

# DMSO

## PharmaSolvent Grade *The Pure Choice for Pharmaceutical Synthesis*

Bulletin 141P

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**DMSO PharmaSolvent Grade** is Dimethyl Sulfoxide produced to an exacting quality standard specifically for the synthesis of Active Pharmaceutical Ingredients (API). DMSO PharmaSolvent Grade simplifies the manufacturing process by contributing minimal process impurities, while providing a predictably low moisture level. It is the appropriate choice in any chemical synthesis where the final purity of the finished compound is critical.

*Choose DMSO PharmaSolvent Grade to:*

**Manufacture the Finest Active Pharmaceutical Ingredients.** A highly pure reaction solvent provides a simpler impurity profile. This can reduce costs associated with impurity identification and make product purification easier.

**Exploit the Power of the DMSO.** Dimethyl Sulfoxide is well known for its performance as a solvent in substitution reactions. Additionally, DMSO is the preferred solvent and or reagent choice in many mild and selective oxidations such as the Swern and Kornblum reactions.

**Work Safely.** PharmaSolvent Grade DMSO is environmentally safe and completely biodegradable. Its low toxicity makes it an ideal replacement for more hazardous reaction solvents, such as DMF, NMP, and N,N-Dimethylacetamide.

*Gaylord Chemical Company, L.L.C. (GCC) is the world's leading provider of Dimethyl Sulfoxide (DMSO) solutions. Beginning in the early 1960's, GCC has been dedicated to the development of new uses for DMSO. In order to meet customer-specific needs, GCC has pioneered the development of multiple grades of DMSO, including DMSO USP.*

*Gaylord Chemical's solutions-based approach has contributed to the development and growth of industries including pharmaceuticals, hydrocarbons, electronics, polymers, coatings, agricultural chemicals, and industrial cleaners.*

*Gaylord Chemical's headquarters are located in Slidell, Louisiana with manufacturing, research, and development facilities in nearby Bogalusa, Louisiana. GCC remains the only producer of DMSO in the Western Hemisphere.*

**Gaylord Chemical Company, L.L.C.**  
*Your Global Leader For DMSO Solutions!*



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## Representative Specification

Specification	Values
Assay, % Minimum by GLC	99.98
Total Organic Impurities, ppm Maximum	200
Water, % Maximum by KF	0.03
Titration Acid, meq / g, Maximum	0.001
Residue after Evaporation, % Maximum	0.01
Color APHA, Maximum	10
UV Absorbance Maximums, purged	
275 nm	0.3
285 nm	0.2
295 nm	0.2

This illustration does not constitute the specification. Specifications are available upon request.

## DMSO PharmaSolvent Grade at a Glance

### Physical Data

Specific Gravity $d^{20/4}$	1.104
Boiling Point (atmos. pressure)	189 °C
Viscosity at 20°C	2.14 cP
Refractive Index $n^{20/D}$ (20°C, 68°F)	1.4785
Surface Tension at (20°C, 68°F)	43 dynes / cm
Specific Heat at 25°C (77 °F)	0.45 cal / g / °C
Heat of Vaporization (25°C)	162 cal / g
Electrical Conductivity at (20°C)	$3 \times 10^{-8}$ / ohm / cm
Dielectric Constant at 20°C	48
Dipole Moment	4.3D
Vapor Pressure at 25°C (77°F)	0.6 mm Hg

### Solubility

Soluble in water, light alcohols and diethyl ether.

### Regulatory

CAS:67-68-5, EINECS:200-664-3

HMIS and NFPA Hazard Ratings: Health-1, Flammability-1, Chemical Reactivity-0

### Packaging

Bottles- 1/2, 1, 4 liter

Drums- 500lb HDPE

Bulk- ISO Container and 45,000 lb Tank Truck

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