

# Ammonium ferric citrate SDS/MSDS (Safety Data Sheet)

## 1. PRODUCT AND COMPANY IDENTIFICATION

Product identifier

- \* Product Name: Ammonium ferric citrate
- \* Catalog Number: E0375
- \* CAS Number: 1185-57-5
- \* IUPAC Name: 1,2,3-Propanetricarboxylic acid, 2-hydroxy-, ammonium iron(3+) salt

Relevant identified uses and uses advised against

- \* Identified uses: For research and development use only; laboratory chemicals; manufacture of substances.
- \* Uses advised against: Not for pharmaceutical, household, or other unapproved uses.

Details of the supplier

- \* Company: Selleck Chemicals
- \* TollFree: +1 877 796-6397
- \* Tel: +1 832 582-8158
- \* Fax: +1 832 582-8590

Emergency telephone number

- \* Emergency phone #: +1 832 582-8158

## 2. HAZARDS IDENTIFICATION

### 2.1 GHS classification in accordance with 29 CFR 1910 (OSHA HCS):

Skin irritation: Category 2. H315

Serious eye irritation: Category 2. H319

### 2.2 GHS Label elements, including precautionary statements

Hazard Pictogram(s)



Signal Word

Warning

Hazard statement(s)

H315: Causes skin irritation  
H319: Causes serious eye irritation

Precautionary statement(s)

None.

Prevention

P264: Wash hands thoroughly after handling.  
P264+P265: Wash hands thoroughly after handling. Do not touch eyes.  
P280: Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.

**Response**

P302+P352: IF ON SKIN: wash with plenty of water.  
P305+P351: IF IN EYES: Rinse cautiously with water for several minutes.  
P321: Specific treatment (see information on this label and safety datasheet)).  
P332+P317: If skin irritation occurs: Get medical help.  
P337+P317: If eye irritation persists: Get medical help.  
P338: Remove contact lenses, if present and easy to do. Continue rinsing.  
P362+P364: Take off contaminated clothing and wash it before reuse.

## 2.3 Other hazards

None.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 Substances

Product name: Ammonium ferric citrate  
CAS Number: 1185-57-5  
PubChem CID: 118984355  
Molecular formula:  $C_6H_{11}FeNO_7 \cdot 3$   
Molecular weight: 265.00 g/mol  
IUPAC name: azane;2-hydroxypropane-1,2,3-tricarboxylic acid;iron(3+)

### 3.2 Mixtures

Not applicable (pure substance).

## 4. FIRST-AID MEASURES

### 4.1 Description of first aid measures

Inhalation: Move to fresh air. Keep at rest in a position comfortable for breathing. Seek medical attention if symptoms persist.  
Skin contact: SKIN: flush with water. (USCG, 1999)  
Eye contact: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. Seek medical attention.  
Ingestion: INGESTION: give large amount of water.  
EYES or

### 4.2 Most important symptoms and effects, both acute and delayed

See Section 11 (Toxicological Information).

### 4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically. Contact a poison control center or physician for severe exposure.

## 5. FIRE-FIGHTING MEASURES

### 5.1 Extinguishing media

Suitable: Water spray, dry chemical, carbon dioxide (CO<sub>2</sub>), alcohol-resistant foam.  
Unsuitable: None known.

## 5.2 Specific hazards arising from the substance or mixture

If material involved in fire: Extinguish fire using agent suitable for type of surrounding fire. (Material itself does not burn or burns with difficulty.)

## 5.3 Advice for firefighters

Wear self-contained breathing apparatus (SCBA) and full protective clothing.

Fight fire from upwind. Cool containers with water spray until fire is extinguished.

# 6. ACCIDENTAL RELEASE MEASURES

## 6.1 Personal precautions, protective equipment and emergency procedures

Wear appropriate personal protective equipment (see Section 8).

Avoid breathing dust/vapor. Ensure adequate ventilation.

Evacuate personnel to safe areas. Keep people away from and upwind of spill.

## 6.2 Environmental precautions

Prevent product from entering drains, waterways, or soil.

Contain spill with inert absorbent material.

## 6.3 Methods and materials for containment and cleaning up

Environmental considerations: Water spill: Neutralize with agricultural lime (CaO), crushed limestone (CaCO<sub>3</sub>), or sodium bicarbonate (NaHCO<sub>3</sub>). Adjust pH to neutral (pH+ 7). Use mechanical dredges or lifts to remove immobilized masses of pollutants and precipitates.

Environmental considerations: Land spill: Big a pit, pond, lagoon, holding area to contain liquid or solid material.

/SRP: If time permits, pits, ponds, lagoons, soak holes, or holding areas should be sealed with an impermeable flexible membrane liner./ Cover solidis with a plastic sheet to prevent dissolving in rain or fire fighting water.

SRP: The most favorable course of action is to use an alternative chemical product with less inherent propensity for occupational exposure or environmental contamination. Recycle any unused portion of the material for its approved use or return it to the manufacturer or supplier. Ultimate disposal of the chemical must consider: the material's impact on air quality; potential migration in soil or water; effects on animal, aquatic, and plant life; and conformance with environmental and public health regulations.

