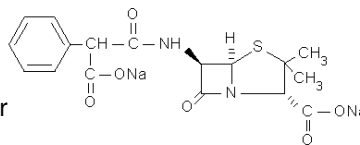


## 21800 Carbenicillin Disodium salt ( $\alpha$ -Carboxybenzylpenicillin)

**CAS number:** 4800-94-6

**Product Description:**

Appearance: White to white with yellow cast powder  
Molecular formula:  $C_{17}H_{16}N_2O_6SNa_2$   
Molecular weight: 422.4 g/mol  
pKa values: 2.6, 2.7<sup>1</sup>  
 $[\alpha_D]^{20}$  = +182° to +196° (1.0% solution in water at 25°)<sup>2</sup>  
Purity : > 98% by N determination



Carbenicillin disodium is a semi-synthetic antibiotic related to penicillin.<sup>3</sup>

It is recommended to store this product at 2-8°.

Fluka routinely tests the solubility of this product in water at a concentration of 50 mg/mL yielding a clear faint yellow solution. One part is soluble in 25 parts of ethanol and practically insoluble in chloroform and ether.<sup>1,2</sup>

**Applications:**

Carbenicillin is active against most isolates of *Pseudomonas aeruginosa* and certain indole-positive Proteus strains resistant to ampicillin and other gram-negative microorganisms.<sup>4</sup>

Although its activity against the microorganism is not strong (MIC = 25 – 100 mg/mL), it is widely used against *P. aeruginosa* infections because of its low toxicity and the lack of other antibiotics suitable for use against this microorganism. Carbenicillin is mainly used clinically to treat urinary tract and respiratory tract infections and sepsis caused by Proteus, Escherichia coli, Klebsiella, and *Pseudomonas aeruginosa*.<sup>8</sup>

Many susceptible organisms are inhibited by carbenicillin in the range of 0.1 to 32 µg per mL. Strains of *Ps. aeruginosa* and Bacteroides fragilis may require high concentrations of 128 µg or more per mL.<sup>5</sup>

Anaerobic bacterial infections caused by *B. fragilis* are susceptible to carbenicillin at high concentrations but penicillin G was found to be twice as active on a weight basis.<sup>6</sup>

Carbenicillin is inactivated by penicillinases and  $\beta$ -lactamases such as the  $\beta$ -lactamases isolated from *Citrobacter diversus*.<sup>5,7</sup>

**References:**

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