

**GELEST RED IRON OXIDE TC**

Safety Data Sheet RIA-TCA

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Version: 2.0

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-OCTYLTRIETHOXYSILANE
 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.**

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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.

2.3. Other hazards

No additional information available

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

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Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Iron oxide (Fe ₂ O ₃)	(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.

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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.

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

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

Iron oxide (Fe ₂ O ₃) (1309-37-1)		
Austria	MAK (mg/m ³)	5 mg/m ³ (respirable fraction) 10 mg/m ³ (inhalable fraction)
Austria	MAK Short time value (mg/m ³)	10 mg/m ³ (respirable fraction)
Belgium	Limit value (mg/m ³)	5 mg/m ³ (fume)
Bulgaria	OEL TWA (mg/m ³)	5 mg/m ³
France	VME (mg/m ³)	5 mg/m ³ (fume)
Greece	OEL TWA (mg/m ³)	10 mg/m ³
Greece	OEL STEL (mg/m ³)	10 mg/m ³
Italy - Portugal - USA ACGIH	ACGIH TWA (mg/m ³)	5 mg/m ³ (respirable fraction)
USA IDLH	US IDLH (mg/m ³)	2500 mg/m ³ (dust and fume)
USA NIOSH	NIOSH REL (TWA) (mg/m ³)	5 mg/m ³ (dust and fume)
USA OSHA	OSHA PEL (TWA) (mg/m ³)	10 mg/m ³ (fume) 15 mg/m ³ (total dust) 5 mg/m ³ (respirable fraction)
Spain	VLA-ED (mg/m ³)	5 mg/m ³ (dust and fume)
Switzerland	MAK (mg/m ³)	3 mg/m ³ (respirable dust)
United Kingdom	WEL TWA (mg/m ³)	5 mg/m ³ (fume) 10 mg/m ³ (total inhalable) 4 mg/m ³ (respirable)
United Kingdom	WEL STEL (mg/m ³)	10 mg/m ³ (fume) 30 mg/m ³ (calculated-total inhalable) 12 mg/m ³ (calculated-respirable)
Denmark	Grænseværdie (langvarig) (mg/m ³)	3.5 mg/m ³
Finland	HTP-arvo (8h) (mg/m ³)	5 mg/m ³ (fume)
Hungary	AK-érték	6 mg/m ³ (respirable dust)
Ireland	OEL (8 hours ref) (mg/m ³)	5 mg/m ³ (fume) 10 mg/m ³ (total inhalable dust) 4 mg/m ³ (respirable dust)
Ireland	OEL (15 min ref) (mg/m ³)	30 mg/m ³ (calculated-total inhalable dust) 10 mg/m ³ (fume) 12 mg/m ³ (calculated-respirable dust)
Lithuania	IPRV (mg/m ³)	3.5 mg/m ³ (inhalable fraction)
Norway	Grenseverdier (AN) (mg/m ³)	3 mg/m ³
Norway	Grenseverdier (Korttidsverdi) (mg/m ³)	3 mg/m ³
Poland	NDS (mg/m ³)	5 mg/m ³ (respirable fraction)
Poland	NDSch (mg/m ³)	10 mg/m ³ (respirable fraction)
Romania	OEL TWA (mg/m ³)	5 mg/m ³ (dust and fume)
Romania	OEL STEL (mg/m ³)	10 mg/m ³ (dust and fume)
Slovakia	NPHV (priemerná) (mg/m ³)	1.5 mg/m ³

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Iron oxide (Fe ₂ O ₃) (1309-37-1)		
Sweden	nivågränsvärde (NVG) (mg/m ³)	3.5 mg/m ³ (respirable dust)
Canada (Quebec)	VEMP (mg/m ³)	5 mg/m ³ (dust and fume) 10 mg/m ³ (containing no Asbestos and <1% Crystalline silica, regulated under Rouge-total dust)
Australia	TWA (mg/m ³)	5 mg/m ³ (fume) 10 mg/m ³ (containing no asbestos and <1% crystalline silica-inhalable dust)
Portugal	OEL TWA (mg/m ³)	5 mg/m ³ (respirable fraction)
Portugal	OEL chemical category (PT)	A4 - Not Classifiable as a Human Carcinogen

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

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

LD50 oral rat	> 5000 mg/kg
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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
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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 pneumoconosis.

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)
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12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

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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

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

Dangerous for the environment : No
Marine pollutant : No
Other information : No supplementary information available

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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.

GELEST RED IRON OXIDE TC is not subject to Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC

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:

Skin Irrit. 2	Skin corrosion/irritation, Category 2
H315	Causes skin irritation.
EUH210	Safety data sheet available on request.

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SDS EU (REACH Annex II) - Custom

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 therefore. Information on this safety data sheet is not intended to constitute a basis for product specifications.

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