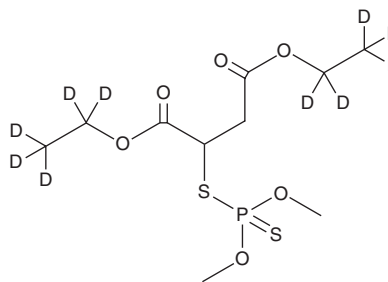


# PRODUCT INFORMATION



## Malathion-d<sub>10</sub> Item No. 39561

**CAS Registry No.:** 347841-48-9  
**Formal Name:** 2-[[dimethoxyphosphinothioyl]thio]-butanedioic acid, 1,4-di(ethyl-1,1,2,2,2-d<sub>5</sub>) ester  
**MF:** C<sub>10</sub>H<sub>9</sub>D<sub>10</sub>O<sub>6</sub>PS<sub>2</sub>  
**FW:** 340.4  
**Chemical Purity:** ≥95% (Malathion)  
**Deuterium Incorporation:** ≥99% deuterated forms (d<sub>1</sub>-d<sub>10</sub>); ≤1% d<sub>0</sub>  
**Supplied as:** A solution in methanol  
**Storage:** -20°C  
**Stability:** 2 years



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

### Laboratory Procedures

Malathion-d<sub>10</sub> is intended for use as an internal standard for the quantification of malathion (Item No. 22998) 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).

Malathion-d<sub>10</sub> is supplied as a solution in methanol. To change the solvent, simply evaporate the methanol under a gentle stream of nitrogen and immediately add the solvent of choice. Malathion-d<sub>10</sub> is slightly soluble in chloroform.

### Description

Malathion is an organophosphate insecticide that inhibits acetylcholinesterase (AChE; IC<sub>50</sub>s = 370 and 160 μM for free and immobilized AChE, respectively, from bovine erythrocytes).<sup>1</sup> It is ovicidal and adulticidal to laboratory colonies of body lice when used at concentrations of 0.001 and 0.05%, respectively.<sup>2</sup> It is toxic to rats (LD<sub>50</sub> = 750 mg/kg) and teratogenic to zebrafish when used at concentrations ranging from 2 to 3 mg/L.<sup>3,4</sup> Formulations containing malathion have been used in the treatment of lice.

### References

1. Krstić, D.Z., Čolović, M., Kralj, M.B., *et al.* Inhibition of AChE by malathion and some structurally similar compounds. *J. Enzyme Inhib. Med. Chem.* **23(4)**, 562-573 (2008).
2. Cole, M.M. and Burden, G.S. Phosphorus compounds as ovicides and adulticides against body lice. *J. Econ. Entomol.* **49(6)**, 747-750 (1956).
3. DuBois, K.P., Doull, J., Deroin, J., *et al.* Toxicity and mechanism of action of some new insecticidal thionophosphates. *Arch. Ind. Hyg. Occup. Med.* **8(4)**, 350-358 (1953).
4. Cook, L.W., Paradise, C.J., and Lom, B. The pesticide malathion reduces survival and growth in developing zebrafish. *Environ. Toxicol. Chem.* **24(7)**, 1745-1750 (2005).

#### 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.

Copyright Cayman Chemical Company, 09/12/2023

#### 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