

1,2-BIS(METHYLDIETHOXYSILYL)ETHANE

Safety Data Sheet SIB1615.0

Date of issue: 02/23/2015

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	: 1,2-BIS(METHYLDIETHOXYSILYL)ETHANE
Product code	: SIB1615.0
Formula	: C12H30O4Si2
Synonyms	: 4,7-DIETHOXY-4,7-DIMETHYL3,8-DIOXA-4,7-DISILADECANE
Chemical family	: ORGANOETHOXYSILANE

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture	: Chemical intermediate For research use only
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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

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 (GHS-US)

Flam. Liq. 4 H227
Eye Irrit. 2A H319

Full text of H-phrases: see section 16

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US) :



GHS07

Signal word (GHS-US)

Hazard statements (GHS-US)

Precautionary statements (GHS-US)

: Warning

: H227 - Combustible liquid

H319 - Causes serious eye irritation

: P280 - Wear protective gloves/protective clothing/eye protection/face protection

P264 - Wash hands thoroughly after handling

P210 - Keep away from heat, open flames, sparks. - No smoking

P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

P337+P313 - If eye irritation persists: Get medical advice/attention

P370+P378 - In case of fire: Use water spray or fog, alcohol resistant foam, carbon dioxide, dry chemical to extinguish

P403+P235 - Keep in a cool place

P501 - Dispose of contents/container to licensed waste disposal facility.

2.3. Other hazards

Other hazards not contributing to the classification

: Note: The hydrolysis product of bis(triethoxysilyl)ethylene is ethanol. Overexposure to ethanol by skin absorption, inhalation or ingestion may have a narcotic effect (headache, nausea, drowsiness). Ethanol is metabolized to acetaldehyde and acetic acid which in large quantities result in metabolic acidosis, CNS depression and death due to respiratory arrest. This product contains ethanol which is classified as a carcinogen by IARC in alcoholic beverages.

2.4. Unknown acute toxicity (GHS-US)

No data available

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SECTION 3: Composition/information on ingredients

3.1. Substance

Substance type : Multi-constituent
Name : 1,2-BIS(METHYLDIETHOXYSILYL)ETHANE
CAS No : 18043-74-8
EC no : 241-953-4

Name	Product identifier	%	Classification (GHS-US)
1,2-Bis(methyldiethoxysilyl)ethane	(CAS No) 18043-74-8	> 95	Flam. Liq. 4, H227 Eye Irrit. 2A, H319
1,1-Bis(methyldiethoxysilyl)ethane	(CAS No) Not found	< 5	Eye Irrit. 2A, H319
Ethanol	(CAS No) 64-17-5		Flam. Liq. 2, H225 Carc. 1A, H350 STOT SE 3, H335

3.2. Mixture

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 victim to fresh air and keep at rest in a position comfortable for breathing. If you feel unwell, seek medical advice.

First-aid measures after skin contact : Wash with plenty of soap and water.

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 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/injuries after inhalation : May cause irritation to the respiratory tract.

Symptoms/injuries after skin contact : May cause skin irritation.

Symptoms/injuries after eye contact : Causes serious eye irritation.

Symptoms/injuries after ingestion : No information available.

Chronic symptoms : On contact with water this compound liberates ethanol which is known to have a chronic effect on the central nervous system.

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 ethanol.

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.

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 vapor and mist.

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.

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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 vapor and mist. Provide good ventilation in process area to prevent accumulation of vapors. Take precautionary measures against static discharge. 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.

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

Ethanol (64-17-5)

USA ACGIH	ACGIH STEL (ppm)	1000 ppm
USA NIOSH	NIOSH REL (TWA) (mg/m ³)	1900 mg/m ³
USA NIOSH	NIOSH REL (TWA) (ppm)	1000 ppm
USA OSHA	OSHA PEL (TWA) (mg/m ³)	1900 mg/m ³
USA OSHA	OSHA PEL (TWA) (ppm)	1000 ppm
USA IDLH	US IDLH (ppm)	3300 ppm (10% LEL)

8.2. Exposure controls

Appropriate engineering controls : Provide local exhaust or general room ventilation.

Personal protective equipment : Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Avoid all unnecessary 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.

Respiratory protection : 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 : 294.54 g/mol

Color : No data available

Odor : Slight.

