

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

Product form	: Substance
Physical state	: Liquid
Substance name	: 1,2-BIS(TRIMETHOXYSILYL)ETHANE, tech-95
Product code	: SIB1830.0
Formula	: C8H22O6Si2
Synonyms	: 3,3,6,6-TETRAMETHOXY-2,7-DIOXA-3,6-DISILAOCTANE
Chemical family	: ORGANOMETHOXYSILANE

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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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]**

Acute toxicity (inhalation:vapour) Category 2	H330
Serious eye damage/eye irritation, Category 2	H319
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) :



GHS06

Signal word (CLP) :

Danger

Hazard statements (CLP) :

H319 - Causes serious eye irritation.
H330 - Fatal if inhaled.

Precautionary statements (CLP) :

P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P260 - Do not breathe vapours.

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P264 - Wash hands thoroughly after handling.
P271 - Use only outdoors or in a well-ventilated area.
P403+P233 - Store in a well-ventilated place. Keep container tightly closed.
P310 - Immediately call a POISON CENTER/doctor/...

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

Substance type : Mono-constituent
Name : 1,2-BIS(TRIMETHOXYSILYL)ETHANE, tech-95
CAS-No. : 18406-41-2
EC-No. : 242-285-6

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
1,2-Bis(trimethoxysilyl)ethane	(CAS-No.) 18406-41-2 (EC-No.) 242-285-6	> 95	Acute Tox. 2 (Inhalation), H330 Acute Tox. 2 (Inhalation:dust,mist), H330 Eye Irrit. 2, H319

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 immediate medical advice/attention.
First-aid measures after skin contact : Wash with plenty of water/.... Get medical advice/attention.
First-aid measures after eye contact : Consult an eye specialist. Immediately flush eyes thoroughly with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
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 : Fatal if inhaled. May cause irritation to the respiratory tract.
Symptoms/effects after skin contact : May cause skin irritation.
Symptoms/effects after eye contact : Causes serious eye irritation. The ability of this material to react and crosslink in the presence of water indicates that contact of the eye by the liquid presents an eye hazard potential with the possibility of permanent damage including blindness.
Symptoms/effects after ingestion : Oral toxicity is associated with methanol, the solvent and a hydrolysis product which causes nausea, vomiting, headache, visual effects including blindness.
Chronic symptoms : On contact with water this compound liberates methanol which is known to have a chronic effect on the central nervous system. Methanol may effect the central nervous system resulting in persistent or recurring headaches or impaired vision.

4.3. Indication of any immediate medical attention and special treatment needed

NOTE TO PHYSICIAN: This product reacts with water in the acid contents of the stomach to form methanol. The combination of visual disturbances, metabolic acidosis and formic acid in urine is evidence of methanol poisoning. The therapeutic intravenous administration of ethanol (10 mls/hour) allows methanol to be preferentially oxidized and reduces production of methanol metabolites. Acidosis must be treated with intravenous administration of sodium bicarbonate and methanol elimination may be increased by hemodialysis, as indicated. Treatment should be based on blood methanol levels and acid-base balance.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Water spray. Water fog. Alcohol-resistant foam. Carbon dioxide. Dry chemical.
Unsuitable extinguishing media : None known.

5.2. Special hazards arising from the substance or mixture

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

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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.

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

- 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.

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 local exhaust or general room ventilation. Ground/bond container and receiving equipment. Take precautionary measures against static discharge. Use only non-sparking tools.
- 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

- Technical measures : Proper grounding procedures to avoid static electricity should be followed.
- Storage conditions : Keep container tightly closed.
- Incompatible materials : 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. Contact lenses should not be worn

Skin and body protection:

- Wear suitable protective clothing

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Respiratory protection:

Where exposure through inhalation may occur from use, respiratory protection equipment is recommended. NIOSH-certified organic vapor (black 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	: 270.43 g/mol
Colour	: No data available
Odour	: characteristic.
Odour threshold	: No data available
Refractive index	: 1.4091
pH	: No data available
Relative evaporation rate (butylacetate=1)	: < 1
Melting point	: No data available
Freezing point	: < 0 °C
Boiling point	: 103 – 104 °C @ 5 mm Hg
Flash point	: 65 °C
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: Combustible liquid
Vapour pressure	: 0.08 mm Hg @ 20°C
Relative vapour density at 20 °C	: > 1
Relative density	: 1.068
% Volatiles	: 10 %
Solubility	: Reacts with water.
Partition coefficient n-octanol/water (Log Pow)	: No data available
Partition coefficient n-octanol/water (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.

