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Product Information

Isopropyl alcohol ACS Reagent

Product Number **19,076-4**
Store at Room Temperature
Exact replacement for Product Number I 0398

Product Description

Molecular Formula: C₃H₈O
Molecular Weight: 60.10
CAS Number: 67-63-0
Boiling Point: 82.5 °C (760 torr)¹
Density: 0.78505 g/ml (20 °C)
Synonyms: isopropanol, secondary propyl alcohol, dimethyl carbinol¹

This product is designated as ACS Reagent grade, and meets the specifications of the American Chemical Society (ACS) for reagent chemicals.

Isopropanol is a polar organic solvent that is widely used in chemistry, biochemistry, and molecular biology. Industrial applications include its use in antifreezes, quick-drying oils, and quick-drying inks, and as a solvent for gums, shellac, and essential oils.¹ Isopropanol has been utilized as a solvent in the synthesis of solid phase acylating agents.²

Protocols for the use of isopropanol in DNA precipitation from mammalian tissue, ethidium bromide extraction from DNA samples, and RNA isolation from cells and tissues have been reported.³ Isopropanol has been utilized in protein crystallization.^{4,5,6} The use of isopropanol to isolate retinoids from biological matrices for HPLC and HPLC-MS analysis has been reported.^{7,8}

A mathematical analysis of isopropanol and other organic solvents to examine the selectivity of stationary phases and organic modifiers in reverse-phase HPLC systems has been published.⁹

Precautions and Disclaimer

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

Preparation Instructions

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

References

1. The Merck Index, 12th ed., Entry# 5227.
2. Nicewonger, R. B., et al., Synthesis of a novel, recyclable, solid-phase acylating reagent. *Bioorg. Med. Chem. Lett.*, **12(14)**, 1799-1802 (2002).
3. *Molecular Cloning: A Laboratory Manual*, 3rd ed., Sambrook, J. and Russell, D.W., CSHL Press (Cold Spring Harbor, NY: 2001), pp. 1.151, 6.23-6.30, 7.4-7.12, A8.27.
4. Romao, M. J., et al., Subunit composition, crystallization and preliminary crystallographic studies of the *Desulfovibrio gigas* aldehyde oxidoreductase containing molybdenum and [2Fe-2S] centers. *Eur. J. Biochem.*, **215(3)**, 729-732 (1993).
5. Knapp, S., et al., Crystallization and preliminary crystallographic analysis of an amylopullulanase from the hyperthermophilic archaeon *Pyrococcus woesei*. *Proteins*, **23(4)**, 595-597 (1995).
6. Yang, F., et al., Crystal structure of cyanovirin-N, a potent HIV-inactivating protein, shows unexpected domain swapping. *J. Mol. Biol.*, **288(3)**, 403-412 (1999).
7. Schmidt, C. K., et al., Chromatographic analysis of endogenous retinoids in tissues and serum. *Anal. Biochem.*, **315(1)**, 36-48 (2003).
8. McCaffery, P., et al., Retinoid quantification by HPLC/MSⁿ. *J. Lipid Res.*, **43(7)**, 1143-1149 (2002).
9. Du, C. M., et al., Characterizing the selectivity of stationary phases and organic modifiers in reversed-phase high-performance liquid chromatographic systems by a general solvation equation using gradient elution. *J. Chromatogr. Sci.*, **38(11)**, 503-511 (2000).

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