

Safety Data Sheet SIT7282.0

Issue date: 06/09/2017 Revision date: 26/10/2021 Version: 1.1

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Substance
Physical state : Liquid

Substance name : TETRAKIS(ETHOXY)SILANE, tech-95

Product code : SIT7282.0
Formula : C16H36O8Si

Synonyms : SILICON TETRAETHOXYETHOXIDE TETRAETHOXYETHYL ORTHOSILICATE

TETRAKIS(2-ETHOXYETHYL) ORTHOSILICATE SILICIC ACID, TETRAKIS(2-ETHOXYETHYL) ESTER

Chemical family : SILICATE ESTER

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

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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]

Serious eye damage/eye irritation, Category 2 H319
Reproductive toxicity, Category 1B H360

Full text of H- and EUH-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)

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GHS07

EN (English)



GHS08

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Signal word (CLP) : Danger

Hazard statements (CLP) : H319 - Causes serious eye irritation.

H360 - May damage fertility or the unborn child.

Precautionary statements (CLP) : P202 - Do not handle until all safety precautions have been read and understood.

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.

P308+P313 - IF exposed or concerned: Get medical advice/attention.

P405 - Store locked up.

2.3. Other hazards

SECTION 3: Composition/information on ingredients

3.1. Substances

Substance type : Multi-constituent

Name : TETRAKIS(ETHOXY)SILANE, tech-95

CAS-No. : 18407-94-8 EC-No. : 242-287-7

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Tetrakis(ethoxyethoxy)silane	(CAS-No.) 18407-94-8 (EC-No.) 242-287-7	> 90	Eye Irrit. 2, H319
2-Ethoxyethanol substance listed as REACH Candidate	(CAS-No.) 110-80-5 (EC-No.) 203-804-1 (EC Index-No.) 603-012-00-X	< 5	Flam. Liq. 3, H226 Acute Tox. 4 (Oral), H302 Acute Tox. 3 (Inhalation:vapour), H331 Repr. 1B, H360FD
Ethoxy[tris(ethoxyethoxy)]silane	(CAS-No.) not found	< 5	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. IF exposed or concerned: Get medical advice/attention.

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 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, both acute and delayed

Symptoms/effects : May damage fertility or the unborn child.

Symptoms/effects after inhalation : 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.

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

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. Foam. Carbon dioxide. Dry chemical.

Unsuitable extinguishing media : None known.

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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.

Advice for firefighters

: Exercise caution when fighting any chemical fire. Use water spray or fog for cooling exposed Firefighting instructions

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

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Protective equipment : Wear protective equipment as described in Section 8.

Emergency procedures : Evacuate unnecessary personnel.

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".

Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

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.

Methods for cleaning up : Clean up any spills as soon as possible, using an absorbent material to collect it.

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 : Obtain special instructions before use. Do not handle until all safety precautions have been

read and understood. Avoid all eye and skin contact and do not breathe vapour and mist.

Provide good ventilation in process area to prevent formation of vapour.

Wash contaminated clothing before reuse. Wash hands and other exposed areas with mild Hygiene measures

soap and water before eating, drinking or smoking and when leaving work.

7.2. Conditions for safe storage, including any incompatibilities

: Keep container tightly closed. Store locked up. Storage conditions

Incompatible materials : Oxidizing agent.

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

Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

Control parameters

2-Ethoxyethanol (110-80-5)		
EU	IOEL TWA	8 mg/m³
EU	IOEL TWA [ppm]	2 ppm
Austria	MAK (OEL TWA)	8 mg/m³
Austria	MAK (OEL TWA) [ppm]	2 ppm
Austria	MAK (OEL STEL)	32 mg/m³
Austria	MAK (OEL STEL) [ppm]	8 ppm
Belgium	OEL TWA	8 mg/m³
Belgium	OEL TWA [ppm]	2 ppm
Bulgaria	OEL TWA	8 mg/m³
Bulgaria	OEL TWA [ppm]	2 ppm
Cyprus	OEL TWA	8 mg/m³
Cyprus	OEL TWA [ppm]	2 ppm
France	VME (OEL TWA)	8 mg/m³ (restrictive limit)
France	VME (OEL TWA) [ppm]	2 ppm (restrictive limit)

