 294.7
Chemical Purity: ≥98% (Thiamethoxam)
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

Thiamethoxam-d₃ is intended for use as an internal standard for the quantification of thiamethoxam (Item No. 25784) 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).

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

Description

Thiamethoxam is a neonicotinoid insecticide and a prodrug form of the neonicotinoid insecticide clothianidin (Item No. 29605).^{1,2} It binds to nicotinic acetylcholine receptors (nAChRs) with low affinity (IC₅₀ = 5,000 nM for housefly head membranes) and does not activate non-desensitizing nAChRs in cockroach neurons *in vitro* (IC₅₀ = >3,000 nM).¹ Thiamethoxam induces mortality in a variety of insects, including *A. craccivora*, *M. persicae*, and *S. littoralis* when administered in contact/feeding assays (LC₈₀s = 12, 3, and 3 mg AI/L, respectively) and *via* systemic administration (LC₈₀s = 0.8, 0.2, and 0.8 mg AI/L, respectively), as well as *N. lugens* and *D. balteata* in contact/feeding assays (LC₈₀s = 0.8 mg AI/L for both).² Thiamethoxam also induces 100% mortality of second instar larvae of the fall armyworm *S. frugiperda* and the tobacco budworm *H. virescens* in leaf-dip bioassays when used at a concentration of 200 mg/L.¹ Formulations containing thiamethoxam have been used in the control of insects in agriculture.

References

1. Nauen, R., Ebbinghaus-Kintscher, U., Salgado, V.L., *et al.* Thiamethoxam is a neonicotinoid precursor converted to clothianidin in insects and plants. *Pest. Biochem. Phys.* **76(2)**, 55-69 (2003).
2. Maienfisch, P., Huerlimann, H., Rindlisbacher, A., *et al.* The discovery of thiamethoxam: A second-generation neonicotinoid. *Pest. Manag. Sci.* **57(2)**, 165-176 (2001).

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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