The following wastewater treatment technologies have been investigated for iron (Fe+2): Concentration process: Biological treatment. /Iron (Fe+2)/

Personnel protection: Keep upwind. ... Avoid breathing vapors or dusts. Wash away any material which may have contacted the body with copious amounts of water or soap and water.

If material not involved in fire: Keep material out of water sources and sewers. Build dikes to contain flow as necessary.

SRP: The scientific literature for the use of contact lenses in industry is conflicting. The benefit or detrimental effects of wearing contact lenses depend not only upon the substance, but also on factors including the form of the substance, characteristics and duration of the exposure, the uses of other eye protection equipment, and the hygiene of the lenses. However, there may be individual substances whose irritating or corrosive properties are such that the wearing of contact lenses would be harmful to the eye. In those specific cases, contact lenses should not be worn. In any event, the usual eye protection equipment should be worn even when contact lenses are in place.

All ... /iron/ preparations should be kept in child-proof bottles. /Iron preparations/

# 7. HANDLING AND STORAGE

### **7.1 Precautions for safe handling**

Keep well closed and protected from light.

### **7.2 Conditions for safe storage, including any incompatibilities**

Keep well closed and protected from light.

Store away from incompatible materials (see Section 10).

[Note: Specific storage temperature not available in public databases. Refer to supplier Certificate of Analysis (COA) for exact storage conditions.]

## **8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

### **8.1 Exposure controls**

#### **8.1.1 Occupational exposure limits (OEL)**

OSHA PEL: Not established.

ACGIH TLV: Not established.

NIOSH REL: Not established.

No occupational exposure limit values are established for this substance.

Use the lowest feasible exposure level (ALARA principle).

#### **8.1.2 Appropriate engineering controls**

Use in a well-ventilated area. Chemical fume hood recommended for powder handling.

### **8.2 Individual protection measures**

#### **8.2.1 Eye/face protection**

Wear chemical safety goggles.

#### **8.2.2 Skin protection**

Wear protective gloves. Recommended material: Nitrile rubber.

Wear suitable protective clothing (lab coat).

#### **8.2.3 Respiratory protection**

Respiratory protection usually not required under normal use with adequate ventilation.

Use N95 respirator for large-scale powder handling.

#### **8.2.4 Thermal hazards**

Not applicable.

## **9. PHYSICAL AND CHEMICAL PROPERTIES**

### **9.1 Information on basic physical and chemical properties**

a) Appearance: Ferric ammonium citrate is a yellowish brown to red solid with a faint odor of ammonia. It is soluble in water. The primary hazard is the threat to the environment. Immediate steps should be taken to limit its spread to the environment. It is used in medicine, in making blueprints, and as a feed additive.

b) Odor: No data available

c) Odor threshold: No data available

d) pH: No data available

e) Melting point/freezing point: No data available

f) Initial boiling point and boiling range: No data available

g) Flash point: No data available

- h) Evaporation rate: No data available
- i) Flammability (solid, gas): No data available
- j) Upper/lower flammability or explosive limits: No data available
- k) Vapor pressure: No data available
- l) Vapor density: No data available
- m) Relative density: 1.8 at 68 °F (USCG, 1999) - Denser than water; will sink
- n) Water solubility: Soluble in DMSO; slightly soluble in water
- o) Partition coefficient: n-octanol/water: Log P: No data available
- p) Auto-ignition temperature: No data available
- q) Decomposition temperature: No data available
- r) Viscosity: No data available
- s) Explosive properties: No data available
- t) Oxidizing properties: No data available

## 9.2 Other information

Topological Polar Surface Area (TPSA): 133 Å<sup>2</sup>  
Complexity: 227

# 10. STABILITY AND REACTIVITY

## 10.1 Reactivity

No specific reactivity hazards identified under normal handling conditions.

## 10.2 Chemical stability

Stable under recommended storage conditions.

## 10.3 Possibility of hazardous reactions

No hazardous reactions under normal conditions.

## 10.4 Conditions to avoid

Avoid heat, sparks, open flames, direct sunlight, and moisture.  
Avoid strong oxidizing agents, strong acids, and strong bases.

## 10.5 Incompatible materials

Incompatible with iodides, acacia prepn, & tannins.

## 10.6 Hazardous decomposition products

Thermal decomposition may produce: Carbon monoxide (CO), Carbon dioxide (CO<sub>2</sub>), Nitrogen oxides (NO<sub>x</sub>), Hydrogen fluoride (HF).  
See also Section 5 (Fire-fighting measures) for combustion products.

# 11. TOXICOLOGICAL INFORMATION

## 11.1 Information on toxicological effects

### Acute toxicity:

No acute toxicity data available.

**Skin corrosion/irritation:**

Causes skin irritation (H315).

**Serious eye damage/eye irritation:**

Causes serious eye irritation (H319).

**Respiratory or skin sensitization:**

No data available.

