4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Flammable properties
Flash point: no data available
Ignition temperature: no data available

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for fire-fighters
Wear self-contained breathing apparatus for fire fighting if necessary.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Use personal protective equipment. Avoid dust formation. Avoid breathing dust. Ensure adequate ventilation.

Environmental precautions
Do not let product enter drains.

Methods for cleaning up
Pick up and arrange disposal without creating dust. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.

Storage
Keep container tightly closed in a dry and well-ventilated place. Hygroscopic. Store under inert gas. Air sensitive.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control parameters</th>
<th>Update</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ferrous chloride tetrahydrate</td>
<td>13478-10-9</td>
<td>TWA 1 mg/m³</td>
<td>1 mg/m³</td>
<td>1689-03-01</td>
<td>US Department of Labor - Occupational Safety and Health</td>
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<td>TWA</td>
<td>1 mg/m³</td>
<td>1994-09-01</td>
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</tbody>
</table>

### Personal protective equipment

**Respiratory protection**

Where risk assessment shows air-purifying respirators are appropriate use a dust mask type N95 (US) or type P1 (EN 143) respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Hand protection**

Handle with gloves.

**Eye protection**

Safety glasses

**Skin and body protection**

Choose body protection according to the amount and concentration of the dangerous substance at the work place.

**Hygiene measures**

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

#### Appearance

- **Form**: Fine crystals and fragments
- **Colour**: Light green

#### Safety data

- **pH**: 2.5 at 100 g/l at 20 °C (68 °F)
- **Melting point**: 105 - 110 °C (221 - 230 °F)
- **Boiling point**: No data available
- **Flash point**: No data available
- **Ignition temperature**: No data available
- **Lower explosion limit**: No data available
- **Upper explosion limit**: No data available
- **Vapour pressure**: 13.3 hPa (100 mmHg) at 693 °C (1,279 °F)
- **Density**: 1.93 g/cm³
- **Water solubility**: No data available

### 10. STABILITY AND REACTIVITY

#### Storage stability

Stable under recommended storage conditions.

#### Conditions to avoid

Exposure to moisture.

#### Materials to avoid

A mixture of this product and sodium or potassium will explode on impact., Strong bases, Strong acids, Ethylene oxide, Strong oxidizing agents

#### Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Hydrogen chloride gas, Iron oxides

### 11. TOXICOLOGICAL INFORMATION

#### Acute toxicity

LD50 Intraperitoneal - mouse - 92.5 mg/kg

#### Irritation and corrosion

No data available

#### Sensitisation

No data available

#### Chronic exposure

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

#### Signs and Symptoms of Exposure

Overdose of iron compounds may have a corrosive effect on the gastrointestinal mucosa and be followed by necrosis, perforation, and stricture formation. Several hours may elapse before symptoms that can include epigastric pain, diarrhea, vomiting, nausea, and hematemesis occur. After apparent recovery a person may experience metabolic acidosis, convulsions, and coma hours or days later. Further complications may develop leading to acute liver necrosis that can result in death due to hepatic coma. Symptoms may be delayed. Effects due to ingestion may include: Epigastric pain, Diarrhoea, Vomiting, Nausea, Hematemesis

#### Potential Health Effects

- **Inhalation**: May be harmful if inhaled. Causes respiratory tract irritation.
- **Skin**: May be harmful if absorbed through skin. Causes skin irritation.
- **Eyes**: Causes eye irritation.
- **Ingestion**: Harmful if swallowed.

#### Additional Information

- **Partition coefficient**: log Pow: -1.5
- **n-octanol/water**
12. ECOLOGICAL INFORMATION

Elimination information (persistence and degradability)
no data available

Ecotoxicity effects
no data available

Further information on ecology
no data available

13. DISPOSAL CONSIDERATIONS

Product
Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN-Number: 3290 Class: 8 Packing group: III
Proper shipping name: Corrosive solid, acidic, inorganic, n.o.s. (Ferrous chloride tetrahydrate)
Marine pollutant: No Poison Inhalation Hazard: No

IMDG
UN-Number: 3290 Class: 8 Packing group: III
EMS-No: F-A, S-B
Proper shipping name: CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S. (Ferrous chloride tetrahydrate)
Marine pollutant: No

IATA
UN-Number: 3290 Class: 8 Packing group: III
Proper shipping name: Corrosive solid, acidic, inorganic n.o.s. (Ferrous chloride tetrahydrate)

15. REGULATORY INFORMATION

OSHA Hazards
Harmful by ingestion, irritant

DSL Status
All components of this product are on the Canadian DSL list.

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
Acute Health Hazard

Massachusetts Right To Know Components

Ferrous chloride tetrahydrate 13478-10-9 1991-07-01
Pennsylvania Right To Know Components
Ferrous chloride tetrahydrate CAS-No. 13478-10-9 Revision Date 1991-07-01
New Jersey Right To Know Components
Ferrous chloride tetrahydrate CAS-No. 13478-10-9 1991-07-01
California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth, or any other reproductive defects.

16. OTHER INFORMATION

Further information
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