SECTION 1: Identification

1.1. Identification

<table>
<thead>
<tr>
<th>Product form</th>
<th>Substance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Substance name</td>
<td>Ferric Ammonium Citrate</td>
</tr>
<tr>
<td>CAS-No.</td>
<td>1185-57-5</td>
</tr>
<tr>
<td>Formula</td>
<td>C_{6}H_{8}O_{7} \cdot xFe \cdot xNH_{4}</td>
</tr>
</tbody>
</table>

1.2. Recommended use and restrictions on use

| Use of the substance/mixture | Nutritional Supplement; Specialized Plant Nutrient Photographic and blueprint reproduction Speciality water treatment Pharmaceuticals |

1.3. Supplier

Manufacturer
Jost Chemical Co.
8150 Lackland Rd.
Saint Louis, Missouri 63114
T 314-428-4300 - F 314-428-4366
sds@jostchemical.com - www.jostchemical.com

1.4. Emergency telephone number

| Emergency number | For Hazardous Materials [or Dangerous Goods] Incident Spill, Leak, Fire, Exposure, or Accident Call CHEMTREC Day or Night United States and Canada: 1-800-424-9300 / +1 703-527-3887 Global: +1 703-741-5970 |

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

<table>
<thead>
<tr>
<th>GHS-US classification</th>
<th>Skin corrosion/irritation Category 2 Serious eye damage/eye irritation Category 2 Specific target organ toxicity (single exposure) Category 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>H315</td>
<td>Causes skin irritation</td>
</tr>
<tr>
<td>H319</td>
<td>Causes serious eye irritation</td>
</tr>
<tr>
<td>H335</td>
<td>May cause respiratory irritation</td>
</tr>
</tbody>
</table>

Full text of H statements: see section 16

2.2. GHS Label elements, including precautionary statements

GHS-US labeling

Hazard pictograms (GHS-US)

Signal word (GHS-US) | Warning |

Hazard statements (GHS-US)

| H315 - Causes skin irritation |
| H319 - Causes serious eye irritation |
| H335 - May cause respiratory irritation |

Precautionary statements (GHS-US)

| P261 - Avoid breathing dust/fume/gas/mist/vapors/spray. |
| P264 - Wash hands, forearms and face thoroughly after handling. |
| P271 - Use only outdoors or in a well-ventilated area. |
| P280 - Wear protective gloves/protective clothing/eye protection/face protection. |
| P302+P352 - If on skin: Wash with plenty of water. |
| P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing. |
| P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P312 - Call a poison center or doctor if you feel unwell. |
| P321 - Specific treatment (see supplemental first aid instruction on this label) |
2.3. Other hazards which do not result in classification

Other hazards not contributing to the classification: None under normal conditions.

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

<table>
<thead>
<tr>
<th>Name</th>
<th>Substance type</th>
<th>Product identifier</th>
<th>%</th>
<th>GHS-US classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ferric Ammonium Citrate (Main constituent)</td>
<td>Mono-constituent</td>
<td>(CAS-No.) 1185-57-5</td>
<td>100</td>
<td>Skin Irrit. 2, H315, Eye Irrit. 2, H319, STOT SE 3, H335</td>
</tr>
</tbody>
</table>

Full text of hazard classes and H-statements: see section 16

3.2. Mixtures

Not applicable

SECTION 4: First-aid measures

4.1. Description of first aid measures


First-aid measures after inhalation: Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.

First-aid measures after skin contact: Rinse with water. Soap may be used. Do not apply (chemical) neutralizing agents. Take victim to a doctor if irritation persists.

First-aid measures after eye contact: Rinse with water. Remove contact lenses, if present and easy to do. Continue rinsing. Do not apply neutralizing agents. Take victim to an ophthalmologist if irritation persists.


4.2. Most important symptoms and effects (acute and delayed)

Potential Adverse human health effects and symptoms: Slightly irritant to skin. Slightly irritant to respiratory organs. Slightly irritant to eyes.

Symptoms/effects after inhalation: Slight irritation.

Symptoms/effects after skin contact: Slight irritation.

Symptoms/effects after eye contact: Slight irritation.


