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## Product Information

### Ammonium iron(III) sulfate dodecahydrate

#### SigmaUltra

Product Number **F1668**

Store at Room Temperature

#### Product Description

Molecular Formula:  $\text{FeNH}_4(\text{SO}_4)_2 \cdot 12\text{H}_2\text{O}$

Molecular Weight: 482.2

CAS Number: 7783-83-7

Melting Point: approximately 37 °C<sup>1</sup>

Density: 1.71 g/cc<sup>1</sup>

Synonym(s): ammonium ferric sulfate dodecahydrate, ferric ammonium sulfate dodecahydrate, ferric alum, iron alum<sup>1</sup>

Trace elemental analyses have been performed on the SigmaUltra ammonium ferric sulfate. The Certificate of Analysis provides lot-specific results. SigmaUltra ammonium ferric sulfate is for applications which require tight control of elemental content.

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

In biochemistry, ammonium ferric sulfate is used as a catalyst for the generation of free radicals.<sup>3,4</sup>

Increased xanthine oxidase and xanthine oxidoreductase activity in cultured rat cells has been demonstrated in the presence of ammonium ferric sulfate.<sup>5</sup> Ammonium ferric sulfate may be used as an iron source to restore enzymatic activity in apoenzymes, such as for soybean lipoxygenase 3.<sup>6</sup>

#### 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.<sup>1</sup>

#### 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).

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