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

1.1. Product identifier

- **Product form**: Substance
- **Physical state**: Solid
- **Substance name**: GELEST RED IRON OXIDE TC
- **Product code**: RIA-TCA
- **Synonyms**: C.I. PIGMENT RED 101, N-OCTYLTRIETHOXSILANE
- **Other means of identification**: INCI NAME: IRON OXIDES, TRIETHOXYCAPRYLYLSILANE

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**: Pigment

1.2.2. Uses advised against

- No additional information available

1.3. Details of the supplier of the safety data sheet

**GELEST, INC.**
11 East Steel Road
Morrisville, PA 19067
USA
T 215-547-1015 - F 215-547-2484 - (M-F): 8:00 AM - 5:30 PM EST
[info@gelest.com](mailto:info@gelest.com) - [www.gelest.com](http://www.gelest.com)

**GELEST INC.**
Fritz-Klatte-Strasse 8
65933 Frankfurt
Germany
T +49 (0) 69 3535106-500 - F +49 (0) 69 3535106-501 - (M-F): 8:00 AM - 4:00 PM
[info@gelestdc.com](mailto:info@gelestdc.com) - [www.gelestdc.com](http://www.gelestdc.com)

1.4. Emergency telephone number

- **Emergency number**: CHEMTREC: 1-800-424-9300 (USA); +1 703-527-3887 (International)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

- **EUH-statements**: EUH210 - Safety data sheet available on request.

SECTION 3: Composition/information on ingredients

3.1. Substances

- **Substance type**: Multi-constituent
- **Name**: GELEST RED IRON OXIDE TC
- **CAS-No.**: 1309-37-1 (&) 2943-75-1
- **EC-No.**: 215-168-2 (&) 220-941-2
Name | Product identifier | % | Classification according to Regulation (EC) No. 1272/2008 [CLP]
--- | --- | --- | ---
Iron oxide (Fe₂O₃) | (CAS-No.) 1309-37-1 (EC-No.) 215-168-2 | 98 - 99 | Not classified
Triethoxycaprylsilane | (CAS-No.) 2943-75-1 (EC-No.) 220-941-2 | 1 - 2 | Skin Irrit. 2, H315

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**
Remove contaminated clothing and shoes. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). If possible show this sheet; if not available show packaging or label.

**First-aid measures after inhalation**
Remove person to fresh air and keep comfortable for breathing. If you feel unwell, seek medical advice.

**First-aid measures after skin contact**
Wash with plenty of water/….

**First-aid measures after eye contact**
Immediately flush eyes thoroughly with water for at least 15 minutes. Get medical advice/attention.

**First-aid measures after ingestion**
Never give anything by mouth to an unconscious person. Get medical advice/attention.

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

**Symptoms/effects after inhalation**
Inhalation of dust or particulates may irritate the respiratory tract. Overexposure may cause: Cough.

**Symptoms/effects after skin contact**
No significant signs or symptoms indicative of any adverse health hazard are expected to occur as a result of skin exposure.

**Symptoms/effects after eye contact**
May cause eye irritation.

**Symptoms/effects after ingestion**
No information available.

**Chronic symptoms**
Prolonged inhalation of iron oxide dust is known to produce a condition known as siderosis, a benign pneumoconiosis.

4.3. Indication of any immediate medical attention and special treatment needed
No additional information available

**SECTION 5: Firefighting measures**

5.1. Extinguishing media
Suitable extinguishing media: Non-combustible. Use an extinguishing agent suitable for the surrounding fire.

5.2. Special hazards arising from the substance or mixture
No additional information available

5.3. Advice for firefighters

**Firefighting instructions**
Exercise caution when fighting any chemical fire. Use water spray or fog for cooling exposed containers.

**Protection during firefighting**
Do not enter fire area without proper protective equipment, including respiratory protection.

**SECTION 6: Accidental release measures**

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel
Emergency procedures: Evacuate unnecessary personnel.

