Product Name: Amikacin Sulfate, USP (1:2)

Product Number: A003

CAS Number: 39831-55-5

Molecular Formula: \( C_{22}H_{43}N_5O_{13} \cdot 2H_2SO_4 \)

Molecular Weight: 781.76

Form: Powder

Appearance: White crystalline powder

Source: Semi-synthetic

pH: 2.0 - 4.0

Optical Rotation: +76° to +84°

Storage Conditions: 2-8°C

Description: Amikacin sulfate is broad-spectrum aminoglycoside antibiotic derived from its counterpart, Kanamycin A. Amikacin sulfate (A003) contains an amikacin:sulfate ratio of 1:2.

TOKU-E offers three forms of amikacin:

- Amikacin Hydrate (A002)
- Amikacin Sulfate (1:2) (A003)
- Amikacin Sulfate (1:1.8) (A070)

All forms have similar potencies and are freely soluble in aqueous solution (50 mg/mL).

Mechanism of Action: Similar to other aminoglycosides, amikacin sulfate binds to the 30S ribosomal subunit resulting in an inability to read mRNA ultimately producing a faulty or nonexistent protein.

Spectrum: Species susceptible to amikacin include gram negative bacteria such as *Pseudomonas aeruginosa* and several key enteric species. In addition, certain non-gram negative species including *Mycobacterium tuberculosis* have also demonstrated susceptibility to amikacin.
Microbiology Applications  Amikacin sulfate is commonly used in clinical *in vitro* microbiological antimicrobial susceptibility tests (panels, discs, and MIC strips) against gram negative microbial isolates. Medical microbiologists use this information to recommend antibiotic treatment options for infected patients. Samples of microbes grown in presence of a 30 µg amikacin disc with a zone of inhibition of <14 mm in diameter are considered resistant. Intermediate resistance zones of inhibition are typically 15 mm-16 mm in diameter (1). Representative MIC values include:

- *Pseudomonas aeruginosa* 0.25 µg/mL - 512 µg/mL
- *Serratia marcescens* ≤0.25 µg/mL — >32 µg/mL
- For a complete list of amikacin MIC values, [click here.](#)