

PRODUCT INFORMATION



Difenoconazole-d₆ (hydrochloride)

Item No. 27834

CAS Registry No.: 2748435-81-4
Formal Name: 1-((2-(2-chloro-4-(4-chlorophenoxy)phenyl)-4-(methyl-d₃)-1,3-dioxolan-2-yl-4,5,5-d₃)methyl)-1H-1,2,4-triazole, monohydrochloride

MF: C₁₉H₁₁D₆Cl₂N₃O₃ • HCl
FW: 448.8

Chemical Purity: ≥98% (mixture of diastereomers) (Difenoconazole)

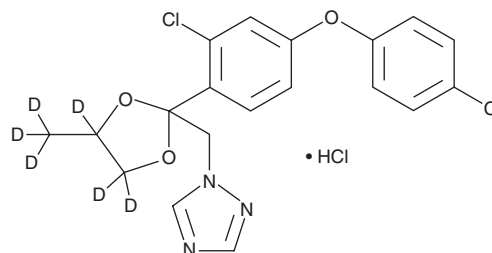
Deuterium

Incorporation: ≥99% deuterated forms (d₁-d₆); ≤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

Difenoconazole-d₆ (hydrochloride) is intended for use as an internal standard for the quantification of difenoconazole (Item No. 24053) 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).

Difenoconazole-d₆ (hydrochloride) is supplied as a solid. A stock solution may be made by dissolving the difenoconazole-d₆ (hydrochloride) in the solvent of choice. Difenoconazole-d₆ (hydrochloride) is slightly soluble in the organic solvent methanol, which should be purged with an inert gas.

Description

Difenoconazole is a triazole fungicide.¹ It is active against eight *F. graminearum* isolates (EC₅₀s = 1.69-19.6 mg/L) and *A. sonali*, *F. fulva*, *B. cinerea*, and *R. solani* (EC₅₀s = 0.131, 0.069, 0.297, and 0.252 mg/L, respectively).^{1,2} Difenoconazole is active against *A. caricae* (EC₅₀ = 2 ppm) and reduces the number of leaf and fruit black spots, as well as decreases leaf drop, in papaya plants when applied thirteen times at a rate of 100 g/ha.³ It is lethal to water fleas (LC₅₀ = 0.298 µg/ml) and zebrafish embryos, larvae, and adults (LC₅₀s = 2.34, 1.17, and 1.45 mg/L, respectively).^{2,4} Difenoconazole induces pericardial and yolk sac edema in zebrafish embryos, body blackening and slowed heart rate in larvae, and decreased body weight and length in adults in a concentration-dependent manner.⁴ Formulations containing difenoconazole have been used as fungicides in agriculture, as well as in commercial, industrial, and residential areas.

References

1. Rekanović, E., Mihajlović, M., and Potočnik, I. *In vitro* sensitivity of *Fusarium graminearum* (schwabe) to difenoconazole, prothioconazole and thiophanate-methyl. *Pestic. Phytomed.* **25(4)**, 325-333 (2010).
2. Dong, F., Li, J., Chankvetadze, B., et al. Chiral triazole fungicide difenoconazole: Absolute stereochemistry, stereoselective bioactivity, aquatic toxicity, and environmental behavior in vegetables and soil. *Environ. Sci. Technol.* **47(7)**, 3386-3394 (2013).
3. Vawdrey, L.L., Grice, K.R.E., and Westerhuis, D. Field and laboratory evaluations of fungicides for the control of brown spot (*Corynespora cassiicola*) and black spot (*Asperisporium caricae*) of papaya in far north Queensland, Australia. *Aus. Plant Path.* **37(6)**, 552-558 (2008).
4. Mu, X., Pang, S., Sun, X., et al. Evaluation of acute and developmental effects of difenoconazole via multiple stage zebrafish assays. *Environ. Pollut.* **175(2013)**, 147-157 (2013).

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.

WARRANTY AND LIMITATION OF REMEDY

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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