Iron Sulphate 20%

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

1. Product identifier
   - Product form: Substance
   - Trade name: Iron Sulphate 20%
   - Chemical name: Iron (II) Sulfate heptahydrate
   - EC index no: 026-003-00-7
   - EC no: 231-753-5
   - CAS No.: 7782-63-0
   - Formula: FeSO4.7H2O
   - Synonyms: copperas, green / copperas, heptahydrate / durettier, heptahydrate / duroferon, heptahydrate / exsiccated ferrous sulfate / exsiccated ferrous sulphate / feosol / feospaan / fer in sol / fero gradamet / ferralyn / fer theron / ferrosulfate, heptahydrate / ferrous sulfate, heptahydrate / fesofer / fesoyme / green vitrol / haemofort / iron sulfate, heptahydrate / heptahydrate / iron vitriol, heptahydrate / iron(ii)sulfate-7-hydrate / ironate / ironmonoferousulfate, heptahydrate / ironous sulfate, heptahydrate / irosan / irosul / malanterite / malanterite, natural / mol-iron / presfersul / slow-Fe / sulfate, sugar / sulfurous / sulfuric acid iron salt, heptahydrate / sulfuric acid iron(ii)salt, heptahydrate / sulfuric acid, iron(2+) salt (1:1), heptahydrate / vitriol, green, heptahydrate

1.2. Relevant identified uses of the substance or mixture and uses advised against
1.2.1. Relevant identified uses
   - Main use category: Industrial use
     - Professional use
   - Use of the substance/mixture: Fertilizer: raw material.
     - Animal feeding stuff: supplement.
     - Food industry: supplement
   - Function or use category: Fertilisers

1.2.2. Uses advised against
   - No additional information available

1.3. Details of the supplier of the safety data sheet
   - Van Iperen International BV
   - Smidsweg 24
   - 3273 LK Westmaas - Nederland
   - T +31 (0) 186 578 888 - F +31 (0) 186 573 452
   - info@iperen.com - www.vaniperen.com

1.4. Emergency telephone number

<table>
<thead>
<tr>
<th>Country</th>
<th>Official advisory body</th>
<th>Address</th>
<th>Emergency number</th>
</tr>
</thead>
<tbody>
<tr>
<td>United Kingdom</td>
<td>Guy’s &amp; St Thomas’ Poisons Unit</td>
<td>Avonley Road SE14 SER London</td>
<td>0870 243 2241</td>
</tr>
</tbody>
</table>

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]
   - Acute Tox. 4 (Oral) H302
   - Skin Irrit. 2 H315
   - Eye Irrit. 2 H319

Classification according to Directive 67/548/EEC or 1999/45/EC
   - Xn; R22
   - Xi; R36/38

Adverse physicochemical, human health and environmental effects
   - No additional information available
SECTION 2: Hazards identification (continued)

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP):

CLP Signal word: Warning
Hazard statements (CLP):
- H302 - Harmful if swallowed
- H315 - Causes skin irritation
- H319 - Causes serious eye irritation

Precautionary statements (CLP):
- P280 - Wear protective gloves, protective clothing, eye protection
- P301+P312 - IF SWALLOWED: call a doctor if you feel unwell.
- P302+P352 - IF ON SKIN: Wash with plenty of soap and water
- P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
- P332+P313 - If skin irritation occurs: Get medical advice/attention
- P337+P313 - If eye irritation persists: Get medical advice/attention

2.3. Other hazards

This substance/mixture does not meet the PBT criteria of REACH, annex XIII.
This substance/mixture does not meet the vPvB criteria of REACH, annex XIII.