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2-Ethoxyethanol (110-80-5)		
Germany	AGW (OEL TWA) [1]	7.6 mg/m³ (The risk of damage to the embryo or fetus
,	,,,,	cannot be excluded even when AGW and BGW values are observed)
Germany	AGW (OEL TWA) [2]	2 ppm (The risk of damage to the embryo or fetus
		cannot be excluded even when AGW and BGW values are observed)
Germany	Biological limit value	50 mg/l (Medium: urine - Time: end of several shifts -
		Parameter: Ethoxyacetic acid (for long-term exposures)
Gibraltar	OEL TWA	8 mg/m³
Gibraltar	OEL TWA [ppm]	2 ppm
Greece	OEL TWA	8 mg/m³
Greece	OEL TWA [ppm]	2 ppm
Italy - Portugal - USA ACGIH	ACGIH OEL TWA [ppm]	5 ppm
Italy	OEL TWA	8 mg/m³
Italy	OEL TWA [ppm]	2 ppm
Latvia	OEL TWA	8 mg/m³
Latvia	OEL TWA [ppm]	2 ppm
USA IDLH	IDLH [ppm]	500 ppm
USA NIOSH	NIOSH REL TWA	1.8 mg/m ³
USA NIOSH	NIOSH REL TWA [ppm]	0.5 ppm
USA OSHA	OSHA PEL TWA [1]	740 mg/m³
USA OSHA	OSHA PEL TWA [2]	200 ppm
Spain	VLA-ED (OEL TWA) [1]	8 mg/m³ (indicative limit value)
Spain	VLA-ED (OEL TWA) [2]	2 ppm (indicative limit value)
Switzerland	KZGW (OEL STEL)	60 mg/m ³
Switzerland	KZGW (OEL STEL) [ppm]	16 ppm
Switzerland	MAK (OEL TWA) [1]	7.5 mg/m³
Switzerland	MAK (OEL TWA) [2]	2 ppm
Netherlands United Kingdom	TGG-8u (OEL TWA) WEL TWA (OEL TWA) [1]	8 mg/m³ 8 mg/m³
United Kingdom	WEL TWA (OEL TWA) [1] WEL TWA (OEL TWA) [2]	2 ppm
United Kingdom	WEL STEL (OEL STEL)	24 mg/m³ (calculated)
United Kingdom	WEL STEL (OEL STEL) [ppm]	6 ppm (calculated)
Czech Republic	PEL (OEL TWA)	8 mg/m³
Denmark	OEL TWA [1]	8 mg/m³
Denmark	OEL TWA [2]	2 ppm
Finland	HTP (OEL TWA) [1]	7.5 mg/m ³
Finland	HTP (OEL TWA) [2]	2 ppm
Hungary	AK (OEL TWA)	8 mg/m³
Ireland	OEL TWA [1]	8 mg/m³
Ireland	OEL TWA [2]	2 ppm
Ireland	OEL STEL	24 mg/m³ (calculated)
Ireland	OEL STEL [ppm]	6 ppm (calculated)
Lithuania	IPRV (OEL TWA)	8 mg/m³
Lithuania	IPRV (OEL TWA) [ppm]	2 ppm
Lithuania	TPRV (OEL STEL)	40 mg/m³
Lithuania	TPRV (OEL STEL) [ppm]	10 ppm
Malta	OEL TWA	8 mg/m³
Malta	OEL TWA [ppm]	2 ppm
Norway	Grenseverdi (OEL TWA) [1]	8 mg/m³
Norway	Grenseverdi (OEL TWA) [2]	2 ppm
Norway	Korttidsverdi (OEL STEL)	8 mg/m³

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2-Ethoxyethanol (110-80-5)		
Norway	Korttidsverdi (OEL STEL) [ppm]	2 ppm
Poland	NDS (OEL TWA)	8 mg/m³
Romania	OEL TWA	8 mg/m³
Romania	OEL TWA [ppm]	2 ppm
Slovakia	NPHV (OEL TWA) [1]	19 mg/m³
Slovakia	NPHV (OEL TWA) [2]	5 ppm
Slovakia	NPHV (OEL C)	152 mg/m³
Sweden	NGV (OEL TWA)	19 mg/m³
Sweden	NGV (OEL TWA) [ppm]	5 ppm
Sweden	KTV (OEL STEL)	40 mg/m³
Sweden	KTV (OEL STEL) [ppm]	10 ppm
Canada (Quebec)	VEMP (OEL TWA)	18 mg/m³
Canada (Quebec)	VEMP (OEL TWA) [ppm]	5 ppm
Australia	OES TWA [1]	18 mg/m³
Australia	OES TWA [2]	5 ppm
Portugal	OEL TWA	8 mg/m³ (indicative limit value)
Portugal	OEL TWA [ppm]	2 ppm (indicative limit value)
Portugal	OEL chemical category	skin - potential for cutaneous exposure indicative limit value

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:

Wear gloves impervious to the chemical substance.

Eye protection:

Chemical goggles. Contact lenses should not be worn

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

NIOSH-certified air-purifying full facepiece respirator with an assigned protection factor (APF) of 50 in accordance with OSHA 29 CFR 1910.134.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid

Appearance : Clear liquid.

Molecular mass : 384.54 g/mol

Colour : No data available

Odour : characteristic.

Odour threshold : No data available

Refractive index : 1.422

pH : No data available Relative evaporation rate (butylacetate=1) : No data available

Melting point : < 0 °C

Freezing point : No data available
Boiling point : 200 °C @ 0.1 mm Hg

Flash point : 131 °C

Auto-ignition temperature : No data available

Decomposition temperature : No data available

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Flammability (solid, gas) : No data available

Vapour pressure : < 0.1 mm Hg @ 25°C

Relative vapour density at 20 °C : > 4 Relative density : 1.02 % Volatiles : < 1 %

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

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Stable.

10.3. Possibility of hazardous reactions

Material decomposes slowly in contact with moist air or with water liberating ethoxyethanol.

