



BIS((TRIDECAFLUORO-1,1,2,2-TETRAHYDROOCTYL)DIMETHYLSILOXY)METHYLCHLOROSILANE

Safety Data Sheet SIB1815.5

Date of issue: 27/06/2016 Version: 1.0

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

1.1. Product identifier

| | |
|-----------------|--|
| Product form | : Substance |
| Physical state | : Liquid |
| Substance name | : BIS((TRIDECAFLUORO-1,1,2,2-TETRAHYDROOCTYL)DIMETHYLSILOXY)METHYLCHLOROSILANE |
| Product code | : SIB1815.5 |
| Formula | : C ₂₁ H ₂₃ ClF ₂₆ O ₂ Si ₃ |
| Synonyms | : BIS[PERFLUOROCTYL)DIMETHYLSILOXY]METHYLCHLOROSILANE |
| 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.

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USA

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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]

Skin corrosion/irritation, Category 1B H314

Serious eye damage/eye irritation, Category 1 H318

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

Signal word (CLP) : Danger

Hazard statements (CLP) : H314 - Causes severe skin burns and eye damage.

Precautionary statements (CLP) : P280 - Wear protective gloves/protective clothing/eye protection/face protection.

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P260 - Do not breathe vapours.
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.
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

EUH-statements : EUH014 - Reacts violently with water.

2.3. Other hazards

Other hazards not contributing to the classification : Hydrogen chloride may be formed by reaction with water and moisture in air. The US OSHA PEL (TWA) for hydrogen chloride is 5 ppm.

SECTION 3: Composition/information on ingredients

3.1. Substances

Substance type : Mono-constituent
Name : BIS((TRIDECAFLUORO-1,1,2,2-TETRAHYDROOCTYL)DIMETHYLSILOXY)METHYLCHLOROSILANE
CAS-No. : 521069-01-2

| Name | Product identifier | % | Classification according to Regulation (EC) No. 1272/2008 [CLP] |
|---|-----------------------|----------|---|
| Bis((tridecafluoro-1,1,2,2-tetrahydrooctyl)dimethylsiloxyl)methylchlorosilane | (CAS-No.) 521069-01-2 | 95 - 100 | Skin Corr. 1B, H314 Eye Dam. 1, H318 |

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/.... 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 if you feel unwell.

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 irritation to the respiratory tract.
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. 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 water or open flame.

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5.3. Advice for firefighters

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

6.1.1. For non-emergency personnel

- Protective equipment : Wear protective equipment as described in Section 8.
Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

- Protective equipment : Do not attempt to take action without suitable protective equipment. Equip cleanup crew with proper protection. For further information refer to section 8: "Exposure controls/personal 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

- For containment : Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.
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 contaminated clothing before reuse. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2. Conditions for safe storage, including any incompatibilities

- Storage conditions : Keep container tightly closed. Store locked up.
Incompatible materials : Acids. alcohols. 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:

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Where exposure through inhalation may occur from use, respiratory protection equipment is recommended. 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 | : 921.06 g/mol |
| Colour | : Straw. |
| Odour | : Acrid. Similar to hydrogen chloride. |
| 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 | : < 0 °C |
| Boiling point | : 122 - 125 °C @ 1.6 mm Hg |
| Flash point | : > 110 °C |
| Auto-ignition temperature | : No data available |
| Decomposition temperature | : No data available |
| Flammability (solid, gas) | : No data available |
| Vapour pressure | : < 0.01 mm Hg @ 25°C |
| Relative vapour density at 20 °C | : > 1 |
| Relative density | : 1.437 |
| 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 under a dry inert atmosphere.

10.3. Possibility of hazardous reactions

Reacts with water and moisture in air, liberating hydrogen chloride.

10.4. Conditions to avoid

Heat. Open flame. Sparks.

10.5. Incompatible materials

Acids. alcohols. Oxidizing agent.

10.6. Hazardous decomposition products

Hydrogen chloride. Organic acid vapors.

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. |

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| | |
|-------------------------------------|--|
| Respiratory or skin sensitisation | : Not classified |
| Germ cell mutagenicity | : Not classified |
| Carcinogenicity | : Not classified |
| Reproductive toxicity | : Not classified |
| STOT-single exposure | : Not classified |
| STOT-repeated exposure | : Not classified |
| Aspiration hazard | : Not classified |
| Symptoms/effects after inhalation | : May cause irritation to the respiratory tract. |
| 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

| | |
|--|--|
| Sewage disposal recommendations | : Do not dispose of waste into sewer. |
| 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) | : 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. (BIS((TRIDECAFLUORO-1,1,2,2-TETRAHYDROOCTYL)DIMETHYLSILOXY)METHYLCHLOROSILANE), 8, II, (E) |
| Transport document description (IMDG) | : UN 2987 CHLOROSILANES, CORROSIVE, N.O.S. (BIS((TRIDECAFLUORO-1,1,2,2-TETRAHYDROOCTYL)DIMETHYLSILOXY)METHYLCHLOROSILANE), 8, II |

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| | |
|---------------------------------------|--|
| Transport document description (IATA) | : UN 2987 Chlorosilanes, corrosive, n.o.s. (BIS((TRIDECAFLUORO-1,1,2,2-TETRAHYDROOCTYL)DIMETHYLSILOXY)METHYLCHLOROSILANE), 8, II |
| Transport document description (ADN) | : UN 2987 CHLOROSILANES, CORROSIVE, N.O.S. (BIS((TRIDECAFLUORO-1,1,2,2-TETRAHYDROOCTYL)DIMETHYLSILOXY)METHYLCHLOROSILANE), 8, II |
| Transport document description (RID) | : UN 2987 CHLOROSILANES, CORROSIVE, N.O.S. (BIS((TRIDECAFLUORO-1,1,2,2-TETRAHYDROOCTYL)DIMETHYLSILOXY)METHYLCHLOROSILANE), 8, II |

14.3. Transport hazard class(es)

ADR

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



IMDG

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

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

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- 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 |
| 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

BIS((TRIDECAFLUORO-1,1,2,2-TETRAHYDROOCTYL)DIMETHYLSILOXY)METHYLCHLOROSILANE is not on the REACH Candidate List
BIS((TRIDECAFLUORO-1,1,2,2-TETRAHYDROOCTYL)DIMETHYLSILOXY)METHYLCHLOROSILANE is not on the REACH Annex XIV List
BIS((TRIDECAFLUORO-1,1,2,2-TETRAHYDROOCTYL)DIMETHYLSILOXY)METHYLCHLOROSILANE 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.
BIS((TRIDECAFLUORO-1,1,2,2-TETRAHYDROOCTYL)DIMETHYLSILOXY)METHYLCHLOROSILANE 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 |

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

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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:

| | |
|---------------|---|
| Eye Dam. 1 | Serious eye damage/eye irritation, Category 1 |
| Skin Corr. 1B | Skin corrosion/irritation, Category 1B |
| H314 | Causes severe skin burns and eye damage. |
| H318 | Causes serious eye damage. |
| EUH014 | Reacts violently with water. |

SDS EU (REACH Annex II) - Custom

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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" is partially cut off by the left edge of the frame.