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>
<th>Classification according to Directive 67/548/EEC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iron(II)sulfate</td>
<td>(CAS No.) 7782-63-0</td>
<td>99.5</td>
<td>Xn; R22</td>
</tr>
<tr>
<td></td>
<td>(EC no) 231-753-5</td>
<td></td>
<td>Xi; R36/38</td>
</tr>
<tr>
<td></td>
<td>(EC index no) 026-003-00-7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Name | Product identifier         | %   | Classification according to Regulation (EC) No. 1272/2008 [CLP] |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Iron(II)sulfate</td>
<td>(CAS No.) 7782-63-0</td>
<td>99.5</td>
<td>Acute Tox. 4 (Oral), H302</td>
</tr>
<tr>
<td></td>
<td>(EC no) 231-753-5</td>
<td></td>
<td>Skin Irrit. 2, H315</td>
</tr>
<tr>
<td></td>
<td>(EC index no) 026-003-00-7</td>
<td></td>
<td>Eye Irrit. 2, H319</td>
</tr>
</tbody>
</table>

Full text of R-, H- and EUH-phrases: see section 16

3.2. Mixture

Not applicable
SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general:
- Check the vital functions.
- Unconscious: maintain adequate airway and respiration.
- Respiratory arrest: artificial respiration or oxygen.
- Cardiac arrest: perform resuscitation.
- Victim conscious with laboured breathing: half-seated.
- Victim in shock: on his back with legs slightly raised.
- Vomiting: prevent asphyxia/aspiration pneumonia.
- Prevent cooling by covering the victim (no warming up).
- Keep watching the victim.
- Give psychological aid.
- Keep the victim calm, avoid physical strain.
- Depending on the victim's condition: doctor/hospital

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

First-aid measures after skin contact:
- Wash immediately with lots of water. Soap may be used.
- Take victim to a doctor if irritation persists.

First-aid measures after eye contact:
- Rinse immediately with plenty of water. Do not apply neutralizing agents.
- Take victim to an ophthalmologist if irritation persists.

First-aid measures after ingestion:
- Rinse mouth with water. Immediately after ingestion: give lots of water to drink.
- Victim is fully conscious: immediately induce vomiting. Induce vomiting by giving a 0.9 % saline solution. Call Poison Information Centre. 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/injuries after inhalation:
- After inhalation of dust: Dry/sore throat. Irritation of the respiratory tract. Irritation of the nasal mucous membranes.

Symptoms/injuries after skin contact:
- Red skin. Itching. Tingling/irritation of the skin.

Symptoms/injuries after eye contact:
- Irritation of the eye tissue.

Symptoms/injuries after ingestion:

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

Treat symptomatically. Follow the advices in chapter 4.1.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:
- Extinguishing media for surrounding fires: All extinguishing media allowed.

5.2. Special hazards arising from the substance or mixture

Fire hazard:
- Direct fire hazard: Non combustible.

Explosion hazard:
- No direct explosion hazard.

Reactivity:
- On burning: release of toxic and corrosive gases/vapours (sulphur oxides). Oxidizes slowly in moist air. Reacts with (some) bases.

5.3. Advice for firefighters

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

Firefighting instructions:
- Dilute toxic gases with water spray.

Protection during firefighting:
- Heat/fire exposure: compressed air/oxygen apparatus.
SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures: Avoid all eyes and skin contact and do not breathe vapour and mist.

6.1.1. For non-emergency personnel

Protective equipment: Wear protective gloves/protective clothing/eye protection as advised in section 8.


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: Wear protective gloves/protective clothing/eye protection as advised in section 8.

6.2. Environmental precautions

Prevent soil and water pollution. Prevent spreading in sewers.

6.3. Methods and material for containment and cleaning up

For containment: Stop leak if safe to do so. Dam up the solid spill.

Methods for cleaning up: Take up mechanically, placing in appropriate containers for recovery or disposal.

Wash clothing and equipment after handling.

Other information: Dispose the product, depending on the degree and type of contamination, either as fertilizer or in an authorized waste disposal site.

6.4. Reference to other sections

See section 1 for emergency contact information.

See section 8 for information on appropriate personal protective equipment.

See section 13 for additional waste treatment information

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling: Avoid contact with skin and eyes. Use sufficient ventilation. Avoid breathing dust. Avoid raising dust. In case of inadequate ventilation wear respiratory protection.

