SIGMA-ALDRICH

3050 Spruce Street
Saint Louis, Missouri 63103 USA
Telephone 800-325-5832 • (314) 771-5765
Fax (314) 286-7828
email: techserv@sial.com
sigma-aldrich.com

ProductInformation

Ammonium iron(III) sulfate dodecahydrate
ACS Reagent

Product Number **2,2126-0**
Storage Temperature 2-8 °C
Exact replacement for Product Number F 1018

Product Description

Molecular Formula: $FeNH_4(SO_4)_2 \cdot 12H_2O$
Molecular Weight: 482.2
CAS Number: 7783-83-7
Melting Point: approximately 37 °C[1]
Density: 1.71 g/cc[1]
Synonym(s): ammonium ferric sulfate dodecahydrate, ferric ammonium sulfate dodecahydrate, ferric alum, iron alum[1]

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

Ammonium ferric sulfate is a reagent that is used as a mordant in dyeing and textile printing.[1] It is also utilized in analytical chemistry as an iron standard.[2]

In biochemistry, ammonium ferric sulfate is used as a catalyst for the generation of free radicals.[3,4] Increased xanthine oxidase and xanthine oxidoreductase activity in cultured rat cells has been demonstrated in the presence of ammonium ferric sulfate.[5] Ammonium ferric sulfate may be used as an iron source to restore enzymatic activity in apoenzymes, such as for soybean lipoxygenase 3.[6]

Precautions and Disclaimer

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

Preparation Instructions

This product is soluble in 1% (v/v) aqueous HCl (100 mg/ml), with heat as needed, yielding a clear, yellow to brown solution. A 0.1 M aqueous solution of ferric ammonium sulfate has a pH of 2.5.[1]

References

1. The Merck Index, 12th Ed., Entry# 549.
2. Fujita, Y., et al., Spectrophotometric determination of ascorbic acid with iron(III) and *p*-carboxyphenylfluorone in a cationic surfactant micellar medium. Anal. Sci., **17(7)**, 853-857 (2001).
3. Puntarulo, S., and Cederbaum, A. I., Comparison of the ability of ferric complexes to catalyze microsomal chemiluminescence, lipid peroxidation, and hydroxyl radical generation. Arch. Biochem. Biophys., **264(2)**, 482-491 (1988).
4. Rashba-Step, J., et al., Oxidation of glycerol to formaldehyde by microsomes: are glycerol radicals produced in the reaction pathway? Biochemistry, **33(32)**, 9504-9510 (1994).
5. Ghio, A. J., et al., Iron regulates xanthine oxidase activity in the lung. Am. J. Physiol. Lung Cell. Mol. Physiol., **283(3)**, L563-572 (2002).
6. Kariapper, M. S., et al., Iron extraction from soybean lipoxygenase 3 and reconstitution of catalytic activity from the apoenzyme. Biochem. Biophys. Res. Commun., **284(3)**, 563-567 (2001).

GCY/RXR 6/03