Odor threshold : No data available

Refractive index : 1.417

pH : No data available

Relative evaporation rate (butyl acetate=1) : No data available

Melting point : < 0 °C

Freezing point : No data available

Boiling point : 80 °C @ 1.5 mm Hg

Flash point : > 65 °C

Auto-ignition temperature : No data available

Decomposition temperature : No data available

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Flammability (solid, gas)	: Combustible liquid
Vapor pressure	: < 0.01 mm Hg @ 25 °C
Relative vapor density at 20 °C	: > 1
Relative density	: 0.92
VOC content	: < 5 %
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
Oxidizing 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 ethanol.

10.4. Conditions to avoid

Heat. Open flame. Sparks.

10.5. Incompatible materials

Oxidizing agent.

10.6. Hazardous decomposition products

Ethanol. Organic acid vapors. Silicon dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

Ethanol (64-17-5)

LC50 inhalation rat (mg/l)	124.7 mg/l/4h
ATE US (vapors)	124.700 mg/l/4h
ATE US (dust, mist)	124.700 mg/l/4h

Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Causes serious eye irritation.
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified This material was not mutagenic in an Ames bacterial assay.
Carcinogenicity	: Not classified

Ethanol (64-17-5)

IARC group	1 - Carcinogenic to humans
Reproductive toxicity	: Not classified
Specific target organ toxicity (single exposure)	: Not classified
Specific target organ toxicity (repeated exposure)	: Not classified
Aspiration hazard	: Not classified
Symptoms/injuries after inhalation	: May cause irritation to the respiratory tract.
Symptoms/injuries after skin contact	: May cause skin irritation.
Symptoms/injuries after eye contact	: Causes serious eye irritation.
Symptoms/injuries after ingestion	: No information available.
Chronic symptoms	: On contact with water this compound liberates ethanol which is known to have a chronic effect on the central nervous system.

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Reason for classification : Expert judgment

SECTION 12: Ecological information

12.1. Toxicity

Ethanol (64-17-5)	
LC50 fish 1	12.0 - 16.0 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [static])
EC50 Daphnia 1	9268 - 14221 mg/l (Exposure time: 48 h - Species: Daphnia magna)
LC50 fish 2	> 100 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])
EC50 Daphnia 2	2 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

Ethanol (64-17-5)	
Log Pow	-0.32

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Effect on ozone layer : No additional information available
Effect on the global warming : No known ecological damage caused by this product.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste 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

DOT NA no. : NA1993

14.2. UN proper shipping name

Proper Shipping Name (DOT) : Combustible liquid, n.o.s.
(1,2-BIS(METHYLDIETHOXYSILYL)ETHANE)

Department of Transportation (DOT) Hazard Classes : 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120

DOT Symbols : D - Proper shipping name for domestic use only, or to and from Canada,G - Identifies PSN requiring a technical name

Packing group (DOT) : III - Minor Danger

DOT Packaging Exceptions (49 CFR 173.xxx) : 150

DOT Packaging Non Bulk (49 CFR 173.xxx) : 203

DOT Packaging Bulk (49 CFR 173.xxx) : 241

14.3. Additional information

Other information : No supplementary information available.

Transport by sea

DOT Vessel Stowage Location : A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.

Air transport

DOT Quantity Limitations Passenger aircraft/rail : 60 L
(49 CFR 173.27)

DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 220 L

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SECTION 15: Regulatory information

15.1. US Federal regulations

1,2-BIS(METHYLDIETHOXYSILYL)ETHANE (18043-74-8)

TSCA Exemption/Exclusion

CAUTION: This material is supplied for research and development purposes subject to the R&D exemption under TSCA, 40 CFR 720.36, and must meet the requirements of the exemption, including supervision by a "technically qualified individual" as defined by 40 CFR 720.3(ee). The use of this material for "commercial purposes" as defined by 40 CFR 720.3(r) is not permitted in the United States.

Ethanol (64-17-5)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

1,2-Bis(methyldiethoxysilyl)ethane (18043-74-8)

Not listed on the United States TSCA (Toxic Substances Control Act) inventory

1,1-Bis(methyldiethoxysilyl)ethane (Not found)

Not listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

Ethanol (64-17-5)

Listed on IARC (International Agency for Research on Cancer)

Listed on the AICS (Australian Inventory of Chemical Substances)

Listed on the Canadian DSL (Domestic Substances List)

Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory

Listed on the Korean ECL (Existing Chemicals List)

Listed on NZIoC (New Zealand Inventory of Chemicals)

Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

Listed on the Canadian IDL (Ingredient Disclosure List)

1,2-Bis(methyldiethoxysilyl)ethane (18043-74-8)

