

Status: Currently Official on 17-Feb-2025
Official Date: Official Prior to 2013
Document Type: USP Monographs
DocId: GUID-8BB8ED06-DF61-47B1-AA7B-AF02BC1BBCDE_1_en-US
DOI: https://doi.org/10.31003/USPNF_M26675_01_01
DOI Ref: zns9e

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Do not distribute

Dimethyl Sulfoxide Gel

» Dimethyl Sulfoxide Gel contains not less than 90.0 percent and not more than 110.0 percent of the labeled concentration of C₂H₆OS.

Packaging and storage—Preserve in tight, light-resistant containers.

Labeling—Label it to indicate that it is for veterinary use only.

USP REFERENCE STANDARDS (11)—
[USP Dimethyl Sulfoxide RS](#)

Identification—The retention time of the dimethyl sulfoxide peak in the chromatogram of the *Assay preparation* corresponds to that in the chromatogram of the *Standard preparation*, as obtained in the *Assay*.

MINIMUM FILL (755): meets the requirements.

pH (791): between 4.7 and 6.7, determined on a mixture of 5 g of Gel and 5 mL of water.

Assay—

Internal standard solution—Transfer 1.0 mL of dimethylformamide to a 100-mL volumetric flask. Add about 75 mL of methanol, and shake for about 1 minute. Dilute with methanol to volume, and mix.

Standard preparation—Transfer about 2 g of [USP Dimethyl Sulfoxide RS](#), accurately weighed, to a 100-mL volumetric flask, add 1.0 mL of dimethylformamide and 75 mL of methanol, and shake for about 1 minute. Dilute with methanol to volume, and mix. This solution contains about 20 mg of [USP Dimethyl Sulfoxide RS](#) per mL.

Assay preparation—Transfer an accurately weighed quantity of Gel, equivalent to 2 g of dimethyl sulfoxide, to a 100-mL volumetric flask. Add 1.0 mL of dimethylformamide and about 75 mL of methanol. Dilute with methanol to volume, and mix.

Chromatographic system (see [Chromatography \(621\)](#))—The gas chromatograph is equipped with a flame-ionization detector and a 4-mm × 1.8-m column packed with 15% liquid phase G39 on support S1A. The column is maintained at about 160° and the injection port and detector block at about 200°. Helium is used as the carrier gas, flowing at a rate of about 30 mL per minute. Chromatograph the *Internal standard solution*, and record the peak responses as directed for *Procedure*: examine the chromatogram to confirm that there are no peaks present that would interfere with the measurement of the dimethylformamide peaks and the dimethyl sulfoxide peaks in subsequent chromatograms. Chromatograph the *Standard preparation*, and record the peak responses as directed for *Procedure*: the relative retention times are about 0.4 for dimethylformamide and 1.0 for dimethyl sulfoxide; the tailing factor is not more than 2.0; the resolution, *R*, between the dimethylformamide peak and the dimethyl sulfoxide peak is not less than 4; and the relative standard deviation for replicate injections is not more than 2.0%.

Procedure—Separately inject equal volumes (about 2 µL) of the *Standard preparation* and the *Assay preparation* into the chromatograph, record the chromatograms for not less than 40 minutes, and measure the peak heights for the dimethylformamide and dimethyl sulfoxide peaks. Calculate the percentage (w/w) of C₂H₆OS in the portion of Gel taken by the formula:

$$10(C/W)(R_U/R_S)$$

in which *C* is the concentration, in mg per mL, of [USP Dimethyl Sulfoxide RS](#) in the *Standard preparation*; *W* is the weight, in g, of Gel taken to prepare the *Assay preparation*; and *R_U* and *R_S* are the ratios of the dimethyl sulfoxide peak response to the dimethylformamide peak response in the chromatograms obtained from the *Assay preparation* and the *Standard preparation*, respectively.

Auxiliary Information - Please [check for your question in the FAQs](#) before contacting USP.

Topic/Question	Contact	Expert Committee
DIMETHYL SULFOXIDE GEL	Documentary Standards Support	SM32020 Small Molecules 3
REFERENCE STANDARD SUPPORT	RS Technical Services RSTECH@usp.org	SM32020 Small Molecules 3

Chromatographic Database Information: [Chromatographic Database](#)

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