Hygiene measures: Always wash hands after handling the product. Do not eat, drink or smoke during use.

If on skin, take off contaminated clothing. Keep away from food, drink and animal feedingstuffs.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions: Keep preferably in the original container.

Heat-ignition: Keep substance away from: heat sources.

Prohibitions on mixed storage: Keep substance away from: oxidizing agents. (strong) bases. water/moisture.

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

Keep out of direct sunlight.

Special rules on packaging: Special or additional requirements: watertight, dry, correctly labelled. Meet the legal requirements. Secure fragile packagings in solid containers.

Packaging materials: Suitable material: paper with plastic inner lining, plastics, polyethylene, polypropylene, glass.

7.3. Specific end use(s)

Fertilizers.
**SECTION 8: Exposure controls/personal protection**

8.1. Control parameters

<table>
<thead>
<tr>
<th>Iron Sulphate 20% (7782-63-0)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>United Kingdom WEL TWA (mg/m³)</td>
<td>1 mg/m³ (Fe)</td>
</tr>
<tr>
<td>United Kingdom WEL STEL (mg/m³)</td>
<td>2 mg/m³ (Fe)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Iron Sulphate 20% (7782-63-0)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>DNEL/DMEL (Workers)</td>
<td></td>
</tr>
<tr>
<td>Acute - systemic effects, dermal</td>
<td>0,57 mg/kg bodyweight</td>
</tr>
<tr>
<td>Acute - systemic effects, inhalation</td>
<td>2,01 mg/m³</td>
</tr>
<tr>
<td>Long-term - systemic effects, dermal</td>
<td>0,57 mg/kg bodyweight/day</td>
</tr>
<tr>
<td>Long-term - systemic effects, inhalation</td>
<td>2,01 mg/m³</td>
</tr>
</tbody>
</table>

8.2. Exposure controls

**Appropriate engineering controls**

- Provide appropriate exhaust ventilation at places of dust forming.
- Care for eyewashstations and security showers at the workplace.

**Personal protective equipment**

- **Hand protection**
  - Gloves.
- **Material selection gloves**
  - Good resistance gives: butyl rubber, PVC, chloroprene rubber, natural rubber.
  - Non suitable materials are leather gloves. Take advice to your gloves’ supplier.
  - Replace damaged gloves
- **Eye protection**
  - Safety glasses. In case of dust production: protective goggles.
- **Skin and body protection**
  - Wear suitable protective clothing.
- **Respiratory protection**
  - Dust production: dust mask with filter type P2.

**SECTION 9: Physical and chemical properties**

9.1. Information on basic physical and chemical properties

- Physical state: Liquid
- Appearance: Crystalline solid. Grains.
- Molecular mass: 278,05 g/mol
- Odour: Odourless.
- pH: 3,0 (5,0 %)
- Melting point: 64 °C
- Explosive limits: No data available
- Vapour pressure: < 0,1 hPa
- Relative density: 1,9 1,9
- Density: 1898 kg/m³
- Solubility: Soluble in water. Soluble in methanol. Soluble in glycerol.
  - Water: 42 g/100ml
- Log Pow: No data available
- Decomposition temperature: > 400 °C
- Explosive properties: Not applicable.
- Oxidising properties: not oxidising.

9.2. Other information

- VOC content: Not applicable
- Other properties: Substance has acid reaction.
Iron Sulphate 20%

SECTION 10: Stability and reactivity

10.1. Reactivity
On burning: release of toxic and corrosive gases/vapours (sulphur oxides). Oxidizes slowly in moist air. Reacts with (some) bases.

10.2. Chemical stability
Unstable on exposure to air.

10.3. Possibility of hazardous reactions
Aqueous solution is an acid.

10.4. Conditions to avoid
Avoid high temperatures.

10.5. Incompatible materials
No additional information available

10.6. Hazardous decomposition products
On heating/burning: release of toxic and corrosive gases/vapours (sulphur oxides).

