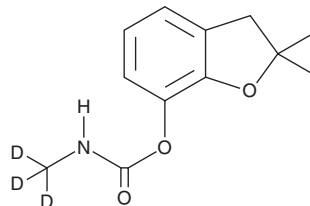


# PRODUCT INFORMATION



## Carbofuran-d<sub>3</sub> Item No. 39558

**CAS Registry No.:** 1007459-98-4  
**Formal Name:** N-(methyl-d<sub>3</sub>)-carbamic acid, 2,3-dihydro-2,2-dimethyl-7-benzofuranyl ester  
**Synonym:** BAY 70143-d<sub>3</sub>  
**MF:** C<sub>12</sub>H<sub>12</sub>D<sub>3</sub>NO<sub>3</sub>  
**FW:** 224.3  
**Chemical Purity:** ≥98% (Carbofuran)  
**Deuterium Incorporation:** ≥99% deuterated forms (d<sub>1</sub>-d<sub>3</sub>); ≤1% d<sub>0</sub>  
**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

Carbofuran-d<sub>3</sub> is intended for use as an internal standard for the quantification of carbofuran (Item No. 25635) 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).

Carbofuran-d<sub>3</sub> is supplied as a solid. A stock solution may be made by dissolving the carbofuran-d<sub>3</sub> in the solvent of choice. Carbofuran-d<sub>3</sub> is slightly soluble in methanol (warm) and chloroform.

### Description

Carbofuran is a carbamate insecticide that inhibits acetylcholinesterase (AChE) in insects and mammals ( $K_{a,s}$  = 9.4, 30, and 210  $\mu$ M for *M. domestica* brain, *A. mellifera* brain, and bovine erythrocyte AChE, respectively).<sup>1</sup> It also inhibits AChE from rat and human erythrocytes with IC<sub>50</sub> values of 40 and 25 nM, respectively.<sup>2</sup> It is toxic to the housefly *M. domestica* (LD<sub>50</sub> = 4.6 mg/kg) and fourth-instar larvae of the mosquito *C. pipiens* with an LC<sub>50</sub> value of 0.054 ppm. Carbofuran is toxic to birds, rats (LD<sub>50</sub> = 4-11 mg/kg), and other mammals, including dogs, sheep, and cattle, and is considered an environmental toxin.<sup>1,3</sup> Formulations containing carbofuran have been used in agriculture for the control of insects, nematodes, mites, and ticks.

### References

1. Yu, C., Metcalf, R.L., and Booth, G.M. Inhibition of acetylcholinesterase from mammals and insects by carbofuran and its related compounds and their toxicities toward these animals. *J. Agric. Food Chem.* **20**(5), 923-926 (1972).
2. Rao, P.S., Roberts, G.H., Pope, C.N., et al. Comparative inhibition of rodent and human erythrocyte acetylcholinesterase by carbofuran and carbaryl. *Pestic. Biochem. Physiol.* **48**(2), 79-84 (1994).
3. Gupta, R.C. Carbofuran toxicity. *J. Toxicol. Environ. Health* **43**(4), 383-418 (1994).

#### 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

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