

Safety Data Sheet SIB1824.5

Issue date: 01/07/2015 Revision date: 11/03/2022 Version: 1.3

## **SECTION 1: Identification**

#### 1.1. Identification

Product name : BIS(3-TRIETHOXYSILYLPROPYL)AMINE, 95%

Product code : SIB1824.5
Product form : Substance
Physical state : Liquid

Formula : C18H43NO6Si2

Synonyms : 3,13-DIOXA-8-AZA-4,12-DISILAPENTADECANE, 4,4,12,12-TETRAETHOXY-; 1-

PROPANAMINE, 3-TRIETHOXYSILYL-N-(3-TRIETHOXYSILYL)PROPYL)

Chemical family : ORGANOETHOXYSILANE

#### 1.2. Recommended use and restrictions on use

Recommended use : Chemical intermediate

#### 1.3. Supplier

#### 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: Hazard(s) identification**

#### 2.1. Classification of the substance or mixture

#### **GHS US classification**

Skin corrosion/irritation Category 1C H314 Causes severe skin burns and eye damage

Serious eye damage/eye irritation Category 1 H318 Causes serious eye damage Specific target organ toxicity – Single exposure, H335 May cause respiratory irritation

Category 3, Respiratory tract irritation Full text of H statements : see section 16

## 2.2. GHS Label elements, including precautionary statements

#### **GHS US labeling**

Hazard pictograms (GHS US)





Signal word (GHS US) : Danger

Hazard statements (GHS US) : H314 - Causes severe skin burns and eye damage

H318 - Causes serious eye damage H335 - May cause respiratory irritation

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

P260 - Do not breathe vapors.

P264 - Wash hands thoroughly after handling.
P271 - Use only outdoors or in a well-ventilated area.

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P301+P330+P331 - If swallowed: rinse mouth. Do NOT induce vomiting

P303+P361+P353 - If on skin (or hair): take off immediately all contaminated clothing. rinse skin with water/shower

P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing. 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 doctor.

P363 - Wash contaminated clothing before reuse.

P403+P233 - Store in a well-ventilated place. Keep container tightly closed.

P405 - Store locked up.

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

#### 2.3. Hazards not otherwise classified (HNOC)

Other hazards which do not result in classification

: The hydrolysis product of this compound 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)

Not applicable

## **SECTION 3: Composition/Information on ingredients**

#### 3.1. Substances

Substance type : Multi-constituent

Name : BIS(3-TRIETHOXYSILYLPROPYL)AMINE, 95%

CAS-No. : 13497-18-2

Name	Product identifier	%	GHS US classification
Bis(3-triethoxysilylpropyl)amine	CAS-No.: 13497-18-2	> 90	Skin Corr. 1C, H314 Eye Dam. 1, H318 STOT SE 3, H335
3-Aminopropyltriethoxysilane	CAS-No.: 919-30-2	< 5	Acute Tox. 4 (Oral), H302 Skin Corr. 1B, H314 Eye Dam. 1, H318 STOT SE 3, H335

Full text of hazard classes and 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 soap and water.

First-aid measures after eye contact : Immediately flush eyes thoroughly with water for at least 15 minutes. Get medical

advice/attention.

First-aid measures after ingestion : Never give anything by mouth to an unconscious person. Get medical advice/attention.

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### 4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects : Causes severe skin burns and eye damage.

Symptoms/effects after inhalation : May cause respiratory irritation. Overexposure may cause: Coughing. 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.

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. Immediate medical attention and special treatment, if necessary

No additional information available

## **SECTION 5: Fire-fighting measures**

## 5.1. Suitable (and unsuitable) extinguishing media

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

#### 5.2. Specific hazards arising from the chemical

Fire hazard : Irritating fumes and organic acid vapors may develop when material is exposed to elevated

temperatures or open flame.

#### 5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions : Use water spray to cool exposed surfaces. 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.

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.

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#### 7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep container tightly closed.

Storage area : Store in a well-ventilated place. Store away from heat.

## **SECTION 8: Exposure controls/personal protection**

#### 8.1. Control parameters

No additional information available

#### 8.2. Appropriate engineering controls

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

## 8.3. Individual protection measures/Personal protective equipment

#### 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

#### Respiratory protection:

NIOSH-certified combination organic vapor - amine gas (brown 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 : 425.71 g/mol
Color : Straw.

Odor : Amine. Ammonia-like.
Odor threshold : No data available
pH : No data available

Relative evaporation rate (butyl acetate=1) : < 1

Melting point : No data available

Freezing point : < 0 °C

Boiling point :  $160 \, ^{\circ}\text{C} \, @ \, 0.6 \, \text{mm Hg}$ 

Flash point : 162 °C

Auto-ignition temperature : No data available
Decomposition temperature : No data available
Flammability (solid, gas) : No data available
Vapor pressure : < 0.1 mm Hg @ 100°C

Relative vapor density at  $20^{\circ}$ C : > 1 Relative density : 0.97

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 : 5.5 cSt

Viscosity, dynamic : No data available
Explosive properties : No data available
Oxidizing properties : No data available
Explosion limits : No data available

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#### 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 when stored in sealed containers.

