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

1.1. Product identifier
- **Product form:** Substance
- **Substance name:** Ferric Citrate
- **EC-No.:** 219-045-4
- **CAS-No.:** 2338-05-8
- **Formula:** Fe(C₆H₅O₇) • xH₂O

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:** Nutrient; Dietary Supplement

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.
  Saint Louis, Missouri 63114
  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 Andenne - 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

- **Classification according to Regulation (EC) No. 1272/2008 [CLP]:**
  - Serious eye damage/eye irritation, Category 2 - H319
  - Full text of H statements: see section 16

- **Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]:**
  - Not classified

- **Adverse physicochemical, human health and environmental effects:**
  - No additional information available

2.2. Label elements

- **Labelling according to Regulation (EC) No. 1272/2008 [CLP]:**
  - **Hazard pictograms (CLP):**
    - GHS07
  - **Signal word (CLP):** Warning
  - **Hazard statements (CLP):**
    - H319 - Causes serious eye irritation.
  - **Precautionary statements (CLP):**
    - P264 - Wash hands, forearms and face thoroughly after handling.
    - P280 - Wear protective gloves/protective clothing/eye protection/face protection.
    - P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
    - P337+P313 - If eye irritation persists: Get medical advice/attention.

2.3. Other hazards
- **No additional information available**

SECTION 3: Composition/information on ingredients

3.1. Substances
- **Substance type:** Mono-constituent
Name | Product identifier | %
--- | --- | ---
Ferric Citrate | (CAS-No.) 2338-05-8 (EC-No.) 219-045-4 | 100

Full text of R- 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 general:**

**First-aid measures after inhalation:**
Remove person to fresh air and keep comfortable for breathing. 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. Take victim to a doctor if irritation persists. Wash skin with plenty of water.

**First-aid measures after eye contact:**
Rinse immediately with plenty of water. Remove contact lenses, if present and easy to do. Continue rinsing. Take victim to an ophthalmologist. 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.

**First-aid measures after ingestion:**
Rinse mouth with water. Immediately after ingestion: give lots of water to drink. 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. Call a poison center or a doctor if you feel unwell.

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

**Symptoms/effects after eye contact:**
Irritation of the eye tissue. Eye 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

**Hazardous decomposition products in case of fire:**
Upon combustion: CO and CO2 are formed.

### 5.3. Advice for firefighters

**Precautionary measures fire:**
Exposure to fire/heat: keep upwind. Exposure to fire/heat: have neighbourhood close doors and windows.

**Firefighting instructions:**
No specific fire-fighting instructions required.

**Protection during firefighting:**
Heat/fire exposure: compressed air/oxygen apparatus. Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

#### 6.1.1. For non-emergency personnel

**Protective equipment:**

**Emergency procedures:**
Ventilate spillage area. Mark the danger area. Prevent dust cloud formation, e.g. by wetting. Avoid contact with skin and eyes.

**Measures in case of dust release:**
In case of dust production: keep upwind. Dust production: have neighbourhood close doors and windows.

#### 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".

### 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:
- Mechanically recover the product. 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

Precautions for safe handling:
- Ensure good ventilation of the work station. Avoid raising dust. Carry operations in the open/under local exhaust/ventilation or with respiratory protection. Comply with the legal requirements. Avoid contact with skin and eyes. Wear personal protective equipment.

Hygiene measures:
- Keep container tightly closed. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions:
- Store in a clean, dry warehouse in the original unopened containers.
- KEEP SUBSTANCE AWAY FROM: heat sources.

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

Information on mixed storage:
- KEEP SUBSTANCE AWAY FROM: oxidizing agents.

Storage area:
- Store in a cool area. Store in a dry area. Store in a dark area. Meet the legal requirements.

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

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.

Hand protection:
- Gloves

Eye protection:
- Safety glasses. In case of dust production: protective goggles. Safety glasses

Skin and body protection:
- Protective clothing

Respiratory protection:
- Dust production: dust mask with filter type P1

Environmental exposure controls:
- Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state: Solid
Appearance: Orange to brown powder.
Molecular mass: 244.95 g/mol
Odour: Odourless.
Odour threshold: No data available
pH: No data available
Relative evaporation rate (butylacetate=1): No data available
Melting point: No data available
Freezing point: Not applicable
Boiling point: No data available
Ferric Citrate
Safety Data Sheet
according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

Flash point: Not applicable
Auto-ignition temperature: Not applicable
Decomposition temperature: No data available
Flammability (solid, gas): Non flammable.
Vapour pressure: No data available
Relative vapour density at 20 °C: Not applicable
Relative density: Not applicable
Solubility: Soluble in water.
Water: complete
Log Pow: No data available
Viscosity, kinematic: No data available
Viscosity, dynamic: No data available
Explosive properties: No data available
Oxidising properties: No data available
Explosive limits: Not applicable

9.2. Other information
VOC content: 0 %

SECTION 10: Stability and reactivity

10.1. Reactivity
The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability
Unstable on exposure to light.

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
Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects
Acute toxicity (oral): Not classified
Acute toxicity (dermal): Not classified
Acute toxicity (inhalation): Not classified
Causes serious eye damage: Not classified
Serious eye damage/irritation: Causes serious eye irritation.
Respiratory or skin sensitisation: Not classified
Germ cell mutagenicity: Not classified
Carcinogenicity: Not classified
Reproductive toxicity: Not classified
STOT-single exposure: Not classified
STOT-repeated exposure: Not classified
Aspiration hazard: Not classified
Potential adverse human health effects and symptoms: Causes serious eye 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).
Ecology - water: Severe water pollutant (surface water). No data available on ecotoxicity.
Dangerous for the environment: Not classified
Chronic aquatic toxicity: Not classified
12.2. Persistence and degradability
Ferric Citrate (2338-05-8)
Persistence and degradability: Biodegradability in water: no data available.

12.3. Bioaccumulative potential
Ferric Citrate (2338-05-8)
Bioaccumulative potential: No bioaccumulation data available.

12.4. Mobility in soil
No additional information available

12.5. Results of PBT and vPvB assessment
No additional information available

12.6. Other adverse effects
No additional information available

SECTION 13: Disposal considerations
13.1. Waste treatment methods
Regional legislation (waste): LWCA (the Netherlands): KGA category 05.
Waste treatment methods: Dispose of contents/container in accordance with licensed collector’s sorting instructions.
Product/Packaging disposal recommendations: Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Recycle/reuse. Remove to an authorized incinerator equipped with an afterburner and a flue gas scrubber with energy recovery. Dissolve or mix with a combustible solvent.

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 applicable
Proper Shipping Name (IMDG): Not applicable
Proper Shipping Name (IATA): Not applicable
Proper Shipping Name (ADN): Not applicable
Proper Shipping Name (RID): Not applicable
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

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Marine pollutant</td>
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<tr>
<td>Other information</td>
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14.6. Special precautions for user

<table>
<thead>
<tr>
<th>Transport by sea</th>
<th>Not applicable</th>
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<tbody>
<tr>
<td>Air transport</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Inland waterway transport</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Rail transport</td>
<td>Not applicable</td>
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</tbody>
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14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

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 Citrate is not on the REACH Candidate List
Ferric 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 United States TSCA (Toxic Substances Control Act) inventory
Listed on the Canadian DSL (Domestic Substances List)

15.2. Chemical safety assessment

No additional information available

SECTION 16: Other information

<table>
<thead>
<tr>
<th>Full text of R-, H- and EUH-statements:</th>
</tr>
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<tbody>
<tr>
<td>Eye Irrit. 2</td>
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<tr>
<td>H319</td>
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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.