SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier
   - Product form: Substance
   - Substance name: Ferric Ammonium Citrate
   - EC-No.: 214-686-6
   - CAS-No.: 1185-57-5

1.2. Relevant identified uses of the substance or mixture and uses advised against
1.2.1. Relevant identified uses
   - Use of the substance/mixture: Nutritional Supplement; Specialized Plant Nutrient; Photographic and blueprint reproduction; Specialty water treatment; Pharmaceuticals

1.2.2. Uses advised against
   - No additional information available

1.3. Details of the supplier of the safety data sheet
   - Manufacturer: Jost Chemical Co.
     8150 Lackland Rd.
     63114 Saint Louis, Missouri
     T 314-428-4300 - F 314-428-4366
     sds@jostchemical.com - www.jostchemical.com
   - Distributor: JOST CHEMICAL EUROPE SPRL
     rue du Bois Portal n° 30/1-3
     B - 5300 Anderne - BELGIQUE
     T +32 85-552655 - F +32 85-552654
     info@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: Hazards identification

2.1. Classification of the substance or mixture
   - Skin corrosion/irritation, Category 2: H315
   - Serious eye damage/eye irritation, Category 2: H319
   - Specific target organ toxicity — Single exposure, Category 3: H335
   - Respiratory tract irritation
   - Full text of H statements: see section 16

2.2. Label elements
   - Hazard pictograms (CLP): GHS07
   - Signal word (CLP): Warning
   - Hazard statements (CLP):
     - H315 - Causes skin irritation.
     - H319 - Causes serious eye irritation.
     - H335 - May cause respiratory irritation.
Precautionary statements (CLP)  
P261 - Avoid breathing dust/fume/gas/mist/vapours/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.  
P321 - Specific treatment (see supplemental first aid instruction on this label).  
P332+P313 - If skin irritation occurs: Get medical advice/attention.  
P337+P313 - If eye irritation persists: Get medical advice/attention.  
P362+P364 - Take off contaminated clothing and wash it before reuse.  
P403+P233 - Store in a well-ventilated place. Keep container tightly closed.  
P405 - Store locked up.  
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

2.3. Other hazards  
Other hazards not contributing to the classification  
PBT: not yet assessed  
vPvB: not yet assessed

SECTION 3: Composition/information on ingredients

3.1. Substances
Substance type: Mono-constituent

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ferric Ammonium Citrate</td>
<td>(CAS-No.) 1185-57-5</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>(EC-No.) 214-686-6</td>
<td></td>
</tr>
</tbody>
</table>

Full text of 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 general  

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.

First-aid measures after ingestion  
Rinse mouth with water. Call Poison Information Centre (www.big.be/antigif.htm). Consult a doctor/medical service if you feel unwell. Ingestion of large quantities: immediately to hospital.

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

Symptoms/effects after inhalation : Slight irritation.

Symptoms/effects after skin contact : Slight irritation.

Symptoms/effects after eye contact : Slight irritation.


4.3. Indication of any immediate medical attention and special treatment needed
Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media
Suitable extinguishing media  

Unsuitable extinguishing media  
Quick-acting BC powder extinguisher. Quick-acting CO2 extinguisher.

5.2. Special hazards arising from the substance or mixture
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.

Hazardous decomposition products in case of fire: On burning: release of toxic and corrosive gases/vapours (ammonia, nitrous vapours, carbon monoxide - carbon dioxide).

5.3. Advice for firefighters
Precautionary measures fire: Exposure to fire/heat: keep upwind. Exposure to fire/heat: consider evacuation. Exposure to fire/heat: have neighbourhood 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.
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.

7.3. Specific end use(s)
No additional information available

SECTION 8: Exposure controls/personal protection
8.1. Control parameters
No additional information available
8.2. Exposure controls

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

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):

Environmental exposure controls:
Avoid release to the environment.

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>Molecular mass</td>
<td>261.98 g/mol</td>
</tr>
<tr>
<td>Colour</td>
<td>Green to red-brown.</td>
</tr>
<tr>
<td>Odour</td>
<td>Mild odour. Ammonia odour.</td>
</tr>
<tr>
<td>Odour 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>Relative evaporation rate (butylacetate=1)</td>
<td>No data available</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>Auto-ignition temperature</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Non flammable.</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative vapour density at 20 °C</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Relative density</td>
<td>1.8</td>
</tr>
<tr>
<td>Density</td>
<td>1800 kg/m³</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>Viscosity, kinematic</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, dynamic</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Oxidising properties</td>
<td>No data available</td>
</tr>
</tbody>
</table>
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