### 10.3. Possibility of hazardous reactions

Reacts with water and moisture in air, liberating ethanol.

#### 10.4. Conditions to avoid

Heat. Sparks. Open flame.

#### 10.5. Incompatible materials

Acids. Alcohols. Moisture. Oxidizing agent. Peroxides. Water.

## 10.6. Hazardous decomposition products

Ethanol. Organic acid vapors.

## **SECTION 11: Toxicological information**

#### 11.1. Information on toxicological effects

Acute toxicity (oral) : Not classified
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Not classified

## BIS(3-TRIETHOXYSILYLPROPYL)AMINE, 95% (13497-18-2)

LD50 oral rat 1780 mg/kg

## 3-Aminopropyltriethoxysilane (919-30-2)

LD50 oral rat	1780 mg/kg
ATE US (oral)	1780 mg/kg body weight

Skin corrosion/irritation : Causes severe skin burns.
Serious eye damage/irritation : Causes serious eye damage.

Respiratory or skin sensitization : Not classified
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified
Reproductive toxicity : Not classified

STOT-single exposure : May cause respiratory irritation.

STOT-repeated exposure : Not classified
Aspiration hazard : Not classified

Symptoms/effects after inhalation : May cause respiratory irritation. Overexposure may cause: Coughing. 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.

Chronic symptoms : On contact with water this compound liberates ethanol which is known to have a chronic effect

on the central nervous system.

Reason for classification : Expert judgment

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## **SECTION 12: Ecological information**

## 12.1. Toxicity

No additional information available

## 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. Other adverse effects

Other adverse effects : This substance may be hazardous to the environment.

Effect on the ozone layer : No additional information available

## **SECTION 13: Disposal considerations**

## 13.1. Disposal methods

Product/Packaging disposal recommendations : May be incinerated. Dispose of contents/container to licensed waste disposal facility.. Dispose in a safe manner in accordance with local/national regulations.

Ecology - waste materials : Avoid release to the environment.

## **SECTION 14: Transport information**

In accordance with DOT / TDG / IMDG / IATA

DOT	TDG		IMDG	IATA
14.1. UN number				
2735	Not applicable		2735	2735
14.2. Proper Shipping Name				
Amines, liquid, corrosive, n.o.s. ((BIS(3- TRIETHOXYSILYLPROPYL)AMINE ))	Not applicable		AMINES, LIQUID, CORROSIVE, N.O.S. (BIS(3- TRIETHOXYSILYLPROPYL)AMINE )	Amines, liquid, corrosive, n.o.s. (BIS(3- TRIETHOXYSILYLPROPYL)AMINE )
Transport document description				
UN2735 Amines, liquid, corrosive, n.o.s. (BIS(3- TRIETHOXYSILYLPROPYL)AMINE ), 8, III	Not applicable		UN 2735 AMINES, LIQUID, CORROSIVE, N.O.S. (BIS(3- TRIETHOXYSILYLPROPYL)AMINE ), 8, III	UN 2735 Amines, liquid, corrosive, n.o.s. (BIS(3- TRIETHOXYSILYLPROPYL)AMINE ), 8, III
14.3. Transport hazard class(es)				
8	Not applicable		8	8
CORROSIVE 8	Not applicable		8	8

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DOT	TDG	IMDG	IATA	
14.4. Packing group				
III	Not applicable	III	III	
14.5. Environmental hazards				
Dangerous for the environment: No	Dangerous for the environment: No	Dangerous for the environment: No Marine pollutant: No	Dangerous for the environment: No	
No supplementary information available				

#### 14.6. Special precautions for user

**DOT** 

UN-No.(DOT) : UN2735

DOT Special Provisions (49 CFR 172.102) : IB3 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite

(31HZ1 and 31HA2, 31HB2, 31HN2, 31HD2 and 31HH2). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized, except for UN2672 (also see Special Provision IP8 in Table

2 for UN2672).

T7 - 4 178.274(d)(2) Normal..... 178.275(d)(3)

TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling = 97 / 1 + a (tr - tf) Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling.

TP28 - A portable tank having a minimum test pressure of 2.65 bar (265 kPa) may be used provided the calculated test pressure is 2.65 bar or less based on the MAWP of the hazardous material, as defined in 178.275 of this subchapter, where the test pressure is 1.5 times the MAWP.

DOT Packaging Exceptions (49 CFR 173.xxx) : 154
DOT Packaging Non Bulk (49 CFR 173.xxx) : 203
DOT Packaging Bulk (49 CFR 173.xxx) : 241
DOT Quantity Limitations Passenger aircraft/rail (49 : 5 L

CFR 173.27)

DOT Quantity Limitations Cargo aircraft only (49

CFR 175.75)

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

passenger vessel.

