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ProductInformation

Ammonium bicarbonate

Product Number **A 6141**
Store at Room Temperature
Replacement for Product Code 28,509-9

Product Description

Molecular Formula: NH_4HCO_3
Molecular Weight: 79.06
CAS Number: 1066-33-7
Synonyms: acid ammonium carbonate, ammonium hydrogen carbonate[1]

Ammonium bicarbonate is a commonly used reagent for industrial and research procedures. Large-scale applications include the manufacture of porous plastics, ceramics, dyes, and pigments. Ammonium bicarbonate is also used in fire extinguishers.[1]

The use of ammonium bicarbonate as a foaming agent in the development of macroporous hydroxyapatite scaffolds for bone tissue engineering has been discussed.[2] The effect of ammonium and bicarbonate levels on tomato plant growth under saline conditions has been studied.[3] Ammonium bicarbonate has been used in the preparation and isolation of neoglycoprotein conjugates.[4]

Ammonium bicarbonate is volatile in solution and releases ammonia and CO_2. This property makes ammonium bicarbonate a good buffer for such applications as lyophilization and matrix assisted laser desorption and ionization (MALDI) mass spectrometry. Ammonium bicarbonate is used in the analysis by exonuclease digestion and electrospray mass spectrometry of oligonucleotides with blocked termini.[5] It is utilized for the in-gel digestion of proteins by trypsin (Product No. T 6567) and in the MALDI mass spectrometric analysis of proteins.[6,7]

The isolation of sulfated xylan oligosaccharides using ammonium bicarbonate was reported in a study of their action on human immunodeficiency virus 1 (HIV-1).[8] A procedure using ammonium bicarbonate in the purification of tetraantennary oligosaccharides from human asialyl orosomucoid has been published.[9]

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), with sonication as needed, yielding a clear, colorless solution. It is insoluble in alcohol and acetone. The dissolution of ammonium bicarbonate is an endothermic process. The pH of a 0.1 N solution of this product in water at 25 °C is 7.8.[1]

References

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5. Wu, H., and Aboleneen, H., Sequencing oligonucleotides with blocked termini using exonuclease digestion and electrospray mass spectrometry. Anal. Biochem., **287(1)**, 126-135 (2000).
6. Li, G., et al., Rapid mass spectrometric identification of proteins from two-dimensional polyacrylamide gels after in gel proteolytic digestion. Electrophoresis, **18(3-4)**, 391-402 (1997).
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8. Stone, A. L., et al., Structure-function relations of heparin-mimetic sulfated xylan oligosaccharides: inhibition of human immunodeficiency virus-1 infectivity *in vitro*. Glycoconj. J., **15(7)**, 697-712 (1998).

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