

MATERIAL SAFETY DATA SHEET**Product Name:** Ammonium ferric citrate**CAS No.:** 1185-57-5**Version:** 0**1. Identification**

Product Code : 90751
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2. Composition/Information on Ingredients

Ingredient	CAS No	Percent
AMMONIUM FERRIC CITRATE	1185-57-5	90- 100%

3. Hazards Identification**Hazard classification****Health hazards**

Serious eye damage/eye irritation : Category 2

Labels elements**Hazard symbol** : No Symbol**Signal word** : Warning**Hazard statement** : Causes eye irritation.**Precautionary statement****Prevention** : Wash thoroughly after handling.**Response** : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.**Storage** : Store locked up.**Disposal** : Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.**Other hazards which do not result in GHS classification** : None.**4. First Aid Measures****General information** : Get medical advice/attention if you feel unwell. If medical advice is needed, have product container or label at hand. Show this safety data sheet to the doctor in attendance.**Ingestion** : Rinse mouth. Call a POISON CENTER or doctor/physician if you

MATERIAL SAFETY DATA SHEET**Product Name:** Ammonium ferric citrate**CAS No.:** 1185-57-5**Version:** 0

- feel unwell.
- Inhalation** : Move to fresh air. Treat symptomatically. Get medical attention if symptoms persist.
- Skin contact** : Wash skin thoroughly with soap and water. Get medical attention if symptoms occur. Wash contaminated clothing before reuse.
- Eye contact** : Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention if symptoms occur.
- Most important symptoms/effects, acute and delayed** : Irritating to eyes, respiratory system and skin.
- Indication of immediate medical attention and special treatment needed** : Treat symptomatically.

5. Fire fighting measures

- General fire hazards** : No unusual fire or explosion hazards noted.
- Suitable (and unsuitable) extinguishing media**
- Suitable extinguishing media** : Use fire-extinguishing media appropriate for surrounding materials.
- Unsuitable extinguishing media** : None known.
- Specific hazards arising from the chemical** : During fire, gases hazardous to health may be formed.
- Special protective equipment and precautions for firefighters**
- Special fire fighting procedures** : Move containers from fire area if you can do so without risk. Use water spray to keep fire-exposed containers cool. Cool containers exposed to flames with water until well after the fire is out.
- Special protective equipment for fire-fighters** : Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

6. Accidental Release Measures

- Personal precautions, protective equipment and emergency procedures** : Keep unauthorized personnel away. Keep upwind. Use personal protective equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them.
- Methods and material for containment and cleaning up** : Sweep up and place in a clearly labeled container for chemical waste. Clean surface thoroughly to remove residual contamination.
- Notification Procedures** : Prevent entry into waterways, sewer, basements or confined areas. Inform authorities if large amounts are involved.
- Environmental precautions** : Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

MATERIAL SAFETY DATA SHEET

Product Name: Ammonium ferric citrate

CAS No.: 1185-57-5

Version: 0

7. Handling and Storage

- Precautions for safe handling** : Avoid conditions which create dust. Avoid inhalation of dust. Avoid contact with eyes, skin, and clothing. Do not taste or swallow. Do not eat, drink or smoke when using the product. Use only with adequate ventilation. Wash thoroughly after handling.
- Conditions for safe storage, including any incompatibilities** : Keep containers tightly closed. Store in a well-ventilated place.

8. Exposure Controls Personal Protection

Control parameters
Occupational exposure limits

Chemical identity	Type	Exposure Limit values	Source
FERRIC AMMONIUM CITRATE - as Fe	TWA	1 mg/m ³	US. ACGIH Threshold Limit Values (2011)
	REL	1 mg/m ³	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	TWA	1 mg/m ³	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	TWA	1 mg/m ³	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (06 2008)
FERRIC AMMONIUM CITRATE	ST ESL	10 µg/m ³	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (12 2010)
	AN ESL	1 µg/m ³	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (12 2010)
FERRIC AMMONIUM CITRATE - as Fe	TWA PEL	1 mg/m ³	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (08 2010)

- Appropriate engineering controls** : No data available.
- Individual protection measures, such as personal protective equipment**
- General information** : Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. An eye wash and safety shower must be available in the immediate work area. Use explosion-proof ventilation equipment.