: 60 L

DOT Vessel Stowage Other : 52 - Stow "separated from" acids

TDG

Emergency Response Guide (ERG) Number : 153

**IMDG** 

Special provision (IMDG) : 223, 274

Limited quantities (IMDG) : 5 L

Excepted quantities (IMDG) : E1

Packing instructions (IMDG) : P001, LP01

IBC packing instructions (IMDG) : IBC03

Tank instructions (IMDG) : T7

Tank special provisions (IMDG) : TP1, TP28

EmS-No. (Fire) : F-A - FIRE SCHEDULE Alfa - GENERAL FIRE SCHEDULE

EmS-No. (Spillage) : S-B - SPILLAGE SCHEDULE Bravo - CORROSIVE SUBSTANCES

Stowage category (IMDG) : A Segregation (IMDG) : SG35

Properties and observations (IMDG) : Colourless to yellowish liquids or solutions with a pungent odour. Miscible with or soluble in

water. When involved in a fire, evolve toxic gases. Corrosive to most metals, especially to copper and its alloys. Reacts violently with acids. Cause burns to skin, eyes and mucous membranes.

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#### **IATA**

PCA Excepted quantities (IATA) : E1 PCA Limited quantities (IATA) Y841 PCA limited quantity max net quantity (IATA) 1L PCA packing instructions (IATA) 852 PCA max net quantity (IATA) 5L : 856 CAO packing instructions (IATA) CAO max net quantity (IATA) : 60L Special provision (IATA) : A3 ERG code (IATA) : 8L

## 14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

## **SECTION 15: Regulatory information**

## 15.1. US Federal regulations

Commercial status of components according to the United States Environmental Protection Agency's Toxic Substances Control Act (TSCA):

Name	CAS-No.	Listing	Commercial status	Flags
3-Aminopropyltriethoxysilane	919-30-2	Present	Active	
Bis(3-triethoxysilylpropyl)amine	13497-18-2	Present	Active	

#### 15.2. International regulations

#### CANADA

## 3-Aminopropyltriethoxysilane (919-30-2)

Listed on the Canadian DSL (Domestic Substances List)

## Bis(3-triethoxysilylpropyl)amine (13497-18-2)

Listed on the Canadian NDSL (Non-Domestic Substances List)

#### **EU-Regulations**

#### 3-Aminopropyltriethoxysilane (919-30-2)

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

## Bis(3-triethoxysilylpropyl)amine (13497-18-2)

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

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#### **National regulations**

#### 3-Aminopropyltriethoxysilane (919-30-2)

Listed introduction on Australian Industrial Chemicals Introduction Scheme (AICIS Inventory)

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

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

Listed on KECL/KECI (Korean Existing Chemicals Inventory)

Listed on NZIoC (New Zealand Inventory of Chemicals)

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

Listed on INSQ (Mexican National Inventory of Chemical Substances)

Listed on CICR (Turkish Inventory and Control of Chemicals)

Listed on the TCSI (Taiwan Chemical Substance Inventory)

Listed on TECI (Thailand Existing Chemicals Inventory)

Listed on the NCI (Vietnam - National Chemical Inventory)

## Bis(3-triethoxysilylpropyl)amine (13497-18-2)

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

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

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

Listed on KECL/KECI (Korean Existing Chemicals Inventory)

Listed on the TCSI (Taiwan Chemical Substance Inventory)

Listed on the NCI (Vietnam - National Chemical Inventory)

Listed on TECI (Thailand Existing Chemicals Inventory)

#### 15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

#### **SECTION 16: Other information**

### Full text of H-phrases::

H302	Harmful if swallowed	
H314	Causes severe skin burns and eye damage	
H318	Causes serious eye damage	
H335	May cause respiratory irritation	

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.: Chemcial 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.

Hazard Rating

Health

: 3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given

Flammability

: 1 Slight Hazard - Materials that must be preheated before ignition will occur. Includes liquids, solids and semi solids having a flash point above 200 F. (Class IIIB)

Physical

: 1 Slight Hazard - Materials that are normally stable but can become unstable (self-react) at high temperatures and pressures. Materials may react non-violently with water or undergo hazardous polymerization in the absence of inhibitors.

Prepared by safety and environmental affairs.

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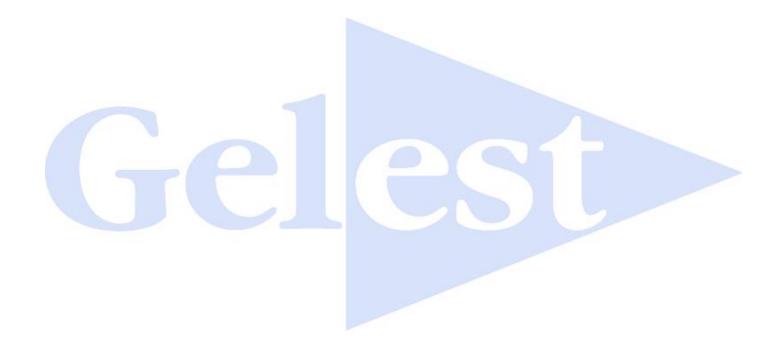
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SDS US (GHS HazCom 2012) - Custom

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

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