

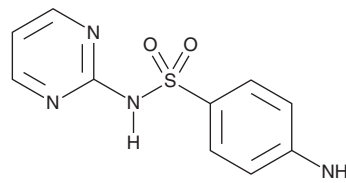
# PRODUCT INFORMATION



## Sulfadiazine

Item No. 23719

**CAS Registry No.:** 68-35-9  
**Formal Name:** 4-amino-N-2-pyrimidinyl-benzenesulfonamide  
**Synonym:** NSC 35600  
**MF:** C<sub>10</sub>H<sub>10</sub>N<sub>4</sub>O<sub>2</sub>S  
**FW:** 250.3  
**Purity:** ≥98%  
**UV/Vis.:** λ<sub>max</sub>: 214, 271 nm  
**Supplied as:** A crystalline solid  
**Storage:** 4°C  
**Stability:** ≥4 years



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

### Laboratory Procedures

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

Sulfadiazine is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, sulfadiazine should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. Sulfadiazine 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

Sulfadiazine is a sulfonamide antibiotic that inhibits the growth of Gram-positive and Gram-negative bacteria.<sup>1-4</sup> It inhibits dihydropteroate synthase (DHPS), which converts a pteridine and 4-aminobenzoic acid (PABA; Item No. 18659) to dihydropteroate, an intermediate in folate biosynthesis.<sup>1</sup> Sulfadiazine inhibits recombinant *P. carinii* DHPS (IC<sub>50</sub> = 0.19 μM). It is active against clinical isolates of *M. tuberculosis* (MIC<sub>90</sub> = 10 mg/L) and of *N. meningitidis* (MICs = 5-2,000 mg/L).<sup>2,3</sup> Sulfadiazine is also active against *A. pleuropneumoniae*, *S. choleraesuis*, *S. typhimurium*, *P. multocida*, *S. equi*, and *S. suis* (MIC<sub>90</sub>s = <0.5 mg/ml for all) when used in combination with trimethoprim (Item No. 16473).<sup>4</sup> *In vivo*, sulfadiazine (40 mg/kg per day) increases survival in a mouse model of lethal *T. gondii* infection when administered in combination with pyrimethamine (Item No. 16472).<sup>5</sup> Formulations containing sulfadiazine have been used in the treatment of rheumatic fever and various infections, and, in a dual treatment with pyrimethamine, to treat toxoplasmosis.

### References

1. Hong, Y.-L., Hossler, P.A., Calhoun, D.H., et al. *Antimicrob. Agents Chemother.* **39**(8), 1756-1763 (1995).
2. Ameen, S.M. and Drancourt, M. *Antimicrob. Agents Chemother.* **57**(12), 6370-6371 (2013).
3. Wiggins, G.L., McLaughlin, J.V., Bickham, S.T., et al. *Appl. Microbiol.* **20**(6), 893-898 (1970).
4. Salmon, S.A., Watts, J.L., Case, C.A., et al. *J. Clin. Microbiol.* **33**(9),
5. Martins-Duarte, É.S., de Souza, W., and Vommaro, R.C. *Exp. Parasitol.* **133**(3), 294-299 (2013).

#### 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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