

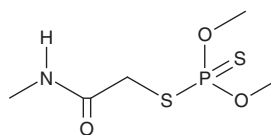
# PRODUCT INFORMATION



## Dimethoate

Item No. 24246

**CAS Registry No.:** 60-51-5  
**Formal Name:** phosphorodithioic acid, O,O-dimethyl S-[2-(methylamino)-2-oxoethyl] ester  
**Synonyms:** CL 12,880, ENT 24,650  
**MF:** C<sub>5</sub>H<sub>12</sub>NO<sub>3</sub>PS<sub>2</sub>  
**FW:** 229.3  
**Purity:** ≥98%  
**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

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

### Description

Dimethoate is an organophosphate pesticide.<sup>1</sup> It is acaricidal against Kanzawa spider mites (LC<sub>50</sub> = 7 ppm in an aqueous suspension) and inhibits purified Kanzawa spider mite acetylcholinesterase (AChE; IC<sub>50</sub> = 3.3-5.2 nM). Dimethoate (50-200 μM) reduces motility and viability and induces abnormal morphology of rat sperm.<sup>2</sup> It also increases production of malondialdehyde (MDA) and reduces superoxide dismutase (SOD), catalase (CAT), and glutathione peroxidase (Gpx) activities in rat epididymal sperm. *In vivo*, dimethoate (28 mg/kg per day) decreases sperm count, motility, and viability and increases the percentage of morphologically abnormal sperm in rats.<sup>3</sup> Dimethoate also induces formation of carcinomas in the adrenal, thyroid, and pituitary glands of male and female rats as well as testicular atrophy, chronic renal disease, polyarthritis, and parathyroid hyperplasia in male rats.<sup>4</sup> Formulations containing dimethoate have been used in the control of insects in agriculture, as well as in aquatic and residential areas.

### References

1. Kuwahara, M. Insensitivity of the acetylcholinesterase from the organophosphate-resistant Kanzawa spider mite, *Tetranychus kanzawa* Kishida (Acarina: Tetranychidae) to organophosphorus and carbamate insecticides. *Appl. Ent. Zool.* **17(4)**, 486-493 (1982).
2. Ben Abdallah, F., Fetoui, H., Zribi, N., *et al.* Antioxidant supplementations in vitro improve rat sperm parameters and enhance antioxidant enzyme activities against dimethoate-induced sperm damages. *Andrologia* **44(Suppl 1)**, 272-279 (2012).
3. Abdallah, F.B., Slima, A.B., Dammak, I., *et al.* Comparative effects of dimethoate and deltamethrin on reproductive system in male mice. *Andrologia* **42(3)**, 182-186 (2010).
4. Reuber, M.D. Carcinogenicity of dimethoate. *Environ. Res.* **34(2)**, 193-211 (1984).

#### 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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