10.4. Conditions to avoid

Heat. Sparks. Open flame.

10.5. Incompatible materials

Oxidizing agent.

10.6. Hazardous decomposition products

Ethoxyethanol. Organic acid vapors. Silicon dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

2-Ethoxyethanol (110-80-5)	
LD50 oral rat	2800 mg/kg
LD50 dermal rabbit	3300 mg/kg
LC50 Inhalation - Rat [ppm]	4267 ppm/4h
ATE CLP (oral)	500 mg/kg bodyweight
ATE CLP (dermal)	3300 mg/kg bodyweight
ATE CLP (gases)	4267 ppmv/4h
ATE CLP (vapours)	3 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 : May damage fertility or the unborn child.

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

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Potential adverse human health effects and

symptoms

Note: The hydrolysis product of this product is ethoxyethanol (ethylenegylycol, ethyl ether). Ethoxyethanol has been found to affect female and male reproductive systems. Additional laboratory studies with ethoxyethanol observed birth defects, fetotoxicity, embryoletality, immunosuppression and damage to male reproductive tissues. Material generates ethoxyethanol on contact with water or moisture in skin, eyes and mucous membranes and has an irritating, dehydrating effect on overexposed tissue.

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

Reason for classification : Expert judgment

SECTION 12: Ecological information

12.1. **Toxicity**

Hazardous to the aquatic environment, short-

: Not classified

term (acute)

Hazardous to the aquatic environment, long-

: Not classified

term (chronic)

2-Ethoxyethanol (110-80-5)	
LC50 - Fish [1]	> 10000 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [static])
EC50 - Crustacea [1]	> 10000 mg/l (Exposure time: 48 h - Species: Daphnia magna)
LC50 - Fish [2]	> 0.1 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])

Persistence and degradability

No additional information available

Bioaccumulative potential

2-Ethoxyethanol (110-80-5)		
Partition coefficient n-octanol/water (Log Pow)	-0.1	

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

Component	
(110-80-5)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII
	This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

Other adverse effects

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

SECTION 13: Disposal considerations

Waste treatment methods

Sewage disposal recommendations : Do not dispose of waste into sewer.

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

UN number

In accordance with ADR / IMDG / IATA / ADN / RID

UN number

UN-No. (ADR) : Not applicable UN-No. (IMDG) : Not applicable UN-No. (IATA) : Not applicable UN-No. (ADN) : Not applicable UN-No. (RID) : Not applicable

UN proper shipping name

Proper Shipping Name (ADR) : Not applicable Proper Shipping Name (IMDG) : Not applicable Proper Shipping Name (IATA) : Not applicable Proper Shipping Name (ADN) : Not applicable

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Proper Shipping Name (RID) : Not applicable

14.3. Transport hazard class(es)

ADR

Transport hazard class(es) (ADR) : Not applicable

IMDG

Transport hazard class(es) (IMDG) : Not applicable

IATA

Transport hazard class(es) (IATA) : Not applicable

ADN

Transport hazard class(es) (ADN) : Not applicable

RID

Transport hazard class(es) (RID) : Not applicable

14.4. Packing group

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

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

Not applicable

- Transport by sea

Not applicable

- Air transport

Not applicable

- Inland waterway transport

Not applicable

- Rail transport

Not applicable

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

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

TETRAKIS(ETHOXYETHOXY)SILANE, tech-95 is not on the REACH Candidate List

Contains a substance on the REACH candidate list in concentration ≥ 0.1% or with a lower specific limit: 2-Ethoxyethanol (EC 203-804-1, CAS 110-80-5)

TETRAKIS(ETHOXYETHOXY)SILANE, tech-95 is not on the REACH Annex XIV List

TETRAKIS(ETHOXY)SILANE, 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.

TETRAKIS(ETHOXY)SILANE, 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

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% Volatiles : < 1 %

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. BlmSchV) : Is not subject of the 12. BlmSchV (Hazardous Incident Ordinance)

Netherlands

SZW-lijst van kankerverwekkende stoffen : The substance is not listed SZW-lijst van mutagene stoffen : The substance is not listed SZW-lijst van reprotoxische stoffen - : The substance is not listed

Borstvoeding

SZW-lijst van reprotoxische stoffen -

Vruchtbaarheid

: The substance is not listed

SZW-lijst van reprotoxische stoffen -

Ontwikkeling

: The substance is not listed

Denmark

Danish National Regulations : Young people below the age of 18 years are not allowed to use the product

Pregnant/breastfeeding women working with the product must not be in direct contact with 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.: 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

Other information

: Prepared by safety and environmental affairs.

Full text of H- and EUH-statements:

Acute Tox. 3 (Inhalation:vapour)	Acute toxicity (inhalation:vapour) Category 3
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Flam. Liq. 3	Flammable liquids, Category 3
H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H360	May damage fertility or the unborn child.
H360FD	May damage fertility. May damage the unborn child.
Repr. 1B	Reproductive toxicity, Category 1B

SDS EU (REACH Annex II) - Custom

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.

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