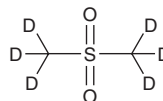


PRODUCT INFORMATION

Dimethyl sulfone-d₆

Item No. 43909

CAS Registry No.: 22230-82-6
Formal Name: sulfonylbis-methane-d₃
Synonyms: DMSO₂-d₆, Methylsulfonylmethane-d₆, MSM-d₆
MF: C₂D₆O₂S
FW: 100.2
Chemical Purity: ≥98% (Dimethyl sulfone)
Deuterium Incorporation: ≥99% deuterated forms (d₁-d₆); ≤1% d₀
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

Dimethyl sulfone-d₆ is intended for use as an internal standard for the quantification of dimethyl sulfone 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).

Dimethyl sulfone-d₆ is supplied as a solid. A stock solution may be made by dissolving the dimethyl sulfone-d₆ in the solvent of choice, which should be purged with an inert gas. Dimethyl sulfone-d₆ is slightly soluble (0.1-1 mg/ml) in DMSO.

Description

Dimethyl sulfone is a naturally occurring organosulfur compound.^{1,2} It has been found in *O. indicum*, human plasma, urine, and cerebrospinal fluid (CSF), and bovine milk. Dimethyl sulfone inhibits the proliferation of primary bovine aortic smooth muscle cells and endothelial cells in a concentration-dependent manner.³ It decreases total arthritic scores and articular cartilage structural damage in a mouse model of spontaneous osteoarthritis when administered at a dose of 0.6 g/kg per day in the diet.⁴ Dimethyl sulfone has been used as a high-temperature, polar, aprotic solvent and as an electrolyte in lithium ion batteries.^{5,6} Formulations containing dimethyl sulfone have been used as dietary supplements, food additives, and moisturizers in cosmetics.

References

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2. He, X. and Slupsky, C.M. Metabolic fingerprint of dimethyl sulfone (DMSO₂) in microbial-mammalian co-metabolism. *J. Proteome Res.* **13(12)**, 5281-5292 (2014).
3. Layman, D.L. Growth inhibitory effects of dimethyl sulfoxide and dimethyl sulfone on vascular smooth muscle and endothelial cells in vitro. *In Vitro Cell. Dev. Biol.* **23(6)**, 422-428 (1987).
4. Ezaki, J., Hashimoto, M., Hosokawa, Y., *et al.* Assessment of safety and efficacy of methylsulfonylmethane on bone and knee joints in osteoarthritis animal model. *J. Bone Miner. Metab.* **31(1)**, 16-25 (2013).
5. Clark, T., Murray, J.S., Lane, P., *et al.* Why are dimethyl sulfoxide and dimethyl sulfone such good solvents? *J. Mol. Model* **14(8)**, 689-697 (2008).
6. Hofmann, A., Migeot, M., Thißen, E., *et al.* Electrolyte mixtures based on ethylene carbonate and dimethyl sulfone for Li-Ion batteries with improved safety characteristics. *ChemSusChem* **8(11)**, 1892-1900 (2015).

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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