

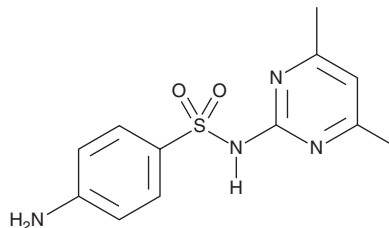
# PRODUCT INFORMATION



## Sulfamethazine

Item No. 20976

**CAS Registry No.:** 57-68-1  
**Formal Name:** 4-amino-N-(4,6-dimethyl-2-pyrimidinyl)-benzenesulfonamide  
**Synonyms:** NSC 67457, NSC 683529, Sulfadimethyldiazine, Sulfadimidine  
**MF:** C<sub>12</sub>H<sub>14</sub>N<sub>4</sub>O<sub>2</sub>S  
**FW:** 278.3  
**Purity:** ≥98%  
**UV/Vis.:** λ<sub>max</sub>: 211, 269 nm  
**Supplied as:** A crystalline solid  
**Storage:** Room temperature  
**Stability:** ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

Sulfamethazine is supplied as a crystalline solid. A stock solution may be made by dissolving the sulfamethazine in the solvent of choice, which should be purged with an inert gas. Sulfamethazine is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of sulfamethazine in ethanol is approximately 0.3 mg/ml and approximately 50 mg/ml in DMSO and DMF.

Sulfamethazine is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, sulfamethazine should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. Sulfamethazine has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

### Description

Sulfamethazine is a sulfonamide antibiotic.<sup>1,2</sup> It inhibits dihydropteroate synthase (DHPS; IC<sub>50</sub> = 5.7 μM for the *T. gondii* enzyme). Sulfamethazine is active against *A. pleuropneumoniae* (MIC = 32 μg/ml) and enhances the antibacterial activity of trimethoprim (Item No. 16473) against *E. coli*.<sup>3,4</sup> It has been detected in environmental water samples.<sup>5,6</sup> Formulations containing sulfamethazine have been used in the treatment of bacterial infections in livestock.

### References

1. Allegra, C.J., Boarman, D., Kovacs, J.A., *et al.* Interaction of sulfonamide and sulfone compounds with *Toxoplasma gondii* dihydropteroate synthase. *J. Clin. Invest.* **85(2)**, 371-379 (1990).
2. Salmon, S.A., Watts, J.L., Case, C.A., *et al.* Comparison of MICs of ceftiofur and other antimicrobial agents against bacterial pathogens of swine from the United States, Canada, and Denmark. *J. Clin. Microbiol.* **33(9)**, 2435-2444 (1995).
3. Mengelers, M.J., Hougee, P.E., Janssen, L.H., *et al.* Structure-activity relationships between antibacterial activities and physicochemical properties of sulfonamides. *J. Vet. Pharmacol. Ther.* **20(4)**, 276-283 (1997).
4. Peng, F.-J., Ying, G.-G., Liu, Y.-S., *et al.* Joint antibacterial activity of soil-adsorbed antibiotics trimethoprim and sulfamethazine. *Sci. Total Environ.* **506-507**, 58-65 (2015).
5. Washington, M.T., Moorman, T.B., Soupir, M.L., *et al.* Monitoring tylosin and sulfamethazine in a tile-drained agricultural watershed using polar organic chemical integrative sampler (POCIS). *Sci. Total Environ.* **612**, 358-367 (2017).
6. López-Serna, R., Petrović, M., and Barceló, D. Direct analysis of pharmaceuticals, their metabolites and transformation products in environmental waters using on-line TurboFlow™ chromatography-liquid chromatography-tandem mass spectrometry. *J. Chromatogr. A.* **1252**, 115-129 (2012).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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