

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

1.1. Product identifier

| | |
|-----------------|---|
| Product form | : Substance |
| Physical state | : Liquid |
| Substance name | : ALLYLTRICHLOROSILANE |
| Product code | : SIA0520.0 |
| Formula | : C ₃ H ₅ Cl ₃ Si |
| Synonyms | : PROP-2-ENYLTRICHLOROSILANE; ALLYLSILICONE TRICHLORIDE |
| 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 - 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@gelestde.com - 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]

| | |
|---|------|
| Flammable liquids, Category 3 | H226 |
| 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) :



GHS02

GHS05

GHS07

Signal word (CLP) :

: Danger

ALLYLTRICHLOROSILANE

Safety Data Sheet

| | |
|--------------------------------|--|
| Hazard statements (CLP) | : H226 - Flammable liquid and vapour. H314 - Causes severe skin burns and eye damage. H335 - May cause respiratory irritation. |
| Precautionary statements (CLP) | : P280 - Wear protective gloves/protective clothing/eye protection/face protection. P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P240 - Ground/bond container and receiving equipment. P260 - Do not breathe vapours. P264 - Wash hands thoroughly after handling. 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 | : ALLYLTRICHLOROSILANE |
| CAS-No. | : 107-37-9 |
| EC-No. | : 203-485-9 |

| Name | Product identifier | % | Classification according to Regulation (EC) No. 1272/2008 [CLP] |
|----------------------|--|----------|--|
| Allyltrichlorosilane | (CAS-No.) 107-37-9 (EC-No.) 203-485-9 | 95 - 100 | Flam. Liq. 3, H226 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. Overexposure may cause: Cough. Headache. Nausea. |
| 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

Note to physician: Organochlorosilanes react with water to form hydrochloric acid, consequently treatment for acid burns may be considered.

SECTION 5: Firefighting measures

5.1. Extinguishing media

| | |
|--------------------------------|--|
| Suitable extinguishing media | : Water spray. Foam. Carbon dioxide. Dry chemical. |
| Unsuitable extinguishing media | : Water. |

5.2. Special hazards arising from the substance or mixture

| | |
|-------------|---|
| Fire hazard | : Flammable liquid and vapour. Irritating fumes of hydrogen chloride and organic acid vapors may develop when material is exposed to water or open flame. |
|-------------|---|

5.3. Advice for firefighters

| | |
|---------------------------|---|
| Firefighting instructions | : Use water spray to cool exposed surfaces. Exercise caution when fighting any chemical fire. |
|---------------------------|---|

ALLYLTRICHLOROSILANE

Safety Data Sheet

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.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Remove ignition sources. Use special care to avoid static electric charges.

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. Use only non-sparking tools.

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. Containers and transfer lines require grounding during use. Provide good ventilation in process area to prevent formation of vapour. Use only outdoors or in a well-ventilated area. Use only non-sparking tools.

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

Technical measures : Ground/bond container and receiving equipment. Use explosion-proof electrical equipment.

Storage conditions : Keep container tightly closed. Store in sealed containers in the dark at 0-5°C.

Incompatible materials : alcohols. Amines. Oxidizing agent. Peroxides.

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.

ALLYLTRICHLOROSILANE

Safety Data Sheet

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

| | |
|--|--|
| Physical state | : Liquid |
| Appearance | : Clear liquid. |
| Molecular mass | : 175.52 g/mol |
| Colour | : Straw. |
| Odour | : Acrid. Similar to hydrogen chloride. |
| Odour threshold | : No data available |
| Refractive index | : 1.446 |
| pH | : No data available |
| Relative evaporation rate (butylacetate=1) | : No data available |
| Melting point | : No data available |
| Freezing point | : < 0 °C |
| Boiling point | : 117 - 118 °C |
| Flash point | : 31 °C |
| Auto-ignition temperature | : No data available |
| Decomposition temperature | : No data available |
| Flammability (solid, gas) | : Flammable liquid and vapour. |
| Vapour pressure | : 10 mm Hg @ 16°C |
| Relative vapour density at 20 °C | : > 1 |
| Relative density | : 1.201 |
| Solubility | : 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 in the dark at 0-5°C. Polymerization can occur when stored at elevated temperature.