10.3. Possibility of hazardous reactions

Material decomposes slowly in contact with moist air or with water liberating methanol. Hazardous polymerization will not occur.

10.4. Conditions to avoid

Heat. Open flame. Sparks.

10.5. Incompatible materials

Oxidizing agent.

10.6. Hazardous decomposition products

Methanol. Organic acid vapors. Silicon dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Fatal if inhaled.

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LC50 inhalation rat (ppm)

2.4 ppm

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ATE CLP (gases)	100 ppmv/4h
ATE CLP (vapours)	0.5 mg/l/4h
ATE CLP (dust,mist)	0.05 mg/l/4h

Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Causes serious eye irritation.
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified None of the components in this product at concentrations >0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: Not classified
Aspiration hazard	: Not classified
Symptoms/effects after inhalation	: Fatal if inhaled. May cause irritation to the respiratory tract.
Symptoms/effects after skin contact	: May cause skin irritation.
Symptoms/effects after eye contact	: Causes serious eye irritation. The ability of this material to react and crosslink in the presence of water indicates that contact of the eye by the liquid presents an eye hazard potential with the possibility of permanent damage including blindness.
Symptoms/effects after ingestion	: Oral toxicity is associated with methanol, the solvent and a hydrolysis product which causes nausea, vomiting, headache, visual effects including blindness.
Chronic symptoms	: On contact with water this compound liberates methanol which is known to have a chronic effect on the central nervous system. Methanol may effect the central nervous system resulting in persistent or recurring headaches or impaired vision.
Reason for classification	: Expert judgment

SECTION 12: Ecological information

12.1. Toxicity

Hazardous to the aquatic environment, short-term (acute)	: Not classified
Hazardous to the aquatic environment, long-term (chronic)	: 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)	: 3382
UN-No. (IMDG)	: 3382
UN-No. (IATA)	: 3382

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UN-No. (ADN) : 3382
UN-No. (RID) : 3382

14.2. UN proper shipping name

Proper Shipping Name (ADR) : TOXIC BY INHALATION LIQUID, N.O.S.
Proper Shipping Name (IMDG) : TOXIC BY INHALATION LIQUID, N.O.S.
Proper Shipping Name (IATA) : Toxic by inhalation liquid, n.o.s.
Proper Shipping Name (ADN) : TOXIC BY INHALATION LIQUID, N.O.S.
Proper Shipping Name (RID) : TOXIC BY INHALATION LIQUID, N.O.S.
Transport document description (ADR) : UN 3382 TOXIC BY INHALATION LIQUID, N.O.S. (1,2-BIS(TRIMETHOXYSILYL)ETHANE), 6.1, I, (C/D)
Transport document description (IMDG) : UN 3382 TOXIC BY INHALATION LIQUID, N.O.S. (1,2-BIS(TRIMETHOXYSILYL)ETHANE), 6.1, I
Transport document description (IATA) : UN 3382 Toxic by inhalation liquid, n.o.s. (1,2-BIS(TRIMETHOXYSILYL)ETHANE), 6.1
Transport document description (ADN) : UN 3382 TOXIC BY INHALATION LIQUID, N.O.S. (1,2-BIS(TRIMETHOXYSILYL)ETHANE), 6.1, I
Transport document description (RID) : UN 3382 TOXIC BY INHALATION LIQUID, N.O.S. (1,2-BIS(TRIMETHOXYSILYL)ETHANE), 6.1, I

14.3. Transport hazard class(es)

ADR

Transport hazard class(es) (ADR) : 6.1
Danger labels (ADR) : 6.1



IMDG

Transport hazard class(es) (IMDG) : 6.1
Danger labels (IMDG) : 6.1



IATA

Transport hazard class(es) (IATA) : 6.1

ADN

Transport hazard class(es) (ADN) : 6.1
Danger labels (ADN) : 6.1



RID

Transport hazard class(es) (RID) : 6.1
Danger labels (RID) : 6.1



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14.4. Packing group


Packing group (ADR)	: I
Packing group (IMDG)	: I
Packing group (IATA)	: Not applicable
Packing group (ADN)	: I
Packing group (RID)	: I