**Germ cell mutagenicity:**

No data available.

**Carcinogenicity:**

No data available.

**Reproductive toxicity:**

No data available.

**Specific target organ toxicity (single exposure):**

No data available.

**Specific target organ toxicity (repeated exposure):**

No data available.

**Aspiration hazard:**

No data available.

**11.2 Additional information**

No additional toxicological information available.

**12. ECOLOGICAL INFORMATION****12.1 Toxicity**

LD50 *Anguilla japonica* (Japanese eel) injection 80 ug/g/96 hr /Conditions of bioassay not specified in source examined/

LD50 *Plecoglossus altivelis* (Ayu) injection 123 ug/g/96 hr /Conditions of bioassay not specified in source examined/ /AQUATIC SPECIES/ Distribution of radioiron to various tissues after intraperitoneal injections was examined in Atlantic salmon and rainbow trout. Liver and spleen were found to be the major iron storage tissues. Injections of 1 or 5 mg iron as ferric ammonium citrate led to a fall in hemoglobin levels in both species after 2 days. Hemoglobin levels returned to normal levels in rainbow trout after 8 days, but Atlantic salmon had not recovered, and Hb levels fell below 3 g/100 mL. In both species, the fall in Hb was associated with a raise in iron levels in spleen and liver, suggesting damage to erythrocytes. Atlantic salmon liver ferritin showed a two- to threefold increase, while rainbow trout showed a sixfold increase, and a more rapid response.

**12.2 Persistence and degradability**

No data available.

**12.3 Bioaccumulative potential**

No data available.

**12.4 Mobility in soil**

No data available.

**12.5 Results of PBT and vPvB assessment**

PBT/vPvB assessment not available.

## **12.6 Other adverse effects**

No other adverse ecological effects identified.

## **13. DISPOSAL CONSIDERATIONS**

### **13.1 Waste treatment methods**

Waste Treatment Methods: Waste material must be disposed of in accordance with national and local regulations. Leave chemicals in original containers and do not mix with other waste. Handle uncleaned containers in the same manner as the product itself.

## **14. TRANSPORT INFORMATION**

### **14.1 UN number**

Not regulated as dangerous goods (research quantities typically exempt).

### **14.2 UN proper shipping name**

Not subject to transport regulations (small quantities for research use).

### **14.3 Transport hazard class(es)**

Not classified as dangerous goods for transport (research quantities).

### **14.4 Packing group**

Not applicable (not regulated as dangerous goods in typical research quantities).

### **14.5 Environmental hazards**

Marine pollutant: No (not classified as environmentally hazardous per GHS).

### **14.6 Special precautions for user**

Transport in original packaging. Ensure containers are tightly sealed.  
For bulk or commercial quantities, consult applicable transport regulations (DOT, IATA, IMDG).

### **14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

Not applicable.

## **15. REGULATORY INFORMATION**

### **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

US EPA / TSCA: Subject to EPA TSCA regulations

EU ECHA / REACH: Registered (REACH Active)

#### **SARA 302 Components:**

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

#### **SARA 313 Components:**

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

#### **SARA 311/312 Hazards:**

Acute (short-term) health hazard

**Massachusetts Right To Know Components:**

This material contains components subject to the Massachusetts Right to Know Act. See Section 2 for hazard classification.

**Pennsylvania Right To Know Components:**

This material contains components subject to the Pennsylvania Right to Know Act. See Section 2 for hazard classification.

**New Jersey Right To Know Components:**

This material contains components subject to the New Jersey Right to Know Act. See Section 2 for hazard classification.

**California Prop. 65 Components:**

This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

**Other regulatory listings:**

- The Australian Inventory of Industrial Chemicals: Chemical: 1,2,3-Propanetricarboxylic acid, 2-hydroxy-, ammonium iron(3+) salt
- EFSA Legal Basis: Commission Regulation (EC) No 1565/2000 (Repealed by Com. Implementing Reg. (EU) No 872/2012)
- New Jersey Worker and Community Right to Know Act: The New Jersey Worker and Community Right to Know Act requires public and private employers to provide information about hazardous substances at their workplaces. (N.J.S.A. 34:5A-1 et. seq.)
- Federal Drinking Water Guidelines: EPA 300 ug/L /Iron/
- Clean Water Act Requirements: Ferric ammonium citrate is designated as a hazardous substance under section 311(b)(2)(A) of the Federal Water Pollution Control Act and further regulated by the Clean Water Act Amendments of 1977 and 1978. These regulations apply to discharges of this substance. This designation includes any isomer

**15.2 Chemical safety assessment**

A chemical safety assessment has not been carried out for this substance.

For research-use-only compounds, no CSA is required under REACH Annex I.

**16. OTHER INFORMATION**

Revision Date: 2026/09/08

Further Information: The information provided is believed to be correct but is not exhaustive and should be used only as a guideline based on current knowledge. It does not represent a guarantee of the properties of the product.

Selleck Chemicals Corporation and its Affiliates shall not be held liable for any damage resulting from handling or contact with the product.