10.3. Possibility of hazardous reactions

Reacts with water and moisture in air, liberating hydrogen chloride. Hazardous polymerization may occur if stored at elevated temperatures (>80°C).

10.4. Conditions to avoid

Heat. Open flame. Sparks.

10.5. Incompatible materials

alcohols. Amines. Oxidizing agent. Peroxides.

10.6. Hazardous decomposition products

Organic acid vapors.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

Allyltrichlorosilane (107-37-9)

| | |
|------------------------|----------|
| LD50 intravenous mouse | 56 mg/kg |
|------------------------|----------|

| | |
|-----------------------------------|--|
| 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 |

ALLYLTRICHLOROSILANE

Safety Data Sheet

| | |
|---|---|
| Carcinogenicity | : Not classified |
| Reproductive toxicity | : Not classified |
| STOT-single exposure | : May cause respiratory irritation. |
| STOT-repeated exposure | : Not classified |
| Aspiration hazard | : Not classified |
| Potential adverse human health effects and symptoms | : Inhalation of large amounts is expected to cause necrosis of tracheal epithelium, bronchitis and interstitial pneumonia by analogy to animal tests for tetrachlorosilane. |
| Symptoms/effects after inhalation | : May cause respiratory irritation. Overexposure may cause: Cough. Headache. Nausea. |
| 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. |
| 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 | : 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) | : 1724 |
| UN-No. (IMDG) | : 1724 |
| UN-No. (IATA) | : 1724 |
| UN-No. (ADN) | : 1724 |
| UN-No. (RID) | : 1724 |

14.2. UN proper shipping name

| | |
|---------------------------------------|---|
| Proper Shipping Name (ADR) | : ALLYLTRICHLOROSILANE, STABILIZED |
| Proper Shipping Name (IMDG) | : ALLYLTRICHLOROSILANE, STABILIZED |
| Proper Shipping Name (IATA) | : Allylchlorosilane, stabilized |
| Proper Shipping Name (ADN) | : ALLYLTRICHLOROSILANE, STABILIZED |
| Proper Shipping Name (RID) | : ALLYLTRICHLOROSILANE, STABILIZED |
| Transport document description (ADR) | : UN 1724 ALLYLTRICHLOROSILANE, STABILIZED, 8 (3), II, (D/E) |
| Transport document description (IMDG) | : UN 1724 ALLYLTRICHLOROSILANE, STABILIZED, 8 (3), II (35°C c.c.) |
| Transport document description (IATA) | : UN 1724 Allylchlorosilane, stabilized, 8 (3), II |
| Transport document description (ADN) | : UN 1724 ALLYLTRICHLOROSILANE, STABILIZED, 8 (3), II |
| Transport document description (RID) | : UN 1724 ALLYLTRICHLOROSILANE, STABILIZED, 8 (3), II |

ALLYLTRICHLOROSILANE

Safety Data Sheet

14.3. Transport hazard class(es)

ADR

Transport hazard class(es) (ADR) : 8 (3)

Danger labels (ADR) : 8, 3



IMDG

Transport hazard class(es) (IMDG) : 8 (3)

Danger labels (IMDG) : 8, 3



IATA

Transport hazard class(es) (IATA) : 8 (3)

Hazard labels (IATA) : 8, 3



ADN

Transport hazard class(es) (ADN) : 8 (3)

Danger labels (ADN) : 8, 3



RID

Transport hazard class(es) (RID) : 8 (3)

Danger labels (RID) : 8, 3



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

ALLYLTRICHLOROSILANE

Safety Data Sheet

14.6. Special precautions for user

- Overland transport

| | |
|---|------------|
| Classification code (ADR) | : CF1 |
| Limited quantities (ADR) | : 0 |
| Excepted quantities (ADR) | : E0 |
| Packing instructions (ADR) | : P010 |
| Special packing provisions (ADR) | : B4 |
| Mixed packing provisions (ADR) | : MP15 |
| Portable tank and bulk container instructions (ADR) | : T10 |
| Portable tank and bulk container special provisions (ADR) | : TP2, TP7 |
| Tank code (ADR) | : L4BN |
| Vehicle for tank carriage | : FL |
| Transport category (ADR) | : 2 |
| Special provisions for carriage - Operation (ADR) | : S2 |
| Hazard identification number (Kemler No.) | : X839 |
| Orange plates | : |

