Amikacin Sulfate, USP (1:1.8)
PRODUCT DATA SHEET

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Product Name:	Amikacin Sulfate, USP (1:1.8)
Product Number:	A070
CAS Number:	39831-55-5
Molecular Formula:	$C_{22}H_{43}N_5O_{13} \cdot 1.8H_2SO_4$
Molecular Weight:	762.14
Form:	Powder
Appearance:	White crystalline powder
Solubility:	Water: Freely soluble, 50 mg/ml
Source:	Semi-synthetic
pH:	6.0-7.3
Melting Point:	203-204°C
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 (A070) contains an Amikacin:Sulfate ratio of 1:1.8. TOKU-E offers three forms of Amikacin: • Amikacin Sulfate (1:1.8) (A070) • Amikacin Hydrate (A002) • Amikacin Sulfate (1:2) (A003) All forms have similar potencies and are freely soluble in water (50 mg/mL). Amikacin Sulfate is used in the treatment of drug-resistant *Mycobacteria*. It can be used to study bacterial translation and drug resistance.
Mechanism of Action:	Amikacin Sulfate binds to the 30S ribosomal subunit (specifically the 16S rRNA and S12 protein) resulting in interference with the translational initiation complex and mRNA misreading, which leads to a faulty or nonexistent protein.
Spectrum:	Gram-negative and Gram-positive bacteria. *Mycobacterium tuberculosis* is also susceptible 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.

References:

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