Listed on the AICS (Australian Inventory of Chemical Substances)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Listed on the Japanese ISHL (Industrial Safety and Health Law)

1,1-Bis(methyldiethoxysilyl)ethane (Not found)

15.3. US State regulations

1,2-BIS(METHYLDIETHOXYSILYL)ETHANE(18043-74-8)

U.S. - California - Proposition 65 - Carcinogens List	No
U.S. - California - Proposition 65 - Developmental Toxicity	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Female	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No

Ethanol (64-17-5)

U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significance risk level (NSRL)
Yes	Yes	No	No	

1,2-Bis(methyldiethoxysilyl)ethane (18043-74-8)

U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significance risk level (NSRL)
No	No	No	No	

1,1-Bis(methyldiethoxysilyl)ethane (Not found)

U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significance risk level (NSRL)
No	No	No	No	

Ethanol (64-17-5)

U.S. - Connecticut - Hazardous Air Pollutants - HLVs (30 min)	
U.S. - Connecticut - Hazardous Air Pollutants - HLVs (8 hr)	
U.S. - Idaho - Non-Carcinogenic Toxic Air Pollutants - Acceptable Ambient Concentrations	

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Ethanol (64-17-5)

U.S. - Idaho - Non-Carcinogenic Toxic Air Pollutants - Emission Levels (ELs)
U.S. - Idaho - Occupational Exposure Limits - TWAs
U.S. - Maine - Chemicals of High Concern
U.S. - Massachusetts - Allowable Ambient Limits (AALs)
U.S. - Massachusetts - Allowable Threshold Concentrations (ATCs)
U.S. - Massachusetts - Oil & Hazardous Material List - Groundwater Reportable Concentration - Reporting Category 1
U.S. - Massachusetts - Oil & Hazardous Material List - Groundwater Reportable Concentration - Reporting Category 2
U.S. - Massachusetts - Oil & Hazardous Material List - Reportable Quantity
U.S. - Massachusetts - Oil & Hazardous Material List - Soil Reportable Concentration - Reporting Category 1
U.S. - Massachusetts - Oil & Hazardous Material List - Soil Reportable Concentration - Reporting Category 2
U.S. - Massachusetts - Right To Know List
U.S. - Massachusetts - Threshold Effects Exposure Limits (TELs)
U.S. - Michigan - Occupational Exposure Limits - TWAs
U.S. - Minnesota - Chemicals of High Concern
U.S. - Minnesota - Hazardous Substance List
U.S. - Minnesota - Permissible Exposure Limits - TWAs
U.S. - New Hampshire - Regulated Toxic Air Pollutants - Ambient Air Levels (AALs) - 24-Hour
U.S. - New Hampshire - Regulated Toxic Air Pollutants - Ambient Air Levels (AALs) - Annual
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - New Jersey - Special Health Hazards Substances List
U.S. - New York - Occupational Exposure Limits - TWAs
U.S. - North Dakota - Air Pollutants - Guideline Concentrations - 1-Hour
U.S. - Oregon - Permissible Exposure Limits - TWAs
U.S. - Pennsylvania - RTK (Right to Know) List
U.S. - Tennessee - Occupational Exposure Limits - TWAs
U.S. - Texas - City of Austin - Aerosol Paint and Glue Restrictions
U.S. - Texas - Effects Screening Levels - Long Term
U.S. - Texas - Effects Screening Levels - Short Term
U.S. - Vermont - Permissible Exposure Limits - TWAs
U.S. - Washington - Permissible Exposure Limits - STELs
U.S. - Washington - Permissible Exposure Limits - TWAs

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.

Full text of H-phrases::

Carc. 1A	Carcinogenicity Category 1A
Eye Irrit. 2A	Serious eye damage/eye irritation Category 2A
Flam. Liq. 2	Flammable liquids Category 2
Flam. Liq. 4	Flammable liquids Category 4
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
H225	Highly flammable liquid and vapor
H227	Combustible liquid
H319	Causes serious eye irritation
H335	May cause respiratory irritation
H350	May cause cancer

HMIS III Rating

Health : 2 Moderate Hazard - Temporary or minor injury may occur
Flammability : 2 Moderate Hazard
Physical : 1 Slight Hazard

Prepared by safety and environmental affairs.

Date of issue: 02/23/2015

Version: 1.0

SDS US (GHS HazCom 2012) - Custom

1,2-BIS(METHYLDIETHOXYSILYL)ETHANE

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According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

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