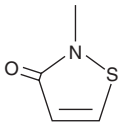
PRODUCT INFORMATION

Methylisothiazolinone

Item No. 28136

CAS Registry No.:	2682-20-4
Formal Name:	2-methyl-3(2H)-isothiazolone
Synonyms:	MI, MIT
MF:	C_4H_5NOS
FW:	115.2
Purity:	≥98%
Supplied as:	A 50% (w/v) aqueous solution
Storage:	-20°C
Stability:	≥2 years



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

Laboratory Procedures

Methylisothiazolinone (MI) is supplied as a 50% (w/v) aqueous solution. To change the solvent, simply evaporate the aqueous solution under a gentle stream of nitrogen and immediately add the solvent of choice. A stock solution may be made by dissolving the MI in the solvent of choice. MI is soluble in water.

Description

MI is an isothiazolinone-derived biocide.[1,2] It is active against Gram-positive and Gram-negative bacteria, as well as fungi, when used in combination with methylchloroisothiazolinone (MCI) with MIC values of 0.0002, 0.0002, 0.00005, and 0.00005% (w/w) for *S. aureus*, *P. aeruginosa*, *A. niger*, and *C. albicans*, respectively.[2] Methylisothiazolinone (50 µM) also inhibits c-Src autophosphorylation in a cell-free assay.[3] It reduces cell viability percentage in isolated embryonic rat cortical neurons when used at a concentration of 3 µM and decreases neurite length at 1 µM. MI, alone and as a mixture with MCI, can elicit contact sensitization.[4] Formulations containing methylisothiazolinone have been used in the control of bacteria, fungi, and algae in residential use and industry, as well as a preservative in personal care products.

References

1. Frenzel, E., Schmidt, S., Niederweis, M., *et al.* Importance of porins for biocide efficacy against *Mycobacterium smegmatis*. *Appl. Environ. Microbiol.* **77(9)**, 3068-3073 (2011).
2. Lundov, M.D., Johansen, J.D., Zachariae, C., *et al.* Low-level efficacy of cosmetic preservatives. *Int. J. Cosmet. Sci.* **33(2)**, 190-196 (2011).
3. He, K., Huang, J., Lagenaur, C.F., *et al.* Methylisothiazolinone, a neurotoxic biocide, disrupts the association of SRC family tyrosine kinases with focal adhesion kinase in developing cortical neurons. *J. Pharmacol. Exp. Ther.* **317(3)**, 1320-1329 (2006).
4. Scherrer, M.A.R. and Rocha, V.B. Increasing trend of sensitization to methylchloroisothiazolinone/methylisothiazolinone (MCI/MI). *An. Bras. Dermatol.* **89(3)**, 527-528 (2014).

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