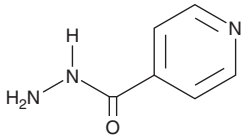
# PRODUCT INFORMATION

## Isoniazid

*Item No. 20378*

**CAS Registry No.:** 54-85-3
**Formal Name:** 4-pyridinecarboxylic acid, hydrazide
**Synonyms:** Isonicotinylhydrazide, NSC 9659
**MF:** $C_6H_7N_3O$
**FW:** 137.1
**Purity:** ≥98%
**UV/Vis.:** $\lambda_{max}$: 263 nm
**Supplied as:** A crystalline solid
**Storage:** Room temperature
**Stability:** ≥4 years




*Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.*

### Laboratory Procedures

Isoniazid is supplied as a crystalline solid. A stock solution may be made by dissolving the isoniazid in the solvent of choice, which should be purged with an inert gas. Isoniazid is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of isoniazid in these solvents is approximately 0.30, 1, and 0.5 mg/ml, respectively.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of isoniazid can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of isoniazid in PBS, pH 7.2, is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### Description

Isoniazid is an antibiotic that acts as a prodrug, being converted by bacterial catalase-peroxidases to form isonicotinic acyl-NADH complex, which inhibits mycolic acid biosynthesis.[1] It is effective against several species of *Mycobacterium*, including *M. tuberculosis*.[2,3]

### References


1. Wang, F., Langley, R., Gulten, R., *et al.* Mechanism of thioamide drug action against tuberculosis and leprosy. *J. Exp. Med.* **204(1)**, 72-78 (2007).
2. Phetsuksiri, B., Baulard, A.R., Cooper, A.M., *et al.* Antimycobacterial activities of isoxyl and new derivatives through the inhibition of mycolic acid synthesis. *Antimicrob. Agents Chemother.* **43(5)**, 1042-1051 (1999).
3. Chang, K.-C., Yew, W.-W., Tam, C.-M., *et al.* WHO group 5 drugs and difficult multidrug-resistant tuberculosis: A systematic review with cohort analysis and meta-analysis. *Antimicrob. Agents Chemother.* **57(9)**, 4097-4104 (2013).





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