SECTION 11: Toxicological information

11.1. Information on toxicological effects

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
<td>1480 mg/kg (Rat)</td>
</tr>
<tr>
<td>ATE (oral)</td>
<td>1480 mg/kg</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation: Causes skin irritation.

Serious eye damage/irritation: Causes serious eye irritation.

Respiratory or skin sensitisation: Not classified (Based on available data, the classification criteria are not met)

Germ cell mutagenicity: Not classified (Based on available data, the classification criteria are not met)

Carcinogenicity: Not classified (Based on available data, the classification criteria are not met)

Reproductive toxicity: Not classified (Based on available data, the classification criteria are not met)

Specific target organ toxicity (single exposure): Not classified (Based on available data, the classification criteria are not met)

Specific target organ toxicity (repeated exposure): Not classified (Based on available data, the classification criteria are not met)

Aspiration hazard: Not classified (Based on available data, the classification criteria are not met)
SECTION 12: Ecological information

12.1. Toxicity

Ecology - general: Classification concerning the environment: not applicable.

Ecology - water: Mild water pollutant (surface water). Maximum concentration in drinking water: 0.200 mg/l (iron) (Directive 98/83/EC); 250 mg/l (sulfate) (Directive 98/83/EC), Slightly harmful to fishes (LC50(96h) 100-1000 mg/l). Slightly harmful to invertebrates (Daphnia) (EC50 (48h): 100 - 1000 mg/l). Slightly harmful to bacteria (EC50: 100 - 1000 mg/l). pH shift. Not harmful to activated sludge.

Iron Sulphate 20% (7782-63-0)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50 fishes 1</td>
<td>925 mg/l (96 h; Poecilia reticulata; Static system)</td>
</tr>
<tr>
<td>EC50 Daphnia 1</td>
<td>7.2 mg/l (48 h; Daphnia magna; METAL ION)</td>
</tr>
<tr>
<td>LC50 fish 2</td>
<td>&gt; 200 mg/l (48 h; Leuciscus idus; Static system)</td>
</tr>
<tr>
<td>EC50 Daphnia 2</td>
<td>152 mg/l (48 h; Daphnia magna; ANHYDROUS FORM)</td>
</tr>
<tr>
<td>Threshold limit other aquatic organisms 1</td>
<td>105 mg/l (Gammarus pulex; ANHYDROUS FORM)</td>
</tr>
<tr>
<td>Threshold limit other aquatic organisms 2</td>
<td>152 mg/l (Daphnia magna; ANHYDROUS FORM)</td>
</tr>
</tbody>
</table>

12.2. Persistence and degradability

Persistence and degradability: In accordance with column 2 of REACH Annex VII, the ready biodegradability test does not need to be conducted as the substance is inorganic.

Iron Sulphate 20% (7782-63-0)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bioaccumulative potential</td>
<td>Not bioaccumulative.</td>
</tr>
</tbody>
</table>

12.3. Bioaccumulative potential

Iron Sulphate 20% (7782-63-0)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ecology - soil</td>
<td>Soluble in water.</td>
</tr>
</tbody>
</table>

12.4. Mobility in soil

Iron Sulphate 20% (7782-63-0)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobility in soil</td>
<td>Soluble in water.</td>
</tr>
</tbody>
</table>

12.5. Results of PBT and vPvB assessment

Iron Sulphate 20% (7782-63-0)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>This substance/mixture does not meet the PBT criteria of REACH, annex XIII.</td>
<td></td>
</tr>
<tr>
<td>This substance/mixture does not meet the vPvB criteria of REACH, annex XIII.</td>
<td></td>
</tr>
</tbody>
</table>

12.6. Other adverse effects

Other information: Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

EURLW code: 15 01 10* - packaging containing residues of or contaminated by dangerous substances

Regional legislation (waste): Disposal must be done according to official regulations.