<table>
<thead>
<tr>
<th>Effect</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity (oral)</td>
<td>Not classified (Lack of data)</td>
</tr>
<tr>
<td>Acute toxicity (dermal)</td>
<td>Not classified (Lack of data)</td>
</tr>
<tr>
<td>Acute toxicity (inhalation)</td>
<td>Not classified (Lack of data)</td>
</tr>
<tr>
<td>Causes serious eye damage.</td>
<td>Causes skin irritation. (Lack of data)</td>
</tr>
<tr>
<td>Serious eye damage/irritation</td>
<td>Causes serious eye irritation. (Lack of data)</td>
</tr>
<tr>
<td>Respiratory or skin sensitisation</td>
<td>Not classified (Lack of data)</td>
</tr>
<tr>
<td>Germ cell mutagenicity</td>
<td>Not classified (Lack of data)</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>Not classified (Lack of data)</td>
</tr>
<tr>
<td>Reproductive toxicity</td>
<td>Not classified (Lack of data)</td>
</tr>
<tr>
<td>STOT-single exposure</td>
<td>May cause respiratory irritation. (Lack of data)</td>
</tr>
<tr>
<td>STOT-repeated exposure</td>
<td>Not classified (Lack of data)</td>
</tr>
<tr>
<td>Aspiration hazard</td>
<td>Not classified (Lack of data)</td>
</tr>
<tr>
<td>Potential adverse human health effects and symptoms</td>
<td>Slightly irritant to skin. Slightly irritant to respiratory organs. Slightly irritant to eyes.</td>
</tr>
</tbody>
</table>

SECTION 12: Ecological information

12.1. Toxicity

<table>
<thead>
<tr>
<th>Effect</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ecology - general</td>
<td>Not classified as dangerous for the environment according to the criteria of Regulation (EC) No 1272/2008.</td>
</tr>
<tr>
<td>Ecology - air</td>
<td>Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009).</td>
</tr>
<tr>
<td>Ecology - water</td>
<td>Harmful to aquatic organisms. Mild water pollutant (surface water). May cause eutrophication.</td>
</tr>
<tr>
<td>Dangerous for the environment</td>
<td>Not classified</td>
</tr>
<tr>
<td>Chronic aquatic toxicity</td>
<td>Not classified</td>
</tr>
</tbody>
</table>

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. Results of PBT and vPvB assessment

Ferric Ammonium Citrate (1185-57-5)

PBT: not yet assessed
vPvB: not yet assessed
### 12.6. Other adverse effects

No additional information available

### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

<table>
<thead>
<tr>
<th>Waste treatment methods</th>
<th>: Dispose of contents/container in accordance with licensed collector’s sorting instructions.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product/Packaging disposal recommendations</td>
<td>: Recycle/reuse.</td>
</tr>
</tbody>
</table>

### SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

#### 14.1. UN number

| UN-No. (ADR) | : Not applicable |
| UN-No. (IMDG) | : Not applicable |
| UN-No. (IATA) | : Not applicable |
| UN-No. (ADN) | : Not applicable |
| UN-No. (RID) | : Not applicable |

#### 14.2. UN proper shipping name

| Proper Shipping Name (ADR) | : Not regulated for transport |
| Proper Shipping Name (IMDG) | : Not regulated for transport |
| Proper Shipping Name (IATA) | : Not regulated for transport |
| Proper Shipping Name (ADN) | : Not regulated for transport |
| Proper Shipping Name (RID) | : Not regulated for transport |

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

**ADR**

Transport hazard class(es) (ADR) : Not applicable

**IMDG**

Transport hazard class(es) (IMDG) : Not applicable

**IATA**

Transport hazard class(es) (IATA) : Not applicable

**ADN**

Transport hazard class(es) (ADN) : Not applicable

**RID**

Transport hazard class(es) (RID) : Not applicable

#### 14.4. Packing group

| Packing group (ADR) | : Not applicable |
| Packing group (IMDG) | : Not applicable |
| Packing group (IATA) | : Not applicable |
| Packing group (ADN) | : Not applicable |
| Packing group (RID) | : Not applicable |

#### 14.5. Environmental hazards

Dangerous for the environment : No

Marine pollutant : No

Other information : No supplementary information available

#### 14.6. Special precautions for user

**Overland transport**

Transport regulations (ADR) : Not subject

**Transport by sea**

Transport regulations (IMDG) : Not subject

**Air transport**

Transport regulations (IATA) : Not subject

**Inland waterway transport**

Transport regulations (ADN) : Not subject

**Rail transport**

Transport regulations (RID) : Not subject

#### 14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable
Ferric Ammonium Citrate
Safety Data Sheet
according to Regulation (EC) No. 453/2010

SECTION 15: Regulatory information
15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU-Regulations
No REACH Annex XVII restrictions
Ferric Ammonium Citrate is not on the REACH Candidate List
Ferric Ammonium Citrate is not on the REACH Annex XIV List

VOC content : 0 %
Directive 2012/18/EU (SEVESO III)

15.1.2. National regulations
Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on the Canadian DSL (Domestic Substances List)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on the Korean ECL (Existing Chemicals List)
Listed on INSQ (Mexican National Inventory of Chemical Substances)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. Chemical safety assessment
No chemical safety assessment has been carried out

SECTION 16: Other information

Indication of changes:
This sheet was updated (refer to the date at the top of this page).

Full text of H- and EUH-statements:

<table>
<thead>
<tr>
<th>Eye Irrit. 2</th>
<th>Serious eye damage/eye irritation, Category 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin Irrit. 2</td>
<td>Skin corrosion/irritation, Category 2</td>
</tr>
<tr>
<td>STOT SE 3</td>
<td>Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation</td>
</tr>
<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>

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.