



## Product Information

### Sulfamethoxazole

Product Number **S 7507**  
Store at Room Temperature

#### Product Description

Molecular Formula:  $C_{10}H_{11}N_3O_3S$   
Molecular Weight: 253.3  
CAS Number: 723-46-6  
Melting Point: 168-172 °C  
Synonyms: 4-Amino-N-(5-methyl-3-isoxazolyl)benzenesulfonamide;  
N1-(5-Methylisoxazol-3-yl)sulfanilamide

Sulfamethoxazole is a member of the sulfonamide family of antibiotics. Sulfamethoxazole interferes with folic acid synthesis in susceptible bacteria. Its use has been limited by the development of resistance and it is now used mainly as a mixture with trimethoprim.<sup>1</sup>

Sulfamethoxazole and other sulfonamides have a similar structure to p-aminobenzoic acid. These compounds interfere with the synthesis of nucleic acids in sensitive microorganisms by blocking the conversion of p-aminobenzoic acid to the co-enzyme dihydrofolic acid, a reduced form of folic acid.<sup>2</sup>

A method for the determination of sulfamethoxazole in synthetic samples is a flow-through sensor based on integration of spectrophotometric detection and the different kinetics of retention/elution on a solid support. The solid support is Sephadex® SP C-25. No derivatization step is required. The sensor responds linearly and has been compared to the standard HPLC method. The advantages for the sensor are simplicity, rapidity, and low reagent consumption.<sup>3</sup>

#### Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.

#### Preparation Instructions

Sulfamethoxazole is very slightly soluble in water, but is soluble 1 in 50 of alcohol and 1 in 3 of acetone. It is also soluble in alkali hydroxides. A 10% suspension in water has a pH of 4 to 6.<sup>4</sup>

#### Storage/Stability

Protect from light. Sulfamethoxazole solutions can be sterilized by autoclaving.<sup>2</sup>

#### References

1. Wormser, G. P., et al., Co-trimoxazole (trimethoprim-sulfamethoxazole): an updated review of its antibacterial activity and clinical efficacy. *Drugs*, **24(6)**, 459-518 (1982).
2. Martindale The Extra Pharmacopoeia, 30th ed., Reynolds, J. E. F., ed., Pharmaceutical Press (London, England: 1993), pp. 154, 209.
3. Fernandez de Cordova, M.L., et al., A flow injection sensor for simultaneous determination of sulfamethoxazole and trimethoprim by using Sephadex SP C-25 for continuous on-line separation and solid phase UV transduction. *J. Pharm. Biomed. Anal.*, **31(4)**, 669-677 (2003).
4. Martindale The Extra Pharmacopoeia, 28th ed., Reynolds, J. E. F., ed., Pharmaceutical Press (London, England: 1982), p. 1479.

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