Nitrofurantoin

Product Number  N 7878
Store at Room Temperature

Product Description
Molecular Formula:  C₈H₆N₄O₅
Molecular Weight:  238.2
CAS Number:  67-20-9
Melting Point:  270-272 °C (with decomposition)
λ_max:  370 nm (H₂O)
Extinction Coefficient:  E₁%= 776 (H₂O)
Synonyms:  N-(5-nitro-2-furfurylidene)-1-aminohydantoin, nitrofurantoine, 1-[(5-nitro-2-furanyl)methylene]amino]-2,4-imidazolidinedione

Nitrofurantoin is an antibactericidal compound that has been historically prepared by the reaction of 1-aminohydantoin sulfate and 5-nitro-2-furaldehyde diacetate. It shows activity against many Gram-positive and Gram-negative bacteria. Nitrofurantoin is effective against enterococci, staphylococci, streptococci, corneybacteria, many strains of Escherichia coli. By contrast, most strains of Proteus spp. and Pseudomonas aeruginosa are more resistant to this compound. Other microbial species whose susceptibility to nitrofurantoin has been studied include Plesiomonas shigelloides, Campylobacter, and Providencia.

The susceptibility of primary rat lung cells in culture to nitrofurantoin has been investigated. A report has described the use of antioxidants to mitigate the toxic effects of nitrofurantoin on human WI-38 fibroblasts in culture. Alterations to the in vitro morphologic features, viability, and phagocytic activity of isolated bovine mammary polymorphonuclear leukocytes caused by various antibiotics, including nitrofurantoin, have been reported.

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

Preparation Instructions
This product is soluble in dimethylformamide (DMF, 50 mg/ml), with heat as needed, yielding a clear, yellow/green solution. It is also soluble in water (0.19 mg/ml), ethanol (0.51 mg/ml), acetone (5.1 mg/ml), glycerol (0.6 mg/ml), and polyethylene glycol (15 mg/ml).

References
1. The Merck Index, 12th ed. Entry# 6696.

GCY/RXR  8/03