6.1.2. For emergency responders
Protective equipment: Equip cleanup crew with proper protection.

6.2. Environmental precautions
Prevent entry to sewers and public waters.

6.3. Methods and material for containment and cleaning up

**Methods for cleaning up**
Minimise generation of dust. Use any suitable mechanical means (vacuum, sweeping etc.). Provide ventilation system and use necessary personal protective equipment as described in "8. EXPOSURE CONTROLS AND PERSONAL PROTECTION". Keep in suitable, closed containers for disposal.
6.4. Reference to other sections
See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Precautions for safe handling: Provide local exhaust or general room ventilation to minimize exposure to dust. Avoid contact with skin and eyes. Do not breathe dust.
Hygiene measures: Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities
Storage conditions: Keep container tightly closed. Keep in a clean and dry area in original unopened containers.
Storage area: Store away from heat.

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

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

<table>
<thead>
<tr>
<th>Iron oxide (Fe₂O₃) (1309-37-1)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>MAK (mg/m³)</td>
</tr>
<tr>
<td></td>
<td>5 mg/m³ (respirable fraction)</td>
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<tr>
<td></td>
<td>10 mg/m³ (inhalable fraction)</td>
</tr>
<tr>
<td>Austria</td>
<td>MAK Short time value (mg/m³)</td>
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<tr>
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<td>VLA-ED (mg/m³)</td>
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<td>3 mg/m³ (respirable dust)</td>
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<td>WEL TWA (mg/m³)</td>
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<td>Grenseverdier (Kortitsverd) (mg/m3)</td>
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<tr>
<td>Poland</td>
<td>NDSCh (mg/m³)</td>
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<td>Romania</td>
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</tr>
<tr>
<td>Slovakia</td>
<td>NPHV (priemerná) (mg/m³)</td>
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<tr>
<td></td>
<td>1.5 mg/m³</td>
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GELEST RED IRON OXIDE TC
Safety Data Sheet

<table>
<thead>
<tr>
<th>Iron oxide (Fe2O3) (1309-37-1)</th>
<th>Safety Data Sheet</th>
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</thead>
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<tr>
<td>Sweden</td>
<td>nivågränsvärde (NVG) (mg/m³)</td>
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<tr>
<td>Canada (Quebec)</td>
<td>VEMP (mg/m³)</td>
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<tr>
<td>Australia</td>
<td>TWA (mg/m³)</td>
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<tr>
<td>Portugal</td>
<td>OEL TWA (mg/m³)</td>
</tr>
<tr>
<td>Portugal</td>
<td>OEL chemical category (PT)</td>
</tr>
</tbody>
</table>

8.2. Exposure controls

Appropriate engineering controls:
Provide local exhaust or general room ventilation.

Personal protective equipment:
Avoid all unnecessary exposure. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

Hand protection:
Neoprene or nitrile rubber gloves

Eye protection:
Chemical goggles or safety glasses

Skin and body protection:
Wear suitable protective clothing

Respiratory protection:
Where exposure through inhalation may occur from use, respiratory protection equipment is recommended. NIOSH-certified dust and mist (orange cartridge) respirator.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state: Solid
Appearance: Powder.
Colour: Red to Reddish Brown.
Odour: Slight, characteristic.
Odour threshold: No data available
Refractive index: No additional information available
pH: No data available
Relative evaporation rate (butylacetate=1): No data available
Melting point: No data available
Freezing point: No data available
Boiling point: No data available
Flash point: No data available
Auto-ignition temperature: No data available
Decomposition temperature: No data available
Flammability (solid, gas): No data available
Vapour pressure: No data available
Relative vapour density at 20 °C: No data available
Relative density: No data available
Density: 4.8 - 5.2
Solubility: Insoluble in water.
Log Pow: No data available
Log Kow: 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 : No data available

9.2. Other information
No additional information available

**SECTION 10: Stability and reactivity**

10.1. Reactivity
No additional information available

10.2. Chemical stability
No additional information available

10.3. Possibility of hazardous reactions
No additional information available

10.4. Conditions to avoid
Excessive heat.

10.5. Incompatible materials
Oxidizing agent. Iron oxides react violently with aluminum, ethylene oxide, hydrazine, and calcium hypochlorite.