Waste treatment methods: Dispose the product, depending on the degree and type of contamination, either as fertilizer or in an authorized waste disposal site.

Waste disposal recommendations: Do not discharge into the sewer. Remove waste in accordance with local and/or national regulations. Care should be taken when handling emptied containers that have not been cleaned or rinsed out.

Additional information: The user's attention is drawn to the possible existence of specific European, national or local regulations regarding disposal. The generation of waste should be avoided or minimized wherever possible.
**Iron Sulphate 20%**

### SECTION 14: Transport information

In accordance with ADR / RID / ADNR / IMDG / ICAO / IATA

14.1. **UN number**
No dangerous good in sense of transport regulations.

14.2. **UN proper shipping name**
Not applicable

14.3. **Transport hazard class(es)**
Not applicable

14.4. **Packing group**
Not applicable

14.5. **Environmental hazards**
Other information : No supplementary information available.

14.6. **Special precautions for user**

14.6.1. **Overland transport**
- Transport regulations (ADR) : Not subject
- Transport regulations (RID) : Not subject
- State during transport (ADR-RID) : Rail and road transport: not subject to ADR-RID

14.6.2. **Transport by sea**
- Transport regulations (IMDG) : Not subject

14.6.3. **Air transport**
- Transport regulations (ICAO) : Not subject

14.7. **Transport in bulk according to Annex II of MARPOL 73/78 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
- VOC content : Not applicable

15.1.2. **National regulations**
- No additional information available

15.2. **Chemical safety assessment**
A chemical safety assessment has been carried out for the substance or the mixture by the supplier
**Iron Sulphate 20%**

## SECTION 16: Other information

<table>
<thead>
<tr>
<th>Version</th>
<th>3.0</th>
</tr>
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<tbody>
<tr>
<td>Revision date</td>
<td>05-04-2013</td>
</tr>
<tr>
<td>Date of issue</td>
<td>03-02-2009</td>
</tr>
<tr>
<td>Supersedes</td>
<td>14-10-2010</td>
</tr>
<tr>
<td>Indication of changes</td>
<td>This safety data sheet is fully revised according to the CLP and REACH regulations.</td>
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<tr>
<td>Data sources</td>
<td>BIG-database</td>
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<tr>
<td></td>
<td>ECHA Website: Information on Registered Substances</td>
</tr>
<tr>
<td></td>
<td>Information from suppliers.</td>
</tr>
<tr>
<td>Abbreviations and acronyms</td>
<td>DNEL = Derivative No Effect Level</td>
</tr>
<tr>
<td></td>
<td>CLP = Classification, labelling and packaging</td>
</tr>
<tr>
<td></td>
<td>PNEC = Predicted No Effect Concentration</td>
</tr>
<tr>
<td></td>
<td>REACH = Registration, evaluation and autorisation of chemicals.</td>
</tr>
<tr>
<td>Training advice</td>
<td>Before using/handling the product one must read carefully the MSDS.</td>
</tr>
</tbody>
</table>

### Full text of R-, H- and EUH- phrases:

<table>
<thead>
<tr>
<th>Acute Tox. 4 (Oral)</th>
<th>Acute toxicity (oral) Category 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eye Irrit. 2</td>
<td>Serious eye damage/eye irritation Category 2</td>
</tr>
<tr>
<td>Skin Irrit. 2</td>
<td>Skin corrosion/irritation Category 2</td>
</tr>
<tr>
<td>H302</td>
<td>Harmful if swallowed</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>R22</td>
<td>Harmful if swallowed.</td>
</tr>
<tr>
<td>R36/38</td>
<td>Irritating to eyes and skin.</td>
</tr>
<tr>
<td>Xi</td>
<td>Irritant</td>
</tr>
<tr>
<td>Xn</td>
<td>Harmful</td>
</tr>
</tbody>
</table>

### Company disclaimer

The information provided in this safety data sheet is correct to the best of our knowledge, information, and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal, and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any proceed, unless specified in the text.