



# Nitrofurantoin Sodium PRODUCT DATA SHEET

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<b>Product Name:</b>	Nitrofurantoin Sodium
<b>Product Number:</b>	N061
<b>CAS Number:</b>	54-87-5
<b>Molecular Formula:</b>	$C_8H_5N_4O_5Na$
<b>Molecular Weight:</b>	260.14
<b>Form:</b>	Powder
<b>Solubility:</b>	Freely soluble in water
<b>Source:</b>	Synthetic
<b>Storage Conditions:</b>	Ambient, <30°C; Protect from light.
<b>Description:</b>	<p>Nitrofurantoin Sodium is the sodium salt form of Nitrofurantoin, a broad-spectrum nitrofurantoin antibiotic that is used as a substrate of bacterial glycoprotein nitrofurantoin reductase. It is bacteriostatic against Gram-positive and Gram-negative bacteria. It has been found to have <i>in vitro</i> anti-cancer activities in bladder cancer cells. Nitrofurantoin is freely soluble in water.</p> <p>We also offer:</p> <ul style="list-style-type: none"><li>• Nitrofurantoin (<u>N006</u>)</li></ul>
<b>Mechanism of Action:</b>	<p>Upon entering a susceptible cell, nitrofurantoin is activated by bacterial enzymes and targets ribosomes and nucleic acids which inhibit bacterial growth and leads to death of the bacterial cells. Resistance to Nitrofurantoin may be chromosomal or plasmid-mediated.</p>
<b>Spectrum:</b>	<p>Nitrofurantoin is effective against Gram-positive and Gram-negative bacteria. Nitrofurantoin is effective against certain <math>\beta</math>-lactam resistant strains of VRE or vancomycin resistant Enterococcus; a glycopeptide antibiotic resistant "superbug."</p> <p>It is also used against Enterococci, Staphylococci, Streptococci, Corneobacteria, and <i>E. coli</i>.</p> <p>Most strains of <i>Proteus spp.</i> and <i>Pseudomonas aeruginosa</i> are resistant to Nitrofurantoin.</p>

**Microbiology Applications** Nitrofurantoin is commonly used in clinical *in vitro* microbiological antimicrobial susceptibility tests (panels, discs, and MIC strips) against Gram-positive and Gram-negative microbial isolates. Medical microbiologists use AST results to recommend antibiotic treatment options for infected patients. Representative MIC values include:

- *E. coli* 32 µg/mL - 64 µg/mL

For a representative list of Nitrofurantoin MIC values, [click here](#).

**References:**

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Nickerson SC, Paape MJ, Dulin AM (1985) Effect of antibiotics and vehicles on bovine mammary polymorphonuclear leukocyte morphologic features, viability, and phagocytic activity *in vitro*. *Am J Vet Res.* 46(11):2259-2265 PMID 4073636

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