

Product Information

Ammonium sulfate

Product Number **A 4418**
Store at Room Temperature

Product Description

Molecular Formula: $(\text{NH}_4)_2\text{SO}_4$
Molecular Weight: 132.1
CAS Number: 7783-20-2

This product is designated as Molecular Biology grade and is suitable for molecular biology applications. It has been analyzed for the presence of nucleases and proteases.

Ammonium sulfate is a widely used reagent in molecular biology and chromatography. Applications include the precipitation and fractionation of proteins,¹ crystallization of proteins^{2,3,4} and of protein-nucleic acid complexes.⁵ Ammonium sulfate is also widely used in HPLC of proteins, such as in hydrophobic interaction chromatography.^{6,7,8}

Ammonium sulfate is also utilized in the purification of antibodies.^{9,10} The use of ammonium sulfate in long PCR buffer, in PCR lysis solution, and in second-strand cDNA synthesis has been reported.¹¹ A protocol for the HPLC analysis of phospholipids using ammonium sulfate has been reported.¹²

Precautions and Disclaimer

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

Preparation Instructions

This product is soluble in water (435 mg/ml, 3.29 M), yielding a clear, colorless solution. Ammonium sulfate saturation charts at 0 ° and 25 °C have been reported.¹³

References

1. Englard, S., and Seifter, S., Precipitation Techniques. *Methods Enzymol.*, **182**, 285-300 (1990).
2. McPherson, A., Crystallization of macromolecules: general principles. *Methods Enzymol.*, **114**, 112-120 (1985).
3. Giegé, R., and Ducruix, A., in *Crystallization of Nucleic Acids and Proteins*, Ducruix, A., and Giegé, R., eds., Oxford University Press (Oxford, UK: 1999), pp. 1-16.
4. Tessier, P. M., et al., Self-interaction chromatography: a novel screening method for rational protein crystallization. *Acta Crystallogr. D (Biol. Crystallogr.)*, **58**(Pt 10 Pt 1), 1531-1535 (2002).
5. Yaremchuk, A., et al., Improved crystals of *Thermus thermophilus* prolyl-tRNA synthetase complexed with cognate tRNA obtained by crystallization from precipitate. *Acta Crystallogr. D (Biol. Crystallogr.)*, **56**(Pt 2), 197-199 (2000).
6. Mant, C. T., and Hodges, R. S., in *High-Performance Liquid Chromatography of Peptides and Proteins*, Mant, C. T., and Hodges, R. S., eds., CRC Press (Boca Raton, FL: 1991), pp. 437-450.
7. Hyder, S. M., et al., in *High-Performance Liquid Chromatography of Peptides and Proteins*, Mant, C. T., and Hodges, R. S., eds., CRC Press (Boca Raton, FL: 1991), pp. 451-475.
8. Jacob, L. R., in *Protein Liquid Chromatography*, Kastner, M., ed., Elsevier (Amsterdam: 2000), pp. 235-269.

9. Kent, U. M., Purification of antibodies using ammonium sulfate fractionation or gel filtration. *Methods Mol. Biol.*, **115**, 11-18 (1999).
10. Page, M., et al., in *Basic Protein and Peptide Protocols*, Walker, J. M., ed., Humana Press (Totowa, NJ: 1994), pp. 407-432.
11. *Molecular Cloning: A Laboratory Manual*, 3rd ed., Sambrook, J., and Russell, D. W., CSHL Press (Cold Spring Harbor, NY: 2001), pp. 6.22, 8.78, 11.43-11.47.
12. Guan, Z., et al., Separation and quantitation of phospholipids and their ether analogues by high-performance liquid chromatography. *Anal. Biochem.*, **297(2)**, 137-143 (2001).
13. Green, A. A., and Hughes, W. L., Protein fractionation on the basis of solubility in aqueous solutions of salts and organic solvents. *Methods Enzymol.*, **1**, 67-90 (1955).

GCY/AJH 4/05

Sigma brand products are sold through Sigma-Aldrich, Inc.

Sigma-Aldrich, Inc. warrants that its products conform to the information contained in this and other Sigma-Aldrich publications. Purchaser must determine the suitability of the product(s) for their particular use. Additional terms and conditions may apply. Please see reverse side of the invoice or packing slip.