

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878 Issue date: 2/18/2015 Revision date: 1/16/2024 Version: 3.2

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

1.1. Product identifier

Product form : Substance

Substance name : VINYLTRIS(METHYLETHYLKETOXIMINO)SILANE, tech-95

 EC-No.
 : 218-747-8

 CAS-No.
 : 2224-33-1

 Product code
 : SIV9280.0

 Formula
 : C14H27N3O3Si

Synonyms : TRIS(METHYLETHYLKETOXIMINO)VINYLSILANE

Product group : Trade product
Chemical family : ORGANOSILANE

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

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 according to Regulation (EC) No. 1272/2008 [CLP]

Skin corrosion/irritation, Category 2H315Serious eye damage/eye irritation, Category 2H319Skin sensitisation, Category 1H317Carcinogenicity, Category 1BH350

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)





GHS07

GHS08

Signal word (CLP) : Danger

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Hazard statements (CLP) : H315 - Causes skin irritation.

H317 - May cause an allergic skin reaction. H319 - Causes serious eye irritation.

H350 - May cause cancer.

Precautionary statements (CLP) : P201 - Obtain special instructions before use.

P202 - Do not handle until all safety precautions have been read and understood.

P261 - Avoid breathing vapours.

P264 - Wash hands thoroughly after handling.

P272 - Contaminated work clothing should not be allowed out of the workplace.

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

protection.

2.3. Other hazards

Contains no PBT and/or vPvB substances ≥ 0.1% assessed in accordance with REACH Annex XIII

SECTION 3: Composition/information on ingredients

3.1. Substances

Substance type : Multi-constituent

Name : VINYLTRIS(METHYLETHYLKETOXIMINO)SILANE, tech-95

CAS-No. : 2224-33-1 EC-No. : 218-747-8

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]	
Vinyltrismethylethylketoximesilane	CAS-No.: 2224-33-1 EC-No.: 218-747-8	95 – 100	Skin Irrit. 2, H315 Eye Irrit. 2, H319	
Methylethylketoxime	CAS-No.: 96-29-7 EC-No.: 202-496-6 EC Index-No.: 616-014-00-0	0.1 – 1	Acute Tox. 3 (Oral), H301 Acute Tox. 4 (Dermal), H312 Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1B, H350 STOT SE 1, H370 STOT SE 3, H336 STOT RE 2, H373	
Toluene	CAS-No.: 108-88-3 EC-No.: 203-625-9 EC Index-No.: 601-021-00-3 REACH-no: 01-2119471310- 51-0127	0.1 – 1	Flam. Liq. 2, H225 Acute Tox. 4 (Inhalation:vapour), H332 Skin Irrit. 2, H315 Repr. 2, H361d STOT SE 3, H336 STOT RE 2, H373 Asp. Tox. 1, H304	

Full text of H- and EUH-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 water/.... Get medical advice/attention.

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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 cause cancer. Suspected of damaging fertility. Suspected of damaging the unborn

child.

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

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

Symptoms/effects after eye contact : Causes serious eye damage. 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. Foam. Carbon dioxide. Dry chemical.

Unsuitable extinguishing media : Do not use straight streams.

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 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 vapour and mist.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Remove ignition sources. Use special care to avoid static electric charges.

6.1.1. For non-emergency personnel

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

Emergency procedures : Evacuate unnecessary personnel.

6.1.2. 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".

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

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. Sweep or

shovel spills into appropriate container for disposal. Use only non-sparking tools.

6.4. Reference to other sections

See Section 8. Exposure controls and personal protection.

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SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No

smoking.

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. Ground/bond container and receiving equipment. Provide good ventilation in process area

to prevent formation of vapour. Use only non-sparking tools.

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

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

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep container tightly closed. Keep in a cool place. Store locked up.

Incompatible materials : Oxidizing agent. Peroxides. Strong acids.

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

8.1.1 National occupational exposure and biological limit values

Toluene (108-88-3)				
EU - Indicative Occupational Exposure Limit (IOEL)				
Local name	Toluene			
IOEL TWA	192 mg/m³			
	50 ppm			
IOEL STEL	384 mg/m³			
	100 ppm			
Remark	Skin			
Regulatory reference	COMMISSION DIRECTIVE 2006/15/EC			

8.1.2. Recommended monitoring procedures

No additional information available

8.1.3. Air contaminants formed

No additional information available

8.1.4. DNEL and PNEC

No additional information available

8.1.5. Control banding

No additional information available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Appropriate engineering controls:

Provide local exhaust or general room ventilation.

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8.2.2. Personal protection 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.

8.2.2.1. Eye and face protection

Eye protection:

Chemical goggles. Contact lenses should not be worn

8.2.2.2. Skin protection

Skin and body protection:

Wear suitable protective clothing

Hand protection:

Neoprene or nitrile rubber gloves

8.2.2.3. Respiratory protection

Respiratory protection:

Where exposure through inhalation may occur from use, respiratory protection equipment is recommended. NIOSH-certified combination organic vapor - amine gas (brown cartridge) respirator.

