



Product Information

Ammonium chloride ACS Reagent

Product Number **A 5666**
Store at Room Temperature

Product Description

Molecular Formula: NH_4Cl
Molecular Weight: 53.49
CAS Number: 12125-02-9
Synonyms: ammonium muriate, sal ammoniac, salmiac¹

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

Ammonium chloride is a reagent that is used in a variety of industrial and research applications. Industrial uses include electroplating, tinning, and the manufacture of dyes. It is also used as a fluxing agent for the galvanizing of steel, the refinement of zinc, and the coating of sheet iron with zinc.¹

In biological research, ammonium chloride is often used for the lysis of human red blood cells.^{2,3,4} Ammonium chloride has been used in the study of basic calcium phosphate crystals in fibroblasts.⁵ The use of ammonium chloride in the isolation of proteins from 50S ribosomal subunits of *Bacillus stearothermophilus* has been described.⁶ A study of the nucleic acid binding protein HSP15 that uses ammonium chloride to investigate the effect of different salt conditions on HSP15 binding to 50S subunits has been published.⁷

A differential pulse voltammetry procedure for the detection of copper, lead, cadmium, and nickel in environmental matrices that uses ammonia-ammonium chloride buffer has been reported.⁸

Precautions and Disclaimer

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

Preparation Instructions

This product is soluble in water (100 mg/ml), yielding a clear, colorless solution. It is also soluble in methanol and ethanol.¹ The pH of various percentage solutions of NH_4Cl has been reported:

1% solution = pH 5.5
3% solution = pH 5.1
10% solution = pH 5.0¹

References

1. The Merck Index, 12th ed., Entry# 537.
2. Ridings, J., et al., Purification of cord blood lymphocytes. *J. Immunol. Methods*, **195(1-2)**, 43-48 (1996).
3. Kang, E. M., et al., Mobilization, collection, and processing of peripheral blood stem cells in individuals with sickle cell trait. *Blood*, **99(3)**, 850-855 (2002).
4. Baerlocher, G. M., et al., Telomere length measurement by fluorescence *in situ* hybridization and flow cytometry: tips and pitfalls. *Cytometry*, **47(2)**, 89-99 (2002).
5. Halverson, P. B., et al, Intracellular calcium responses to basic calcium phosphate crystals in fibroblasts. *Osteoarthritis Cartilage*, **6(5)**, 324-329 (1998).
6. Gewitz, H. S. et al., Reconstitution and crystallisation experiments with isolated split proteins from *Bacillus stearothermophilus* ribosomes. *Biochem. Int.*, **15(5)**, 887-895 (1987).

7. Korber, P., et al., HSP15: a ribosome-associated heat shock protein. EMBO J., **19(4)**, 741-748 (2000).
8. Locatelli, C., Measurement of voltammetric peak area and resolution of overlapping peaks in the simultaneous determination of copper, lead, cadmium, and nickel in environmental matrixes. J. AOAC Int., **83(6)**, 1321-1326 (2000).

GCY/RXR 3/03

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.