4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media


5.2. Specific hazards arising from the chemical

Fire hazard: No data available on direct fire hazard. No data available on indirect fire hazard.

Explosion hazard: No data available on direct explosion hazard. No data available on indirect explosion hazard.

Reactivity: Decomposes on exposure to light.
5.3. Special protective equipment and precautions for fire-fighters

Precautionary measures fire: Exposure to fire/heat: keep upwind. Exposure to fire/heat: consider evacuation. Exposure to fire/heat: have neighborhood close doors and windows.

Firefighting instructions: Cool tanks/drums with water spray/remove them into safety. Dilute toxic gases with water spray.


SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel


Emergency procedures: Mark the danger area. Prevent dust cloud formation, e.g. by wetting. No naked flames. Wash contaminated clothes.


6.1.2. For emergency responders

Protective equipment: Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

Emergency procedures: Avoid contact with skin and eyes.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment: Contain released product, pump into suitable containers. Plug the leak, cut off the supply. Knock down/dilute dust cloud with water spray.

Methods for cleaning up: Stop dust cloud by covering with sand/earth. Scoop solid spill into closing containers. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling.

Other information: Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling


Hygiene measures: Observe normal hygiene standards. Keep container tightly closed.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures: Take all necessary measures to avoid accidental discharge of products into drains and waterways due to the rupture of containers or transfer systems.

Storage conditions: Store in a clean, dry warehouse in the original unopened containers. Store locked up. Store in a well-ventilated place. Keep container tightly closed. Keep cool.

Heat-ignition: KEEP SUBSTANCE AWAY FROM: heat sources. ignition sources.

Information on mixed storage: KEEP SUBSTANCE AWAY FROM: oxidizing agents. water/moisture.

Storage area: Store at room temperature. Store in a dry area. Store in a dark area. Keep container in a well-ventilated place. Meet the legal requirements.

Special rules on packaging: SPECIAL REQUIREMENTS: closing. watertight. dry. opaque. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.

Packaging materials: SUITABLE MATERIAL: cardboard. synthetic material.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available
8.2. **Appropriate engineering controls**

Appropriate engineering controls: Ensure good ventilation of the work station.

Environmental exposure controls: Avoid release to the environment.

8.3. **Individual protection measures/Personal protective equipment**

**Personal protective equipment:**


**Materials for protective clothing:**

Wear suitable protective clothing, gloves and eye/face protection

**Hand protection:**

Gloves

**Eye protection:**

Safety glasses. In case of dust production: protective goggles

**Skin and body protection:**

Protective clothing

**Respiratory protection:**

Dust production: dust mask with filter type P1

**Personal protective equipment symbol(s):**

---

**SECTION 9: Physical and chemical properties**

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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Solid</td>
</tr>
<tr>
<td>Appearance</td>
<td>Brown, occurs as thin, transparent brown, red-brown or garnet red scales or granules, Green powder.</td>
</tr>
<tr>
<td>Color</td>
<td>Green to red-brown</td>
</tr>
<tr>
<td>Odor</td>
<td>Mild odor Ammonia odor</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>pH solution</td>
<td>10 g/l Aqueous Solution</td>
</tr>
<tr>
<td>Melting point</td>
<td>No data available</td>
</tr>
<tr>
<td>Freezing point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Boiling point</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Relative evaporation rate (butyl acetate=1)</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Non flammable.</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative vapor density at 20 °C</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Relative density</td>
<td>1.8</td>
</tr>
<tr>
<td>Specific gravity / density</td>
<td>1800 kg/m³</td>
</tr>
<tr>
<td>Molecular mass</td>
<td>261.98 g/mol</td>
</tr>
<tr>
<td>Solubility</td>
<td>Soluble in water, Water: 120 g/100ml</td>
</tr>
<tr>
<td>Log Pow</td>
<td>No data available</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>
Decomposition temperature: No data available
Viscosity, kinematic: No data available
Viscosity, dynamic: No data available
Explosion limits: Not applicable
Explosive properties: No data available
Oxidizing properties: No data available

9.2. Other information
VOC content: 0 %
Other properties: Translucent. Hygroscopic. Physical properties depending on the composition.

