

**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1. Product identifier**

Product form	: Substance
Physical state	: Liquid
Substance name	: TRIISOBUTYLCHLOROSILANE
Product code	: SIT8378.6
Formula	: C <sub>12</sub> H <sub>27</sub> ClSi
Synonyms	: CHLOROTRIISOBUTYLSILANE
Chemical family	: ORGANOCHLOROSILANE

**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 : Chemical intermediate

**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.**

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**Germany**

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[info@gelestde.com](mailto:info@gelestde.com) - [www.gelestde.com](http://www.gelestde.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]**

Skin corrosion/irritation, Category 1B	H314
Serious eye damage/eye irritation, Category 1	H318
Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation	H335

Full text of H statements : see section 16

**Adverse physicochemical, human health and environmental effects**

No additional information available

**2.2. Label elements****Labelling according to Regulation (EC) No. 1272/2008 [CLP]**

Hazard pictograms (CLP) :



GHS05

GHS07

Signal word (CLP) : Danger

Hazard statements (CLP) : H314 - Causes severe skin burns and eye damage.  
H335 - May cause respiratory irritation.

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Precautionary statements (CLP) : P280 - Wear protective gloves/protective clothing/eye protection/face protection.  
P264 - Wash hands thoroughly after handling.  
P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P310 - Immediately call a POISON CENTER or doctor/physician

### 2.3. Other hazards

No additional information available

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Substance type : Mono-constituent  
Name : TRIISOBUTYLCHLOROSILANE  
CAS-No. : 13154-25-1  
EC-No. : 454-150-0

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Triisobutylchlorosilane	(CAS-No.) 13154-25-1 (EC-No.) 454-150-0	95 - 100	Skin Corr. 1B, H314 Eye Dam. 1, H318 STOT SE 3, H335

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. Get medical advice/attention.  
First-aid measures after skin contact : Wash with plenty of water/.... Get immediate medical advice/attention.  
First-aid measures after eye contact : Immediately flush eyes thoroughly with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate 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 : Causes severe skin burns and eye damage.  
Symptoms/effects after inhalation : May cause respiratory irritation.  
Symptoms/effects after skin contact : Causes (severe) skin burns.  
Symptoms/effects after eye contact : Causes serious eye damage.  
Symptoms/effects after ingestion : May be harmful if swallowed.

### 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 : Water spray. Water fog. Foam. Carbon dioxide. Dry chemical.  
Unsuitable extinguishing media : Water.

### 5.2. Special hazards arising from the substance or mixture

Fire hazard : Irritating fumes of hydrogen chloride and organic acid vapors may develop when material is exposed to elevated temperatures or open flame.

### 5.3. Advice for firefighters

Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire.  
Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Avoid all eye and skin contact and do not breathe vapour and mist.

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### 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. Notify authorities if liquid enters sewers or public waters.

#### 6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Clean up any spills as soon as possible, using an absorbent material to collect it. Sweep or shovel spills into appropriate container 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 : Avoid all eye and skin contact and do not breathe vapour and mist. Provide good ventilation in process area to prevent formation of vapour.

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.

Incompatible materials : Alkalis. Oxidizing agent.

Storage area : Store in a well-ventilated place. Store away from heat.

#### 7.3. Specific end use(s)

No additional information available

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

No additional information available

#### 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 face shield. Contact lenses should not be worn

##### Skin and body protection:

Wear suitable protective clothing

##### Respiratory protection:

NIOSH-certified combination organic vapor/acid gas (yellow cartridge) respirator.

### SECTION 9: Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

Physical state : Liquid

Appearance : Clear liquid.

Molecular mass : 234.89 g/mol

Colour : No data available

Odour : Acrid. Similar to hydrogen chloride.

Odour threshold : No data available

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Refractive index	: 1.449
pH	: No data available
Relative evaporation rate (butylacetate=1)	: < 1
Melting point	: No data available
Freezing point	: < 0 °C
Boiling point	: 225 - 228 °C
Flash point	: 109 °C
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapour pressure	: < 1 mm Hg @ 20°C
Relative vapour density at 20 °C	: > 1
Relative density	: 0.877
% Volatiles	: > 95 %
Solubility	: Insoluble in water. Reacts with 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

Stable in sealed containers stored under a dry inert atmosphere.

### 10.3. Possibility of hazardous reactions

No additional information available

### 10.4. Conditions to avoid

Heat. Open flame. Sparks.

### 10.5. Incompatible materials

Alkalis. Oxidizing agent.

### 10.6. Hazardous decomposition products

Carbon monoxide. Hydrogen chloride. Organic acid vapors. Silicon dioxide.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity	: Not classified
Skin corrosion/irritation	: Causes severe skin burns and eye damage.
Serious eye damage/irritation	: Causes serious eye damage.
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: May cause respiratory irritation.
STOT-repeated exposure	: Not classified
Aspiration hazard	: Not classified
Symptoms/effects after inhalation	: May cause respiratory irritation.
Symptoms/effects after skin contact	: Causes (severe) skin burns.
Symptoms/effects after eye contact	: Causes serious eye damage.
Symptoms/effects after ingestion	: May be harmful if swallowed.

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Reason for classification : Expert judgment

### SECTION 12: Ecological information

#### 12.1. Toxicity

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

#### 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

Other adverse effects : This substance may be hazardous to the environment.

### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

Product/Packaging disposal recommendations : Incinerate. Dispose in a safe manner in accordance with local/national regulations. 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) : 2987  
UN-No. (IMDG) : 2987  
UN-No. (IATA) : 2987  
UN-No. (ADN) : 2987  
UN-No. (RID) : 2987

#### 14.2. UN proper shipping name

Proper Shipping Name (ADR) : CHLOROSILANES, CORROSIVE, N.O.S.  
Proper Shipping Name (IMDG) : CHLOROSILANES, CORROSIVE, N.O.S.  
Proper Shipping Name (IATA) : Chlorosilanes, corrosive, n.o.s.  
Proper Shipping Name (ADN) : CHLOROSILANES, CORROSIVE, N.O.S.  
Proper Shipping Name (RID) : CHLOROSILANES, CORROSIVE, N.O.S.  
Transport document description (ADR) : UN 2987 CHLOROSILANES, CORROSIVE, N.O.S. (TRISOBUTYLCHLOROSILANE), 8, II, (E)  
Transport document description (IMDG) : UN 2987 CHLOROSILANES, CORROSIVE, N.O.S. (TRISOBUTYLCHLOROSILANE), 8, II  
Transport document description (IATA) : UN 2987 Chlorosilanes, corrosive, n.o.s. (TRISOBUTYLCHLOROSILANE), 8, II  
Transport document description (ADN) : UN 2987 CHLOROSILANES, CORROSIVE, N.O.S. (TRISOBUTYLCHLOROSILANE), 8, II  
Transport document description (RID) : UN 2987 CHLOROSILANES, CORROSIVE, N.O.S. (TRISOBUTYLCHLOROSILANE), 8, II

#### 14.3. Transport hazard class(es)

##### ADR

Transport hazard class(es) (ADR) : 8  
Danger labels (ADR) : 8



##### IMDG

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Transport hazard class(es) (IMDG) : 8  
Danger labels (IMDG) : 8



### IATA

Transport hazard class(es) (IATA) : 8  
Hazard labels (IATA) : 8



### ADN

Transport hazard class(es) (ADN) : 8  
Danger labels (ADN) : 8



### RID

Transport hazard class(es) (RID) : 8  
Danger labels (RID) : 8



#### 14.4. Packing group

Packing group (ADR) : II  
Packing group (IMDG) : II  
Packing group (IATA) : II  
Packing group (ADN) : II  
Packing group (RID) : II

#### 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

Classification code (ADR) : C3  
Special provisions (ADR) : 548  
Limited quantities (ADR) : 0  
Excepted quantities (ADR) : E0  
Packing instructions (ADR) : P010  
Special packing provisions (ADR) : RR7  
Mixed packing provisions (ADR) : MP15

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Portable tank and bulk container instructions (ADR) : T14  
Portable tank and bulk container special provisions (ADR) : TP2, TP7, TP27  
Tank code (ADR) : L4BN  
Vehicle for tank carriage : AT  
Transport category (ADR) : 2  
Hazard identification number (Kemler No.) : X80  
Orange plates :



Tunnel restriction code (ADR) : E  
EAC code : 4W

### - Transport by sea

Limited quantities (IMDG) : 0  
Excepted quantities (IMDG) : E0  
Packing instructions (IMDG) : P010  
Tank instructions (IMDG) : T14  
Tank special provisions (IMDG) : TP2, TP7, TP13, TP27  
EmS-No. (Fire) : F-A  
EmS-No. (Spillage) : S-B  
Stowage category (IMDG) : C  
Stowage and handling (IMDG) : SW2  
Properties and observations (IMDG) : Colourless liquids with a pungent odour. Immiscible with water. React violently with water or steam, evolving hydrogen chloride, an irritating and corrosive gas apparent as white fumes. When involved in a fire, evolve toxic gases. In the presence of moisture, highly corrosive to most metals. Cause burns to skin, eyes and mucous membranes.

### - Air transport

PCA Excepted quantities (IATA) : E0  
PCA Limited quantities (IATA) : Forbidden  
PCA limited quantity max net quantity (IATA) : Forbidden  
PCA packing instructions (IATA) : Forbidden  
PCA max net quantity (IATA) : Forbidden  
CAO packing instructions (IATA) : 876  
CAO max net quantity (IATA) : 30L  
Special provisions (IATA) : A1  
ERG code (IATA) : 8L

### - Inland waterway transport

Classification code (ADN) : C3  
Special provisions (ADN) : 548  
Limited quantities (ADN) : 0  
Excepted quantities (ADN) : E0  
Equipment required (ADN) : PP, EP  
Number of blue cones/lights (ADN) : 0

### - Rail transport

Classification code (RID) : C3  
Special provisions (RID) : 548  
Limited quantities (RID) : 0  
Excepted quantities (RID) : E0  
Packing instructions (RID) : P010  
Mixed packing provisions (RID) : MP15  
Portable tank and bulk container instructions (RID) : T14  
Portable tank and bulk container special provisions (RID) : TP2, TP7, TP27  
Tank codes for RID tanks (RID) : L4BN  
Transport category (RID) : 2



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Colis express (express parcels) (RID) : CE6  
Hazard identification number (RID) : X80

### 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

TRISOBUTYLCHLOROSILANE is not on the REACH Candidate List

TRISOBUTYLCHLOROSILANE is not on the REACH Annex XIV List

TRISOBUTYLCHLOROSILANE 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.

TRISOBUTYLCHLOROSILANE 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

% Volatiles : > 95 %

#### 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

##### Denmark

Danish National Regulations : Young people below the age of 18 years are not allowed to use the product

### 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
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Other information : Prepared by safety and environmental affairs.

Full text of H- and EUH-statements:

Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Skin Corr. 1B	Skin corrosion/irritation, Category 1B
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H335	May cause respiratory irritation.

SDS EU (REACH Annex II) - Custom



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## Safety Data Sheet

*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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