

**2-(3,4-EPOXYCYCLOHEXYL)ETHYLTRIETHOXSILANE**

Safety Data Sheet SIE4668.0

Issue date: 01/06/2015

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Version: 2.1

SECTION 1: Identification**1.1. Identification**

Product name	: 2-(3,4-EPOXYCYCLOHEXYL)ETHYLTRIETHOXSILANE
Product code	: SIE4668.0
Product form	: Substance
Physical state	: Liquid
Formula	: C ₁₄ H ₂₈ O ₄ Si
Synonyms	: (2-TRIETHOXSILYLETHYL)CYCLOHEXYLOXIRANE
Chemical family	: ORGANOEPOXSILANE

1.2. Recommended use and restrictions on use

Recommended use	: Chemical intermediate
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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)
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SECTION 2: Hazard(s) identification**2.1. Classification of the substance or mixture****GHS US classification**

Skin sensitization, Category 1	H317	May cause an allergic skin reaction
Hazardous to the aquatic environment – Chronic	H412	Harmful to aquatic life with long lasting effects
Hazard Category 3		
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)

: Warning

Hazard statements (GHS US)

: H317 - May cause an allergic skin reaction
H412 - Harmful to aquatic life with long lasting effects

Precautionary statements (GHS US)

: P261 - Avoid breathing vapors.
P272 - Contaminated work clothing must not be allowed out of the workplace.
P273 - Avoid release to the environment.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352 - If on skin: Wash with plenty of water.
P321 - Specific treatment (see supplemental first aid instruction on this label).
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.

2-(3,4-EPOXYCYCLOHEXYL)ETHYLTRIETHOXYSIANE

Safety Data Sheet

P363 - Wash contaminated clothing before reuse.

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 : This product reacts with water in the acid contents of the stomach to form ethanol. 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 : Mono-constituent
Name : 2-(3,4-EPOXYCYCLOHEXYL)ETHYLTRIETHOXYSIANE
CAS-No. : 10217-34-2

Name	Product identifier	%	GHS US classification
2-(3,4-Epooxycyclohexyl)ethyltriethoxysilane	CAS-No.: 10217-34-2	97 – 100	Skin Sens. 1, H317 Aquatic Chronic 3, H412

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 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. Get 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 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 (acute and delayed)

Symptoms/effects after inhalation : May cause irritation to the respiratory tract. Overexposure may cause: Cough. Headache. Nausea.

Symptoms/effects after skin contact : May cause an allergic skin reaction. May cause skin irritation.

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

Symptoms/effects after ingestion : May be harmful if swallowed.

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.

2-(3,4-EPOXYCYCLOHEXYL)ETHYLTRIETHOXYSIANE

Safety Data Sheet

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.
Reactivity	: Can react exothermically with amines.

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.
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6.1.2. For emergency responders

Protective equipment	: Equip cleanup crew with proper protection.
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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.
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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	: Use only in well ventilated areas. Avoid all eye and skin contact and do not breathe vapor and mist.
Hygiene measures	: Wash contaminated clothing before reuse. Wash hands thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions	: Keep container tightly closed.
Incompatible materials	: Amines. Moisture. Water.
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.
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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.

2-(3,4-EPOXYCYCLOHEXYL)ETHYLTRIETHOXYSIANE

Safety Data Sheet

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	: 288.46 g/mol
Color	: Straw.
Odor	: Mild.
Odor threshold	: No data available
pH	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Melting point	: No data available
Freezing point	: < 0 °C
Boiling point	: 114 – 117 °C @ 0.4 mm Hg
Flash point	: 104 °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
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
Oxidizing properties	: No data available
Explosion limits	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Can react exothermically with amines.

10.2. Chemical stability

Stable in sealed containers.

10.3. Possibility of hazardous reactions

Reacts with water and moisture in air, liberating ethanol. Can polymerize (non-hazardous) in the presence of weak acids.

10.4. Conditions to avoid

Heat. Open flame. Sparks.

