

Product Information

Ammonium nitrate Plant Cell Culture Tested

Product Number **A3795**
Store at Room Temperature

Product Description

Molecular Formula: NH_4NO_3
Molecular Weight: 80.04
CAS Number: 6484-52-2

This product is plant cell culture tested (0.6 mg/ml) and is appropriate for plant cell culture applications.

Ammonium nitrate is a reagent that is used in the manufacture of such products as fertilizers, matches, and nitrous oxide.¹ It is utilized in the treatment of titanium ores. Ammonium nitrate is also an ammonia source in plant culture.^{2,3}

Ammonium nitrate has been used as a precipitant in the crystallization of the glycosylated inhibitor of cathepsin D and trypsin isolated from potato tubers.⁴ The use of ammonium nitrate in the analysis of binding chelators and their metal complexes by anion-exchange chromatography and inductively coupled plasma mass spectrometry has been studied.⁵ The effect of the concentration of various nutrients, including ammonium nitrate, on cell growth and production of nystatin by *Streptomyces noursei* has been investigated.⁶ The use of ammonium nitrate in the biotreatment of hydrocarbons-contaminated soils has been described.⁷

A Fourier-transform infrared absorbance and transmittance study of ammonium nitrate in the 2-20 μm range has been published.⁸

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions

This product is soluble in water (100 mg/ml), yielding a clear, colorless solution. The pH of a 0.1 M solution of ammonium nitrate in water is 5.43.¹

References

1. The Merck Index, 12th ed., Entry# 567.
2. Zhu, Y. G., et al., Plant growth and cation composition of two cultivars of spring wheat (*Triticum aestivum* L.) differing in P uptake efficiency. J. Exp. Bot., **52(359)**, 1277-1282 (2001).
3. Rawat, S. R., et al., AtAMT1 gene expression and NH_4^+ uptake in roots of *Arabidopsis thaliana*: evidence for regulation by root glutamine levels. Plant J., **19(2)**, 143-152 (1999).
4. Baudys, M., et al., Crystallization and preliminary crystallographic study of cathepsin D inhibitor from potatoes. J. Mol. Biol., **218(1)**, 21-22 (1991).
5. Ammann, A. A., Determination of strong binding chelators and their metal complexes by anion-exchange chromatography and inductively coupled plasma mass spectrometry. J. Chromatogr. A, **947(2)**, 205-216 (2002).
6. Jonsbu, E., et al., Effects of nitrogen sources on cell growth and production of nystatin by *Streptomyces noursei*. J. Antibiot. (Tokyo), **53(12)**, 1354-1362 (2000).
7. Juteau, P., et al., Improving the biotreatment of hydrocarbons-contaminated soils by addition of activated sludge taken from the wastewater treatment facilities of an oil refinery. Biodegradation, **14(1)**, 31-40 (2003).
8. Jarzembski, M. A., et al., Complex refractive index of ammonium nitrate in the 2-20 μm spectral range. Appl. Opt., **42(6)**, 922-930 (2003).

GCY,RXR,MAM 10/05-1

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