

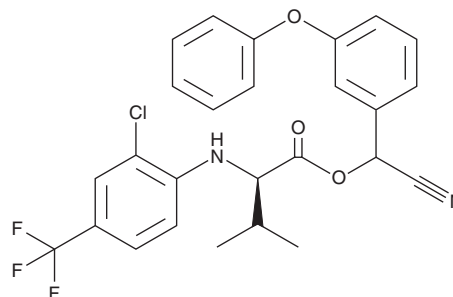
# PRODUCT INFORMATION



## $\tau$ -Fluvalinate

Item No. 34520

**CAS Registry No.:** 102851-06-9  
**Formal Name:** N-[2-chloro-4-(trifluoromethyl)phenyl]-D-valine, cyano(3-phenoxyphenyl)methyl ester  
**Synonym:** *tau*-Fluvalinate  
**MF:** C<sub>26</sub>H<sub>22</sub>ClF<sub>3</sub>N<sub>2</sub>O<sub>3</sub>  
**FW:** 502.9  
**Purity:** ≥90%  
**UV/Vis.:**  $\lambda_{\text{max}}$ : 256 nm  
**Supplied as:** A liquid  
**Storage:** -20°C  
**Stability:** ≥4 years



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

### Laboratory Procedures

$\tau$ -Fluvalinate is supplied as a liquid. A stock solution may be made by dissolving the  $\tau$ -fluvalinate in the solvent of choice, which should be purged with an inert gas.  $\tau$ -Fluvalinate is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of  $\tau$ -Fluvalinate in these solvents is approximately 10 mg/ml.

### Description

$\tau$ -Fluvalinate is a pyrethroid acaricide.<sup>1</sup> It induces tail currents in Western honeybee (*A. mellifera*) voltage-gated sodium channels (AmNa<sub>v</sub>1) expressed in *Xenopus* oocytes (EC<sub>50</sub> = 60 nM). It also induces tail currents in honeybee parasitic Varroa mite (*V. destructor*) Na<sub>v</sub>1 channels (VdNa<sub>v</sub>1) expressed in *Xenopus* oocytes (EC<sub>50</sub> = 160 nM) with a faster tail current decay than that of AmNa<sub>v</sub>1 channels. Topical application of  $\tau$ -fluvalinate (2  $\mu$ l) in combination with coumaphos (Item No. 24230), atrazine (Item No. 13375), 2,4-DMPF, chlorpyrifos (Item No. 21412), and chlorothalonil (Item No. 24142) does not affect honeybee queen mass, egg-laying patterns, or the mass of daughter worker bees at emergence.<sup>2</sup> Formulations containing  $\tau$ -fluvalinate have been used to control Varroa mites in beehives.

### References

- Gosselin-Badaroudine, P. and Chahine, M. Biophysical characterization of the *Varroa destructor* Na<sub>v</sub>1 sodium channel and its affinity for  $\tau$ -fluvalinate insecticide. *FASEB J.* **31(7)**, 3066-3071 (2017).
- McAfee, A. Honey bee queen health is unaffected by contact exposure to pesticides commonly found in beeswax. *Sci. Rep.* **11(1)**, 15151 (2021).

#### 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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