

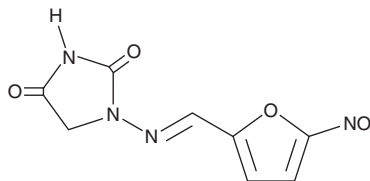
# PRODUCT INFORMATION



## Nitrofurantoin

Item No. 23510

**CAS Registry No.:** 67-20-9  
**Formal Name:** 1-[[[(5-nitro-2-furanyl)methylene]amino]-2,4-imidazolidinedione  
**Synonyms:** NSC 2107, NSC 44150  
**MF:** C<sub>8</sub>H<sub>6</sub>N<sub>4</sub>O<sub>5</sub>  
**FW:** 238.2  
**Purity:** ≥98%  
**UV/Vis.:** λ<sub>max</sub>: 268, 363 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

Nitrofurantoin is supplied as a crystalline solid. A stock solution may be made by dissolving the nitrofurantoin in the solvent of choice. Nitrofurantoin is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of nitrofurantoin is approximately 15 mg/ml in ethanol and approximately 25 mg/ml in DMSO and DMF.

Nitrofurantoin is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, nitrofurantoin should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. Nitrofurantoin has a solubility of approximately 0.5 mg/ml in a 1:2 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

### Description

Nitrofurantoin is an antibiotic.<sup>1</sup> *In vivo*, nitrofurantoin (25-100 mg/kg, i.m.) reduces *E. coli* replication and abscess formation in the renal medulla of infected rats in a dose-dependent manner. It prevents kidney and bladder infection in rats following bladder inoculation with clinical isolates of *P. mirabilis*. Nitrofurantoin also prevents alkalization of urine as well as calculi and abscess formation in a rat model of *P. vulgaris* urinary tract infection.<sup>2</sup> Formulations containing nitrofurantoin have been used to treat urinary tract infections.

### References

1. Rocha, H., Da Silva Teles, E., and Barros, M. Site of action of nitrofurantoin in experimental urinary tract infection. *Appl. Microbiol.* **18**(4), 547-549 (1969).
2. Hossack, D.J.N. *Proteus vulgaris* urinary tract infections in rats; treatment with nitrofurantoin derivatives. *Br. J. Pharmacol. Chemother.* **19**(2), 306-312 (1962).

#### 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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