X839

1724

| | |
|-------------------------------|---------|
| Tunnel restriction code (ADR) | : D/E |
| EAC code | : 4W |
| APP code | : A(fl) |

- Transport by sea

| | |
|------------------------------------|---|
| Limited quantities (IMDG) | : 0 |
| Excepted quantities (IMDG) | : E0 |
| Packing instructions (IMDG) | : P010 |
| Tank instructions (IMDG) | : T10 |
| Tank special provisions (IMDG) | : TP2, TP7, TP13 |
| EmS-No. (Fire) | : F-E |
| EmS-No. (Spillage) | : S-C |
| Stowage category (IMDG) | : C |
| Stowage and handling (IMDG) | : SW2 |
| Flash point (IMDG) | : 35°C c.c. |
| Properties and observations (IMDG) | : Colourless, flammable liquid with a pungent odour. Flashpoint: 35°C c.c Reacts violently with water, evolving hydrogen chloride, an irritating and corrosive gas, apparent as white fumes. When involved in a fire, evolves toxic gases. In the presence of moisture, highly corrosive to most metals. Causes 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, A209 |
| ERG code (IATA) | : 8F |

- Inland waterway transport

| | |
|-----------------------------------|-----------------|
| Classification code (ADN) | : CF1 |
| Limited quantities (ADN) | : 0 |
| Excepted quantities (ADN) | : E0 |
| Equipment required (ADN) | : PP, EP, EX, A |
| Ventilation (ADN) | : VE01 |
| Number of blue cones/lights (ADN) | : 1 |

ALLYLTRICHLOROSILANE

Safety Data Sheet

- Rail transport

| | |
|---|------------|
| Classification code (RID) | : CF1 |
| Limited quantities (RID) | : 0 |
| Excepted quantities (RID) | : E0 |
| Packing instructions (RID) | : P010 |
| Mixed packing provisions (RID) | : MP15 |
| Portable tank and bulk container instructions (RID) | : T10 |
| Portable tank and bulk container special provisions (RID) | : TP2, TP7 |
| Tank codes for RID tanks (RID) | : L4BN |
| Transport category (RID) | : 2 |
| Colis express (express parcels) (RID) | : CE6 |
| Hazard identification number (RID) | : X839 |

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

ALLYLTRICHLOROSILANE is not on the REACH Candidate List

ALLYLTRICHLOROSILANE is not on the REACH Annex XIV List

ALLYLTRICHLOROSILANE 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.

ALLYLTRICHLOROSILANE 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

Reference to AwSV : Water hazard class (WGK) 1, Slightly hazardous to water (Classification according to VwVwS, Annex 1 or 2; ID No. 557)

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 : ALLYLTRICHLOROSILANE is 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

Class for fire hazard : Class II-1

Store unit : 5 liter

Classification remarks : R10 <H226;H314;H335>; Emergency management guidelines for the storage of flammable liquids must be followed

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:

ALLYLTRICHLOROSILANE

Safety Data Sheet

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:

| | |
|---------------|--|
| Eye Dam. 1 | Serious eye damage/eye irritation, Category 1 |
| Flam. Liq. 3 | Flammable liquids, Category 3 |
| Skin Corr. 1B | Skin corrosion/irritation, Category 1B |
| STOT SE 3 | Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation |
| H226 | Flammable liquid and vapour. |
| H314 | Causes severe skin burns and eye damage. |
| H318 | Causes serious eye damage. |
| H335 | May cause respiratory irritation. |

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.

© 2019 Gelest Inc. Morrisville, PA 19067

The logo for Gelest, featuring the word "Gelest" in a large, white, serif font. The letters are set against a light blue background that is shaped like a right-angled triangle pointing to the right. The "G" and "e" are partially obscured by the blue shape.