SECTION 10: Stability and reactivity

10.1. Reactivity
Decomposes on exposure to light.

10.2. Chemical stability
Unstable on exposure to light. Hygroscopic.

10.3. Possibility of hazardous reactions
No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid
None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials
No additional information available

10.6. Hazardous decomposition products

SECTION 11: Toxicological information

11.1. Information on toxicological effects
Acute toxicity (oral): Not classified (Lack of data)
Acute toxicity (dermal): Not classified
Acute toxicity (inhalation): Not classified
Skin corrosion/irritation: Causes skin irritation.
Serious eye damage/irritation: Causes serious eye irritation.
Respiratory or skin sensitization: Not classified (Lack of data)
Germ cell mutagenicity: Not classified (Lack of data)
Carcinogenicity: Not classified
Reproductive toxicity: Not classified (Lack of data)
Specific target organ toxicity – single exposure: May cause respiratory irritation.
Specific target organ toxicity – repeated exposure: Not classified (Lack of data)
Aspiration hazard: Not classified (Not applicable)
Viscosity, kinematic: No data available
Likely routes of exposure: Skin and eye contact.
Potential Adverse human health effects and symptoms: Slightly irritant to skin. Slightly irritant to respiratory organs. Slightly irritant to eyes.
Symptoms/effects after inhalation: Slight irritation.
Symptoms/effects after skin contact: Slight irritation.
Symptoms/effects after eye contact: Slight irritation.
SECTION 12: Ecological information

12.1. Toxicity
Ecology - general : Not classified as dangerous for the environment according to the criteria of Regulation (EC) No 1272/2008.
Ecology - air : Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009).

12.2. Persistence and degradability
Ferric Ammonium Citrate (1185-57-5)
Persistence and degradability : Biodegradability in water: no data available.

12.3. Bioaccumulative potential
Ferric Ammonium Citrate (1185-57-5)
Bioaccumulative potential : Not bioaccumulative.

12.4. Mobility in soil
No additional information available

12.5. Other adverse effects
No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods
Waste treatment methods : Dispose of contents/container in accordance withlicensed collector’s sorting instructions.
Product/Packaging disposal recommendations : Recycle/reuse.

SECTION 14: Transport information

Department of Transportation (DOT)
In accordance with DOT
Not regulated

Transportation of Dangerous Goods
Proper Shipping Name (Transportation of Dangerous Goods) : Not regulated for transport

Transport by sea
Proper Shipping Name (IMDG) : Not regulated for transport

Air transport
Proper Shipping Name (IATA) : Not regulated for transport

SECTION 15: Regulatory information

15.1. US Federal regulations
Ferric Ammonium Citrate (1185-57-5)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
CERCLA RQ : 1000 lb

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory
15.2. International regulations

**CANADA**

**Ferric Ammonium Citrate (1185-57-5)**

Listed on the Canadian DSL (Domestic Substances List)

**EU-Regulations**

**Ferric Ammonium Citrate (1185-57-5)**

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

**National regulations**

**Ferric Ammonium Citrate (1185-57-5)**

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on the Korean ECL (Existing Chemicals List)
Listed on INSO (Mexican national Inventory of Chemical Substances)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

15.3. US State regulations

**Ferric Ammonium Citrate (1185-57-5)**

State or local regulations

| U.S. - Massachusetts - Right To Know List |
| U.S. - New Jersey - Right to Know Hazardous Substance List |
| U.S. - Pennsylvania - RTK (Right to Know) List |

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

### SECTION 16: Other information

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Revision date: 06/11/2018

**Full text of H-phrases:**

| H315 | Causes skin irritation |
| H319 | Causes serious eye irritation |
| H335 | May cause respiratory irritation |

NFPA health hazard: 1 - Materials that, under emergency conditions, can cause significant irritation.

NFPA fire hazard: 0 - Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.

NFPA reactivity: 0 - Material that in themselves are normally stable, even under fire conditions.

**Hazard Rating**

Health: 1 - Slight Hazard - Irritation or minor reversible injury possible

Flammability: 0 - Minimal Hazard - Materials that will not burn

Physical: 0 - Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

SDS US (HazCom 2012)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.