Cefamandole nafate
PRODUCT DATA SHEET

issue date 01/06/2020

Product Name:	Cefamandole nafate
Product Number:	C078
CAS Number:	42540-40-9
Molecular Formula:	$C_{19}H_{17}N_6NaO_6S_2$
Molecular Weight:	512.49
Form:	Powder
Appearance:	White or almost white powder
Solubility:	Methanol: Sparingly soluble Water: Soluble
Source:	Semi-synthetic
Water Content (Karl Fischer):	≤2.0%
pH:	3.5-7.0
Storage Conditions:	-20°C
Description:	Cefamandole nafate is a second generation cephalosporin antibiotic. TOKU-E offers two forms of cefamandole: cefamandole nafate (C078), and cefamandole sodium salt (C079). In aqueous solution, cefamandole nafate is freely soluble and sparingly soluble in methanol. Cefamandole sodium is freely soluble in an aqueous solution.
Mechanism of Action:	Like β-lactams, cephalosporins interfere with PBP (penicillin binding protein) activity involved in the final phase of peptidoglycan synthesis. PBP's are enzymes which catalyze a pentaglycine crosslink between alanine and lysine residues providing additional strength to the cell wall. Without a pentaglycine crosslink, the integrity of the cell wall is severely compromised and ultimately leads to cell lysis and death. Resistance to cephalosporins is commonly due to cells containing plasmid encoded β-lactamases.
Spectrum:	Cefamandole is a broad spectrum cephalosporin targeting a wide variety of gram positive and gram negative bacteria.

Microbiology Applications Cefamandole nafate 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:

- *Escherichia coli* 0.08 µg/mL – 100 µg/mL
- *Klebsiella pneumoniae* 0.8 µg/mL – 12.5 µg/mL
- For a complete list of cefamandole MIC values, click here.

References:

Georgopapadakou, N. H. "Mechanisms of Action of Cephalosporin 3'-quinolone Esters, Carbamates, and Tertiary Amines in Escherichia Coli." *American Society for Microbiology* 37.3 (1992): 559-65. *Antimicrobial Agents and Chemotherapy*. Web. 21 Aug. 2012.