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Product Information

Hydrazine monohydrate

Product Number **H 0883**
Store at Room Temperature

Product Description

Molecular Formula: $\text{N}_2\text{H}_4 \cdot \text{H}_2\text{O}$

Molecular Weight: 50.06

CAS Number: 7803-57-8

Density: 1.03 g/ml (21 °C)¹

Boiling Point: 118-119 °C (740 torr)¹

This liquid is 100% hydrazine hydrate, which is equivalent to 64% hydrazine by weight.

Hydrazine is a strong base that is used as a reducing agent and a solvent for inorganic materials.¹ In molecular biology, hydrazine is utilized in the chemical sequencing of DNA, such as in the Maxam-Gilbert method.^{2,3} Hydrazine specifically targets thymine in DNA by opening the 6-membered ring, which subsequently cyclizes to a five-membered structure that is eventually released from the sugar backbone.⁴ Salts can interfere with the reaction of hydrazine and thymine, and thus DNA samples to be sequenced using hydrazine should not be dissolved in either TE buffer or any solution with salt.³

Hydrazine hydrate has been utilized in the preparation of trans-7,cis-9 octadecadienoic acid and other conjugated linoleic acid (CLA) isomers by base conjugation of partially hydrogenated γ -linolenic acid.⁵ The use of hydrazine hydrate to prepare a precursor for a polymer-supported coupling reagent derived from 1-hydroxybenzotriazole synthesis has been reported.⁶ The preparation of non-immunogenic sialyl-T-glycopeptides on solid phase, with hydrazine hydrate incorporated in the deprotection procedure, has been described.⁷

Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.

Preparation Instructions

This product is miscible in water and in alcohol. It is insoluble in chloroform and ether.¹

References

1. The Merck Index, 12th ed., Entry# 4810.
2. Maxam, A. M., and Gilbert, W., A new method for sequencing DNA. *Proc. Natl. Acad. Sci. USA*, **74(2)**, 560-564 (1977).
3. *Molecular Cloning: A Laboratory Manual*, 3rd ed., Sambrook, J. F., et al., Cold Spring Harbor Laboratory Press (Cold Spring Harbor, NY: 2001), pp. 12.61-12.65, 12.68, 12.71, 12.73.
4. Maxam, A. M., and Gilbert, W., Sequencing end-labeled DNA with base-specific chemical cleavages. *Methods Enzymol.*, **65(1)**, 499-560 (1980).
5. Delmonte, P., et al., Synthesis and isolation of trans-7,cis-9 octadecadienoic acid and other CLA isomers by base conjugation of partially hydrogenated γ -linolenic acid. *Lipids*, **38(5)**, 579-583 (2003).
6. Pop, I. E., et al., Versatile Acylation of N-Nucleophiles using a new polymer-supported 1-hydroxybenzotriazole derivative. *J. Org. Chem.*, **62(8)**, 2594-2603 (1997).
7. Komba, S., et al., Synthesis of tumor associated sialyl-T-glycopeptides and their immunogenicity. *J. Pept. Sci.*, **6(12)**, 585-593 (2000).

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