MATERIAL SAFETY DATA SHEET**Product Name:** Ammonium ferric citrate**CAS No.:** 1185-57-5**Version:** 0

Eye/face protection	:	Wear safety glasses with side shields (or goggles).
Hand protection	:	Chemical resistant gloves.
Other	:	Wear suitable protective clothing.
Respiratory protection	:	In case of inadequate ventilation use suitable respirator.
Hygiene measures	:	Provide eyewash station and safety shower. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Do not get this material in contact with skin. Do not get in eyes.

9. Physical and Chemical Properties

Appearance	:	Green or brown Solid.
Odor	:	Odorless or slight odor
pH	:	No data available.
Melting point/freezing point	:	No data available.
Initial boiling point and boiling range	:	No data available.
Flash Point	:	No data available
Vapor pressure	:	No data available.
Vapor density	:	No data available.
Relative density	:	1.8 (20 °C) 4 °C
Solubility in water	:	Very Soluble
Solubility (other)	:	No data available.
Formula	:	$C_6H_8O_7 \cdot xFe^{3+} \cdot YNH_3$
Molecular Weight	:	-

10. Stability and Reactivity

Reactivity	:	No dangerous reaction known under conditions of normal use.
Chemical stability	:	Material is stable under normal conditions.
Possibility of hazardous reactions	:	Hazardous polymerization does not occur.
Conditions to avoid	:	Contact with incompatible materials. Heat. Light. Moisture
Incompatible materials	:	Strong oxidizing agents. Iodides.
Hazardous decomposition products	:	Thermal decomposition may produce oxides of carbon and nitrogen.

MATERIAL SAFETY DATA SHEET

Product Name: Ammonium ferric citrate

CAS No.: 1185-57-5

Version: 0

11. Toxicological Information**Information on likely routes of exposure**

- Ingestion** : May cause irritation of the gastrointestinal tract.
Inhalation : May cause irritation to the respiratory system.
Skin contact : Causes mild skin irritation.
Eye contact : Causes eye irritation.

Information on toxicological effects**Acute toxicity (list all possible routes of exposure)**

- Oral Product** : No data available.
Dermal Product : No data available.
Inhalation Product : No data available
Repeated dose toxicity Product : No data available.
Skin corrosion/irritation Product : Causes mild skin irritation.
Serious eye damage/eye irritation Product : Causes eye irritation.
Respiratory or skin sensitization Product : Not a skin sensitizer.
Carcinogenicity Product : This substance has no evidence of carcinogenic properties.
IARC Monographs on the Evaluation of Carcinogenic Risks to Humans DIOXANE : No carcinogenic components identified.
US. National Toxicology Program (NTP) Report on Carcinogens DIOXANE : No carcinogenic components identified.
US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050 : No carcinogenic components identified.
Germ cell mutagenicity In vitro Product : No mutagenic components identified.
In vivo Product : No mutagenic components identified.
Reproductive toxicity Product : No components toxic to reproduction.
Specific target organ toxicity - single exposure Product : Respiratory tract irritation.
Specific target organ toxicity - repeated exposure Product : No data available.
Aspiration hazard Product : Not classified
Other effects : None known.

MATERIAL SAFETY DATA SHEET

Product Name: Ammonium ferric citrate

CAS No.: 1185-57-5

Version: 0

12. Ecological Information

Ecotoxicity

Acute hazards to the aquatic environment :

Fish Product : No data available.

Aquatic invertebrates Product : No data available.

Chronic hazards to the aquatic environment :

Fish Product : No data available.

Aquatic invertebrates Product : No data available.

Toxicity to Aquatic Plants Product: : No data available.

Persistence and degradability

Biodegradation Product : There are no data on the degradability of this product.

BOD/COD ratio Product : No data available.

Bioaccumulative potential

Bioconcentration factor (BCF) Product : No data available on bioaccumulation.

Product

Partition coefficient n-octanol / water (log Kow) Product : No data available.

Mobility in soil : The product is water soluble and may spread in water systems.

Other adverse effects : The product is mildly toxic to aquatic organisms.

13. Disposal consideration

Disposal instructions : Discharge, treatment, or disposal may be subject to national, state, or local laws.

Contaminated packaging : Since emptied containers retain product residue, follow label warnings even after container is emptied.

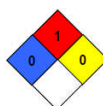
14. Transport information

	UN No.	UN proper shipping name	Hazard Class(es)	Packaging group	Marine Pollutant
DOT			Not regulated.		
IMDG			Not regulated.		
IATA			Not regulated.		

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This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

Safety, health and environmental regulations/legislation specific for the substance or mixture
No Data Available.

16. Other Information**NFPA Hazard ID**

Flammability
Health
Reactivity
Special hazard.

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 – Severe.

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