10.6. Hazardous decomposition products
No additional information available

**SECTION 11: Toxicological information**

11.1. Information on toxicological effects

Acute toxicity : Not classified

**Triethoxycaprylsilane (2943-75-1)**

LD50 oral rat > 5110 mg/kg

**Iron oxide (Fe2O3) (1309-37-1)**

LD50 oral rat > 5000 mg/kg

Skin corrosion/irritation : Not classified
Serious eye damage/irritation : Not classified
Respiratory or skin sensitisation : Not classified
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified

**Iron oxide (Fe2O3) (1309-37-1)**

| IARC group | 3 - Not classifiable

Reproductive toxicity : Not classified
STOT-single exposure : Not classified
STOT-repeated exposure : Not classified
Aspiration hazard : Not classified
Symptoms/effects after inhalation : Inhalation of dust or particulates may irritate the respiratory tract. Overexposure may cause: Cough.
Symptoms/effects after skin contact : No significant signs or symptoms indicative of any adverse health hazard are expected to occur as a result of skin exposure.
Symptoms/effects after eye contact : May cause eye irritation.
Symptoms/effects after ingestion : No information available.
Chronic symptoms : Prolonged inhalation of iron oxide dust is known to produce a condition known as siderosis, a benign pneumoconiosis.

**SECTION 12: Ecological information**

12.1. Toxicity

Acute aquatic toxicity : Not classified
Chronic aquatic toxicity : Not classified

**Iron oxide (Fe2O3) (1309-37-1)**

LC50 fish 1 > 1000 mg/l 48 hours: Leuciscus idus (Golden orfe)

12.2. Persistence and degradability
No additional information available

12.3. Bioaccumulative potential
No additional information 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
Product/Packaging disposal recommendations : Dispose of contents/container to licensed waste disposal facility.
Ecology - waste materials : Avoid release to the environment.

**SECTION 14: Transport information**

14.1. UN number
In accordance with ADR / RID / IMDG / IATA / ADN

| 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
Dangerous for the environment : No
Marine pollutant : No
Other information : No supplementary information available
14.6. Special precautions for user

- Overland transport
No data available

- Transport by sea
No data available

- Air transport
No data available

- Inland waterway transport
No data available

- Rail transport
No data available

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
GELEST RED IRON OXIDE TC is not on the REACH Candidate List
GELEST RED IRON OXIDE TC is not on the REACH Annex XIV List
GELEST RED IRON OXIDE TC is not subject to REGULATION (EU) No 649/2012 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2012 concerning the export and import of hazardous chemicals.

15.1.2. National regulations

Germany
12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV: Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

Netherlands
SZW-lijst van kankerverwekkende stoffen: The substance is not listed
SZW-lijst van mutagene stoffen: The substance is not listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding: The substance is not listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid: The substance is not listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling: The substance is not listed

15.2. Chemical safety assessment
No additional information available

SECTION 16: Other information

Abbreviations and acronyms:

- Abbreviations: ND: Not Determined, No Data; NA: Not Applicable; LD: Lethal Dose; LC: Lethal Concentration; ATE: Acute Toxicity Estimates; H: hour; °: °C unless otherwise stated; mm: millimeters Hg, torr; PEL: permissible exposure level; TWA: time weighted average; TLV: threshold limit value; TG: Test Guideline; NIOSH: National Institute for Occupational Safety and Health; IARC: International Agency for Research on Cancer; NTP: National Toxicology Program; HMIS: Hazardous Material Information System; CAS No.: Chemical Abstract Service Registration Number; EC No.: European Commission Registration Number; EC Index No.: European Commission Index Number; OECD: The Organisation for Economic Co-operation and Development; GHS: The Globally Harmonized System of Classification and Labelling; APF: Assigned Protection Factor

Other information: Prepared by safety and environmental affairs.

Full text of H- and EUH-statements:

| H315 | Causes skin irritation. |
| Skin Irrit. 2 | Skin corrosion/irritation, Category 2 |
| EUH210 | Safety data sheet available on request. |
The information contained in this document has been gathered from reference materials and/or Gelest, Inc. test data and is to the best knowledge and belief of Gelest, Inc. accurate and reliable. Such information is offered solely for your consideration, investigation and verification. It is not suggested or guaranteed that the hazard precautions or procedures described are the only ones which exist. Gelest, Inc. makes no warranties, express or implied, with respect to the use of such information and assumes no responsibility therefor. Information on this safety data sheet is not intended to constitute a basis for product specifications.

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