2-(3,4-EPOXYCYCLOHEXYL)ETHYLTRIETHOXSILANE

Safety Data Sheet

10.5. Incompatible materials

Amines. Moisture. 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

2-(3,4-Epoxy cyclohexyl)ethyltriethoxysilane (10217-34-2)

LD50 oral rat	> 5000 mg/kg
LD50 dermal rabbit	> 2000 mg/kg

Skin corrosion/irritation : Not classified
Serious eye damage/irritation : Not classified
Respiratory or skin sensitization : May cause an allergic skin reaction.
OECD Test Guideline 406 (Guinea Pig)Sensitizer
Germ cell mutagenicity : Not classified
The related compound, epoxycyclohexyltriethoxysilane, was negative in a Salmonella/
Eschereichia Coli mutagenicity assay.
The material was mutagenic in a chromosome aberration study in cultured peripheral human
lymphocytes.
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. Overexposure may cause: Cough. Headache.
Nausea.
Symptoms/effects after skin contact : May cause an allergic skin reaction. May cause skin irritation.
Symptoms/effects after eye contact : Causes serious eye irritation.
Symptoms/effects after ingestion : May be harmful if swallowed.

SECTION 12: Ecological information

12.1. Toxicity

2-(3,4-Epoxy cyclohexyl)ethyltriethoxysilane (10217-34-2)

LC50 - Fish [1]	3.41 mg/l Source: Episuite
EC50 - Crustacea [1]	58 mg/l Daphnia magna
LC50 - Fish [2]	42.3 mg/l Common Carp
EC50 96h - Algae [1]	1.074 mg/l Source: Episuite
ErC50 algae	108 mg/l Selenastrum capricornutum
NOEC chronic crustacea	32 mg/l Daphnia magna: 48h
NOEC chronic algae	6 mg/l Selenastrum capricornutum

2-(3,4-EPOXYCYCLOHEXYL)ETHYLTRIETHOXYSIANE

Safety Data Sheet

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

2-(3,4-Epoxy cyclohexyl)ethyltriethoxysilane (10217-34-2)

Partition coefficient n-octanol/water (Log Pow)	2.54 Source: Episuite
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12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Other adverse effects	: Harmful to aquatic life if released to open waters.
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 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

In accordance with DOT / TDG / IMDG / IATA

DOT	TDG	IMDG	IATA
14.1. UN number			
Not regulated for transport			
14.2. Proper Shipping Name			
Not applicable	Not applicable	Not applicable	Not applicable
Transport document description			
Not applicable	Not applicable	Not applicable	Not applicable
14.3. Transport hazard class(es)			
Not applicable	Not applicable	Not applicable	Not applicable
14.4. Packing group			
Not applicable	Not applicable	Not applicable	Not applicable
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

No data available

TDG

No data available

2-(3,4-EPOXYCYCLOHEXYL)ETHYLTRIETHOXYSIANE

Safety Data Sheet

IMDG

No data available

IATA

No data available

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
2-(3,4-Epoxy cyclohexyl)ethyltriethoxysilane	10217-34-2	Present	Active	P

15.2. International regulations

CANADA

2-(3,4-Epoxy cyclohexyl)ethyltriethoxysilane (10217-34-2)

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

EU-Regulations

2-(3,4-Epoxy cyclohexyl)ethyltriethoxysilane (10217-34-2)

Listed on ELINCS (European List of Notified Chemical Substances)

National regulations

2-(3,4-Epoxy cyclohexyl)ethyltriethoxysilane (10217-34-2)

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 NZIoC (New Zealand Inventory of Chemicals)
Listed on the TCSI (Taiwan Chemical Substance Inventory)
Listed on the NCI (Vietnam - National Chemical 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::

H317	May cause an allergic skin reaction
H412	Harmful to aquatic life with long lasting effects

2-(3,4-EPOXYCYCLOHEXYL)ETHYLTRIETHOXYSIANE

Safety Data Sheet

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.

Hazard Rating

Health

: 2 Moderate Hazard - Temporary or minor injury may occur

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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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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