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

1.1 Product identifiers
   - Product name: Iron(III) oxide
   - Product Number: 529311
   - Brand: Aldrich
   - REACH No.: 01-2119457614-35-XXXX
   - CAS-No.: 1309-37-1

1.2 Relevant identified uses of the substance or mixture and uses advised against
   - Identified uses: Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet
   - Company: Sigma-Aldrich Inc.
     3050 SPRUCE ST
     ST. LOUIS MO 63103
     UNITED STATES
   - Telephone: +1 314 771-5765
   - Fax: +1 800 325-5052

1.4 Emergency telephone
   - Emergency Phone #: 800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
   Not a hazardous substance or mixture according to Regulation (EC) No 1272/2008.

2.2 Label elements
   Not a hazardous substance or mixture according to Regulation (EC) No 1272/2008.

2.3 Other hazards
   This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.
SECTION 3: Composition/information on ingredients

3.1 Substances
Synonyms: Ferric oxide

Formula: \( \text{Fe}_2\text{O}_3 \)
Molecular weight: 159.69 g/mol
CAS-No.: 1309-37-1
EC-No.: 215-168-2

No components need to be disclosed according to the applicable regulations.

SECTION 4: First aid measures

4.1 Description of first-aid measures

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

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

In case of eye contact
Flush eyes with water as a precaution.

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

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

SECTION 5: Firefighting measures

5.1 Extinguishing media

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

5.2 Special hazards arising from the substance or mixture
Iron oxides

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Avoid dust formation. Avoid breathing vapors, mist or gas.
For personal protection see section 8.
6.2 **Environmental precautions**
No special environmental precautions required.

6.3 **Methods and materials for containment and cleaning up**
Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 **Reference to other sections**
For disposal see section 13.

### SECTION 7: Handling and storage

#### 7.1 Precautions for safe handling

**Advice on protection against fire and explosion**
Provide appropriate exhaust ventilation at places where dust is formed.

**Hygiene measures**
General industrial hygiene practice.
For precautions see section 2.2.

#### 7.2 Conditions for safe storage, including any incompatibilities

**Storage conditions**
Keep container tightly closed in a dry and well-ventilated place. Store in cool place.

#### 7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

### SECTION 8: Exposure controls/personal protection

#### 8.1 Control parameters

**Ingredients with workplace control parameters**

#### 8.2 Exposure controls

**Personal protective equipment**

**Eye/face protection**
Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin protection**
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove’s outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it.

- **Full contact**
  - Material: Nitrile rubber
  - Minimum layer thickness: 0,11 mm
  - Break through time: 480 min
  - Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

- **Splash contact**
  - Material: Nitrile rubber
Minimum layer thickness: 0,11 mm
Break through time: 480 min
Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the EC approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

**Body Protection**
Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Respiratory protection**
Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Control of environmental exposure**
No special environmental precautions required.

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**SECTION 9: Physical and chemical properties**

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

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Appearance</td>
<td>Form: powder</td>
</tr>
<tr>
<td>b) Odor</td>
<td>No data available</td>
</tr>
<tr>
<td>c) Odor Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>d) pH</td>
<td>No data available</td>
</tr>
<tr>
<td>e) Melting point/freezing point</td>
<td>Melting point/range: 1.538 °C</td>
</tr>
<tr>
<td>f) Initial boiling point and boiling range</td>
<td>No data available</td>
</tr>
<tr>
<td>g) Flash point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>h) Evaporation rate</td>
<td>No data available</td>
</tr>
<tr>
<td>i) Flammability (solid, gas)</td>
<td>No data available</td>
</tr>
<tr>
<td>j) Upper/lower flammability or explosive limits</td>
<td>No data available</td>
</tr>
<tr>
<td>k) Vapor pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>l) Vapor density</td>
<td>No data available</td>
</tr>
<tr>
<td>m) Relative density</td>
<td>No data available</td>
</tr>
</tbody>
</table>
n) Water solubility: insoluble
o) Partition coefficient: No data available
p) Autoignition temperature: No data available
q) Decomposition temperature: No data available
r) Viscosity: No data available
s) Explosive properties: No data available
t) Oxidizing properties: No data available

9.2 Other safety information
No data available

SECTION 10: Stability and reactivity

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
No data available

10.5 Incompatible materials
Chloroformates, Peroxides, Strong acids, Strong oxidizing agents

10.6 Hazardous decomposition products
In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - male and female - > 5,000 mg/kg
(EC Directive 92/69/EEC B.1 Acute Toxicity (Oral))
Remarks: (ECHA)
LC50 Inhalation - Rat - male and female - 4 h - > 5,05 mg/l
(OECD Test Guideline 403)

Skin corrosion/irritation
Skin - Rabbit
Result: No skin irritation - 4 h
(OECD Test Guideline 404)

**Serious eye damage/eye irritation**
Eyes - Rabbit
Result: No eye irritation
(OECD Test Guideline 405)

**Respiratory or skin sensitization**
Maurer optimisation test - Guinea pig
Result: negative
Remarks: (ECHA)

**Germ cell mutagenicity**
No data available

Test Type: Ames test
Test system: S. typhimurium
Metabolic activation: with and without metabolic activation
Result: negative
Remarks: (ECHA)

Test Type: in vitro test
Test system: Chinese hamster fibroblasts
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: negative

Test Type: comet assay
Species: Rat
Cell type: Bone marrow
Application Route: Oral
Result: negative
Remarks: (ECHA)

**Carcinogenicity**
No data available

**Reproductive toxicity**
No data available

**Specific target organ toxicity - single exposure**
No data available

**Specific target organ toxicity - repeated exposure**
No data available

**Aspiration hazard**
No data available

11.2 Additional Information
RTECS: N07400000
Long term inhalation exposure to iron (oxide fume or dust) can cause siderosis. Siderosis is considered to be a benign pneumoconiosis and does not normally cause significant physiologic impairment. Siderosis can be observed on x-rays with the lungs having a mottled appearance. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

After uptake of large quantities:

- CNS disorders
- shock

Other information

Inhalation of the dusts should be avoided as even inert dusts may impair respiratory organ functions.

Handle in accordance with good industrial hygiene and safety practice.

SECTION 12: Ecological information

12.1 Toxicity
No data available

- Toxicity to daphnia and other aquatic invertebrates
  static test EC50 - Daphnia magna (Water flea) - > 100 mg/l - 48 h (OECD Test Guideline 202)
  Remarks: (ECHA)

- Toxicity to bacteria
  static test EC50 - activated sludge - > 10.000 mg/l - 3 h (ISO 8192)

12.2 Persistence and degradability
The methods for determining the biological degradability are not applicable to inorganic substances.

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Other adverse effects
No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods
Product
Offer surplus and non-recyclable solutions to a licensed disposal company.
Contaminated packaging
Dispose of as unused product.

SECTION 14: Transport information

14.1 UN number
ADR/RID: -  IMDG: -  IATA: -

14.2 UN proper shipping name
ADR/RID: Not dangerous goods
IMDG: Not dangerous goods
IATA: Not dangerous goods

14.3 Transport hazard class(es)
ADR/RID: -  IMDG: -  IATA: -

14.4 Packaging group
ADR/RID: -  IMDG: -  IATA: -

14.5 Environmental hazards
ADR/RID: no  IMDG Marine pollutant: no  IATA: no

14.6 Special precautions for user
Further information
Not classified as dangerous in the meaning of transport regulations.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

National legislation

15.2 Chemical Safety Assessment
For this product a chemical safety assessment was not carried out

SECTION 16: Other information

Further information
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