

**1,4-BIS(TRIETHOXSILYL)BENZENE**

Safety Data Sheet SIB1816.6

Date of issue: 12/03/2014

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 : 1,4-BIS(TRIETHOXSILYL)BENZENE
 Product code : SIB1816.6
 Formula : C₁₈H₃₄O₆Si₂
 Synonyms : p-BIS(TRIETHOXSILYL)BENZENE
 Chemical family : ORGANOETHOXSILANE

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

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)**

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) : Warning
 Hazard statements (GHS-US) : H319 - Causes serious eye irritation
 Precautionary statements (GHS-US) : P280 - Wear protective gloves/protective clothing/eye protection/face protection
 P264 - Wash hands thoroughly after handling
 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

2.3. Other hazards

Other hazards not contributing to the classification : The hydrolysis product of this compound is ethanol. 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

SECTION 3: Composition/information on ingredients**3.1. Substance**

Substance type : Mono-constituent
 Name : 1,4-BIS(TRIETHOXSILYL)BENZENE
 CAS No : 2615-18-1

Name	Product identifier	%	Classification (GHS-US)
1,4-Bis(triethoxysilyl)benzene	(CAS No) 2615-18-1	> 95	Eye Irrit. 2A, H319

1,4-BIS(TRIETHOXYSYLYL)BENZENE

Safety Data Sheet

Name	Product identifier	%	Classification (GHS-US)
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 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.

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. Alcohol-resistant foam. Carbon dioxide. Dry chemical.
Unsuitable extinguishing media	: None known.

5.2. Special hazards arising from the substance or mixture

Fire hazard	: 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.

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 vapor and mist. Provide good ventilation in process area to prevent accumulation of vapors. Containers must be properly grounded before beginning transfer.
-------------------------------	---

1,4-BIS(TRIETHOXYSYLYL)BENZENE

Safety Data Sheet

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 : 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 : 402.64 g/mol
Color : No data available
Odor : Slight.
Odor threshold : No data available
Refractive index : 1.4549
pH : No data available
Relative evaporation rate (butyl acetate=1) : No data available
Melting point : < 0 °C
Freezing point : No data available
Boiling point : 130 - 132 °C @ 0.4 mm Hg
Flash point : > 110 °C
Auto-ignition temperature : No data available
Decomposition temperature : No data available
Flammability (solid, gas) : No data available
Vapor pressure : < 0.1 mm Hg @ 25 °C
Relative vapor density at 20 °C : > 1
Relative density : 1.015
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

1,4-BIS(TRIETHOXYSYLYL)BENZENE

Safety Data Sheet

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. 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

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
Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Causes serious eye irritation.
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
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.
Reason for classification : Expert judgment

SECTION 12: Ecological information

12.1. Toxicity

Ethanol (64-17-5)

LC50 fish 1	12.0 - 16.0 ml/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
---------	-------

1,4-BIS(TRIETHOXSILYL)BENZENE

Safety Data Sheet

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.

Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

14.1. UN number

Not regulated for transport.

14.2. UN proper shipping name

Not applicable

14.3. Additional information

Other information : No supplementary information available.

Transport by sea

No additional information available

Air transport

No additional information available

SECTION 15: Regulatory information

15.1. US Federal regulations

1,4-BIS(TRIETHOXSILYL)BENZENE (2615-18-1)

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

1,4-Bis(triethoxysilyl)benzene (2615-18-1)

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)

1,4-Bis(triethoxysilyl)benzene (2615-18-1)

15.3. US State regulations

1,4-BIS(TRIETHOXSILYL)BENZENE(2615-18-1)

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

1,4-BIS(TRIETHOXSILYL)BENZENE

Safety Data Sheet

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	
1,4-Bis(triethoxysilyl)benzene (2615-18-1)				
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 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
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
H225	Highly flammable liquid and vapor
H319	Causes serious eye irritation
H335	May cause respiratory irritation
H350	May cause cancer

1,4-BIS(TRIETHOXSILYL)BENZENE

Safety Data Sheet

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: 12/03/2014 Version: 1.0

SDS US (GHS HazCom 2012) - Custom

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

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.

© 2014 Gelest Inc. Morrisville, PA 19067

