

DMSO ACS Reagent Grade

Technical Data Sheet

DMSO ACS Reagent Grade

ACS Reagent Grade dimethyl sulfoxide is produced to meet American Chemical's Society's (ACS) 9th Edition Specifications for Reagent Chemicals. It is well-suited for general solvent use and delivers dependable performance across a wide range of standard laboratory applications.

Representative Specification

Assay, % Minimum by GLC	99.9
Water, % Maximum by Karl Fischer	0.1

A high assay by Gas-Liquid Chromatography (GLC) indicates minimal impurity content and high chemical purity, ensuing a well-defined impurity profile that supports product safety and quality assurance.

Low water content by Karl Fischer titration confirms minimal moisture level, supporting product stability, shelf life, and compliance with quality and safety specifications.

DMSO ACS Reagent is used in the following markets:

- Agriculture- Active Ingredients
- Biopharma- Cryopreservation
- Cleaning- Household, Industrial & Institutional
- Performance Chemicals- Polymers
- Pharmaceuticals- Synthesis

Applications & Benefits

General solvent cleaning applications- DMSO exhibits strong solvency for a wide range of organic compounds, enabling reliable residue removal from manufacturing equipment and reducing downtime. Its affinity for polymers also supports effective cleaning in processing operations, improving efficiency and minimizing fouling.

Suited for Process Development & Scale-Up- DMSO ACS Reagent provides the consistency and reliability needed for evaluating process parameters during early-stage chemical development. Its specification alignment supports reproducible outcomes in pilot-scale and pre-commercial testing.

Versatile Solvent for Non-UV Analytical Techniques- DMSO ACS Reagent is ideal for methods where UV absorbance is not critical, offering excellent miscibility with water and strong solvating power. It performs reliably in gas chromatography and other non-spectrophotometric analyses.

Physical Properties

Density @ 25°C	1.0955	g/cm ³
Boiling Point	189	°C
Freezing Point	18.5	°C
Flash Point	87	°C
Viscosity @ 20°C	2.14	cP
Surface Tension @ 20°C	1.4785	dyne/cm
Specific Heat	5	cal/g/°C
Heat of Vaporization @ 25°C	162	cal/g
Electrical Conductivity @ 20°C	3x10 ⁻⁸	ohm/cm
Dielectric Constant @ 20°C	48	
Dipole Moment	4.3	
Vapor Pressure @ 25°C	0.6	mm Hg

Storage & Handling

Pure DMSO has a melting point of 18.5°C (64°F). As a result, frozen DMSO must be thawed before it can be transferred. When possible, it's advisable to schedule production during warmer months to simplify handling. For facilities that use DMSO year-round, implementing a few straightforward cold-weather handling guidelines can ensure smooth and efficient operations.

The retest date for DMSO ACS Reagent Grade is three years. The retest date is not an expiration date but indicates when recertification should be performed. Only material stored in original, unopened packaging under appropriate conditions should be retested.

DMSO is minimally corrosive but may darken when exposed to mild steel, copper, brass, lead, or zinc. For long-term use, 304 or 316 stainless steel and aluminium are recommended, with stainless steel offering over 10 years of durability in continuous service.

Due to its strong solvent properties, only select polymers are suitable: polyethylene, polypropylene, and ethylene propylene rubber can be used up to 120 °F (49 °C), while polytetrafluoroethylene (PTFE) is stable up to DMSO's boiling point. Other polymers should be tested under design conditions before use.

Packaging

gChem offers the following packaging options:

- 4-liter bottles
- 500-lb HDPE drums
- 2,450-lb non-returnable IBC/totes
- ISO containers
- 45,000-lb tank trucks

For More Information

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