

## Product Information

### DIMETHYL SULFOXIDE

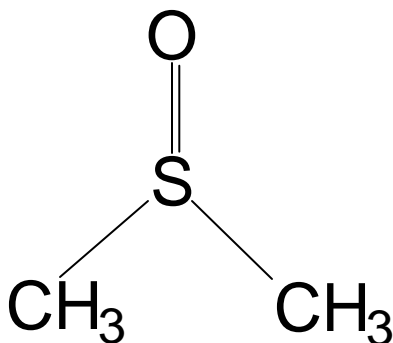
Product Number **D5879**

Storage Temperature RT

CAS #: 67-68-5

Synonyms: : A 10846, Deltam, Demeso, Demasorb, Demavet, Demsodrox, Dermasorb, Dimethyl Sulphoxide, Dimexide, Dipirartril-Tropico, DMS-70, DMS-90, DMSO, Dolicur, Domoso, Dromisol, Durasorb, Gamasol 90, Hyadur, Infiltrina, M 176, Methylsulfinylmethane, NSC-763, Rimso-50, Somipront, SQ 9453, Sulfinylbis(methane), Syntexan, Topsy

#### Product Description



Appearance: Clear, colorless liquid (Note: This product's melting point is near room temperature. Upon shipment, it may arrive as a solid instead of a liquid.

DMSO can be remelted at approximately 30°C without affecting the product's performance.)

Molecular formula: C<sub>2</sub>H<sub>6</sub>SO

Formula weight: 78.13 (anhydrous)

Melting Point: 18.45°C (supercools easily)<sup>1</sup>

Boiling Point: 189°C @760 mm Hg<sup>1</sup>

Specific Gravity: 1.100 @20°C with respect to H<sub>2</sub>O @4°C<sup>1</sup>

Autoprotolysis constant = approx. 33 @25°C<sup>2</sup>

Viscosity: 1.1 cp @27°C<sup>1</sup>

Refractive Index: 1.4795 @20°C<sup>1</sup>

Dielectric constant = 45<sup>1</sup>

DMSO is a highly polar substance with exceptional solvent properties for organic and inorganic chemicals and is widely used as an industrial solvent. DMSO is also used to protect living cells during cold storage.<sup>3</sup> Among its many other uses, DMSO has been used in the oxidation of thiols and disulfides to sulfonic acids.<sup>4</sup>

DMSO is **incompatible** with polysulfone, flexible and rigid PVC tubing and polycarbonate.<sup>5</sup>

It is **moderately** compatible with polystyrene and ECTFE/ETFE.<sup>5</sup>

It is **compatible** with LDPE, HDPE, polypropylene, PCO polypropylene copolymer polymethylpentene, nylon and teflon FEP.<sup>5</sup>

#### Preparation Instructions

To prepare a sterile solution, use a teflon or nylon membrane to sterile-filter the DMSO; do not use a cellulose acetate membrane.

DMSO is soluble in water, ethanol, acetone, ether, benzene and chloroform.<sup>1</sup>

DMSO is stable up to 100°C in alkaline, acidic and neutral conditions. At temperatures approaching its boiling point of 189°C, DMSO is stable in neutral or alkaline conditions.<sup>7</sup>

DMSO reacts violently with acyl halides, metal alkoxides, metal oxosalts, perchloric acid and sodium hydroxide.<sup>6</sup>

#### Storage/Stability

This product should be stored at room temperature and protected from exposure to moisture. DMSO is a very hygroscopic liquid. The purity of the material was essentially unchanged per gas chromatographic analysis. DMSO is thermally stable. It can be heated to 150°C for 24 hours with less than 0.1% loss in purity.<sup>3</sup>

## References

1. *The Merck Index*, 11th ed., p. 513-514, #3247 (1989).
2. Rondinini, S., et al., *Pure & Applied Chem.*, vol. 59, 1693-1702 (1987).
3. *Martindale The Extra Pharmacopoeia*, 29th ed., p. 1426 (1989).
4. Lowe, O.G., *J. Org. Chem.*, vol. 41, 2061 (1976).
5. Nalgene Reference/Chemical Resistance Chart (Nalgene Chemical Company catalog)
6. *Bretherick's Handbook of Reactive Chemical Hazards*, 4th ed., p. 299-303.
7. Supplier's information.

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