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Methylsulfonylmethane Tablets

DEFINITION

Methylsulfonylmethane Tablets contain NLT 90.0% and NMT 110.0% of the labeled amount of methylsulfonylmethane ($C_2H_6O_2S$).

IDENTIFICATION

• **A.** The retention time of the major peak of the *Sample solution* corresponds to that of the *Standard solution*, as obtained in the *Procedure for Strength*.

STRENGTH

PROCEDURE

Diluent: Transfer 950 mL of methanol to a 1-L volumetric flask. Add 0.60 mL of diethylene glycol methyl ether, and dilute with methanol to volume.

Standard solution: 0.4 mg/mL of [USP Methylsulfonylmethane RS](#) in *Diluent*. Sonicate at 50° for 1 min, and allow to cool to room temperature.

Sample solution: Finely powder NLT 20 Tablets. Dissolve a portion of the finely powdered material, equivalent to 1 Tablet, in *Diluent*, and sonicate for 15 min at 50°. Allow to cool to room temperature, dilute with *Diluent* to volume, and mix. Quantitatively dilute with *Diluent* to obtain a final concentration of 0.4 mg/mL of methylsulfonylmethane. Transfer 1 mL of the suspension to a 1.5-mL microcentrifuge tube, and centrifuge for 20 s. Use the supernatant.

Chromatographic system

(See [Chromatography \(521\)](#), [System Suitability](#).)

Mode: GC

Detector: Flame ionization

Column: 0.53-mm × 30-m capillary; 5-μm phase G2 coating

Temperature

Column: 120°

Injector: 250°

Detector: 250°

Carrier gas: Helium

Flow rate: 5 mL/min

Injection size: 1 μL

Injector type: Split ratio, 2:1

System suitability

Sample: *Standard solution*

Suitability requirements

Relative standard deviation: NMT 2.0% for the peak response ratio of methylsulfonylmethane to diethylene glycol methyl ether from replicate injections

Analysis

Samples: *Standard solution* and *Sample solution*

Calculate the percentage of the labeled amount of methylsulfonylmethane ($C_2H_6O_2S$) in the portion of Tablets taken:

$$\text{Result} = (R_U/R_S) \times (C_S/C_U) \times 100$$

R_U = internal standard ratio (peak response of methylsulfonylmethane to diethylene glycol methyl ether) from the *Sample solution*

R_S = internal standard ratio (peak response of methylsulfonylmethane to diethylene glycol methyl ether) from the *Standard solution*

C_S = concentration of [USP Methylsulfonylmethane RS](#) in the *Standard solution* (mg/mL)

C_U = nominal concentration of methylsulfonylmethane in the *Sample solution* (mg/mL)

Acceptance criteria: 90.0%–110.0%

PERFORMANCE TESTS

- [DISINTEGRATION AND DISSOLUTION \(2040\)](#): Meet the requirements for *Disintegration*; 30 min
- [WEIGHT VARIATION OF DIETARY SUPPLEMENTS \(2091\)](#): Meet the requirements

ADDITIONAL REQUIREMENTS

- **PACKAGING AND STORAGE:** Preserve in tight, light-resistant containers.

- [USP REFERENCE STANDARDS \(11\)](#)

[USP Methylsulfonylmethane RS](#)

Dimethyl sulfone.

$C_2H_6O_2S$ 94.13

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

Topic/Question	Contact	Expert Committee
METHYLSULFONYLMETHANE TABLETS	Natalia Davydova Scientific Liaison	NBDS2020 Non-botanical Dietary Supplements
REFERENCE STANDARD SUPPORT	RS Technical Services RSTECH@usp.org	NBDS2020 Non-botanical Dietary Supplements

Chromatographic Database Information: [Chromatographic Database](#)

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