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)	: T1
Special provisions (ADR)	: 274
Limited quantities (ADR)	: 0
Excepted quantities (ADR)	: E0
Packing instructions (ADR)	: P602
Mixed packing provisions (ADR)	: MP8, MP17
Portable tank and bulk container instructions (ADR)	: T20
Portable tank and bulk container special provisions (ADR)	: TP2
Tank code (ADR)	: L10CH
Tank special provisions (ADR)	: TU14, TU15, TE19, TE21
Vehicle for tank carriage	: AT
Transport category (ADR)	: 1
Special provisions for carriage - Loading, unloading and handling (ADR)	: CV1, CV13, CV28
Special provisions for carriage - Operation (ADR)	: S9, S14
Hazard identification number (Kemler No.)	: 66
Orange plates	: 
Tunnel restriction code (ADR)	: C/D
EAC code	: 2XE
APP code	: B

- Transport by sea

Special provisions (IMDG)	: 274
Limited quantities (IMDG)	: 0
Excepted quantities (IMDG)	: E0
Packing instructions (IMDG)	: P602
Tank instructions (IMDG)	: T20
Tank special provisions (IMDG)	: TP2, TP13
EmS-No. (Fire)	: F-A
EmS-No. (Spillage)	: S-A
Stowage category (IMDG)	: D
Stowage and handling (IMDG)	: SW2
Properties and observations (IMDG)	: A variety of toxic liquids which present a highly toxic inhalation hazard. Highly toxic if swallowed, by skin contact or by inhalation.

- Air transport

PCA Limited quantities (IATA)	: Forbidden
PCA limited quantity max net quantity (IATA)	: Forbidden
PCA packing instructions (IATA)	: Forbidden
PCA max net quantity (IATA)	: Forbidden

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CAO packing instructions (IATA) : Forbidden
CAO max net quantity (IATA) : Forbidden
ERG code (IATA) : 6L

- Inland waterway transport

Classification code (ADN) : T1
Special provisions (ADN) : 274, 802
Limited quantities (ADN) : 0
Excepted quantities (ADN) : E0
Equipment required (ADN) : PP, EP, TOX, A
Ventilation (ADN) : VE02
Number of blue cones/lights (ADN) : 2

- Rail transport

Classification code (RID) : T1
Special provisions (RID) : 274
Limited quantities (RID) : 0
Excepted quantities (RID) : E0
Packing instructions (RID) : P602
Mixed packing provisions (RID) : MP8, MP17
Portable tank and bulk container instructions (RID) : T20
Portable tank and bulk container special provisions (RID) : TP2
Tank codes for RID tanks (RID) : L10CH
Special provisions for RID tanks (RID) : TU14, TU15, TU38, TE21, TE22
Transport category (RID) : 1
Special provisions for carriage - Loading, unloading and handling (RID) : CW13, CW28, CW31
Hazard identification number (RID) : 66

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

1,2-BIS(TRIMETHOXYSILYL)ETHANE, tech-95 is not on the REACH Candidate List

1,2-BIS(TRIMETHOXYSILYL)ETHANE, tech-95 is not on the REACH Annex XIV List

1,2-BIS(TRIMETHOXYSILYL)ETHANE, tech-95 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.

1,2-BIS(TRIMETHOXYSILYL)ETHANE, tech-95 is not subject to Regulation (EU) No 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants

% Volatiles : 10 %

15.1.2. National regulations

Germany

Regulatory reference : Not classified according to Regulation Governing Systems for Handling Substances Hazardous to Waters (AwSV)

Hazardous Incident Ordinance (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

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NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : The substance is not listed

Denmark

Class for fire hazard : Class III-1

Store unit : 50 liter

Classification remarks : Flammable according to the Danish Ministry of Justice; 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:

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:

Acute Tox. 2 (Inhalation)	Acute toxicity (inhal.), Category 2
Acute Tox. 2 (Inhalation:dust,mist)	Acute toxicity (inhalation:dust,mist) Category 2
Acute Tox. 2 (Inhalation:vapour)	Acute toxicity (inhalation:vapour) Category 2
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
H319	Causes serious eye irritation.
H330	Fatal if inhaled.

SDS EU (REACH Annex II) - Custom

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