

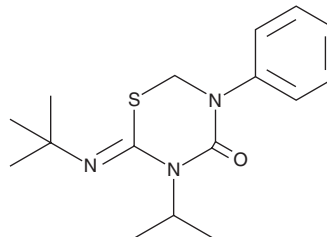
PRODUCT INFORMATION



Buprofezin

Item No. 24137

CAS Registry No.: 69327-76-0
Formal Name: 2-[(1,1-dimethylethyl)imino]tetrahydro-3-(1-methylethyl)-5-phenyl-4H-1,3,5-thiadiazin-4-one
Synonym: NNI-750
MF: C₁₆H₂₃N₃OS
FW: 305.4
Purity: ≥95%
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

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

Description

Buprofezin is an insecticide that acts by inhibiting chitin synthesis.¹ It inhibits chitin synthesis by 35% in *N. lugens* nymphs when used at a concentration of 10 ppm. Buprofezin (500 ppm) decreases the lifespan of adult *T. vaporariorum* with 17.9% mortality after 24 hours.² It inhibits mitochondrial respiration when used at concentrations of 10 and 30 μM, reduces the expression of enzymes involved in the tricarboxylic acid (TCA) cycle, and stimulates glycolysis in HepG2 cells.³ It also dose-dependently increases the production of reactive oxygen species (ROS) *in vitro*. Buprofezin accumulates in mouse liver following oral administration of doses ranging from 46.3 to 417 mg/kg. It is not mutagenic and has LD₅₀ values of 6,810 and 5,010 mg/kg in male and female rats, respectively.⁴ Formulations containing buprofezin have been used as insecticides.

References

1. Izawa, Y., Uchida, M., Sugimoto, T., *et al.* Inhibition of chitin biosynthesis by buprofezin analogs in relation to their activity controlling *Nilaparvata lugens* Stål. *Pest. Biochem. Phys.* **24(3)**, 343-347 (1985).
2. Yasui, M., Fukada, M., and Maekawa, S. Effects of buprofezin on different developmental stages of the greenhouse whitefly, *Trialeurodes vaporariorum* (WESTWOOD) (Homoptera : Aleyrodidae). *Appl. Ent. Zool.* **20(3)**, 340-347 (1985).
3. Ji, X., Ku, T., Zhu, N., *et al.* Potential hepatic toxicity of buprofezin at sublethal concentrations: ROS-mediated conversion of energy metabolism. *J. Hazard. Mater.* **320**, 176-186 (2016).
4. Xiao, H., Yang, Y., Tang, L., *et al.* Observation of toxicity and mutagenesis of insect growth regulator buprofezin. *Nanj. Yixue. Xue.* **12(1)**, 23-26 (1992).

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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CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD

ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897

[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM

WWW.CAYMANCHEM.COM