8.2.2.4. Thermal hazards

No additional information available

8.2.3. Environmental exposure controls

No additional information available

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid
Colour : Straw.
Appearance : Clear liquid.
Molecular mass : 313.47 g/mol
Odour : Mild.
Odour threshold : Not available

Odour threshold : Not available

Melting point : Not available

Freezing point : -22 °C

Boiling point : 113 °C @ 0.1 mm Hg

Flammability : Combustible liquid **Explosive limits** : Not available Lower explosion limit : Not available Upper explosion limit : Not available : 90 °C Flash point Auto-ignition temperature : Not available : Not available Decomposition temperature : Not available pН : Not available Viscosity, kinematic Solubility · Insoluble in water Partition coefficient n-octanol/water (Log Kow) Not available

Vapour pressure : < 0.1 mm Hg @ 25°C Vapour pressure at 50°C : Not available

Density : Not available Relative density : 0.982 Relative vapour density at 20°C : > 1

Particle characteristics : Not applicable

9.2. Other information

9.2.1. Information with regard to physical hazard classes

No additional information available

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9.2.2. Other safety characteristics

Refractive index : 1.465

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

No additional information available

10.4. Conditions to avoid

Open flame. Heat. Sparks.

10.5. Incompatible materials

Oxidizing agent. Peroxides. Strong acids.

10.6. Hazardous decomposition products

Organic acid vapors.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

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

Methy	lethy	Iketoxime ((96-29-7)
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LD50 oral rat	930 mg/kg
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Toluene (108-88-3)	
LD50 oral rat	2600 mg/kg
LD50 dermal rabbit	12000 mg/kg
LC50 Inhalation - Rat	12.5 mg/l/4h
LC50 Inhalation - Rat (Vapours)	> 20 mg/l Source: ECHA

Skin corrosion/irritation : Causes skin irritation. Serious eye damage/irritation : Causes serious eye irritation. Respiratory or skin sensitisation : May cause an allergic skin reaction.

Germ cell mutagenicity : Not classified Carcinogenicity : May cause cancer.

Toluene (108-88-3)

IARC group	3 - Not classifiable
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Reproductive toxicity : Not classified STOT-single exposure : Not classified

Methylethylketoxime (96-29-7)

STOT-single exposure Causes damage to organs. May cause drowsiness or dizziness.

Toluene (108-88-3)

STOT-single exposure May cause drowsiness or dizziness.

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STOT-repeated exposure :	Not classified
Methylethylketoxime (96-29-7)	
STOT-repeated exposure	May cause damage to organs through prolonged or repeated exposure.
Toluene (108-88-3)	
LOAEL (oral, rat, 90 days)	1250 mg/kg bodyweight Animal: rat, Guideline: EU Method B.26 (Sub-Chronic Oral Toxicity Test: Repeated Dose 90-Day Oral Toxicity Study in Rodents)
NOAEL (oral, rat, 90 days)	625 mg/kg bodyweight Animal: rat, Guideline: EU Method B.26 (Sub-Chronic Oral Toxicity Test: Repeated Dose 90-Day Oral Toxicity Study in Rodents)
NOAEC (inhalation, rat, vapour, 90 days)	2.355 mg/l air Animal: rat, Guideline: EU Method B.29 (Sub-Chronic Inhalation Toxicity:90-Day Study)
STOT-repeated exposure	May cause damage to organs through prolonged or repeated exposure.
Aspiration hazard :	Not classified

11.2. Information on other hazards

No additional information available

Toluene (108-88-3)

Viscosity, kinematic

SECTION 12: Ecological information

12.1. Toxicity

Hazardous to the aquatic environment, short-term

(chronic)

: Not classified

65 mm²/s

Hazardous to the aquatic environment, long-term : Not classified

Methylethylketoxime (96-29-7)		
LC50 - Fish [1]	777 – 914 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])	
LC50 - Fish [2]	760 mg/l (Exposure time: 96 h - Species: Poecilia reticulata [static])	
EC50 - Crustacea [1]	750 mg/l (Exposure time: 48 h - Species: Daphnia magna)	
EC50 72h - Algae [1]	83 mg/l (Species: Desmodesmus subspicatus)	
Toluene (108-88-3)		
LC50 - Fish [1]	15.22 – 19.05 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])	
LC50 - Fish [2]	12.6 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])	
EC50 - Crustacea [1]	5.46 – 9.83 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])	
EC50 - Crustacea [2]	11.5 mg/l (Exposure time: 48 h - Species: Daphnia magna)	
EC50 72h - Algae [1]	12.5 mg/l (Species: Pseudokirchneriella subcapitata [static])	
EC50 96h - Algae [1]	> 433 mg/l (Species: Pseudokirchneriella subcapitata)	
LOEC (chronic)	2.76 mg/l Test organisms (species): Ceriodaphnia dubia Duration: '7 d'	
NOEC (chronic)	0.74 mg/l Test organisms (species): Ceriodaphnia dubia Duration: '7 d'	
NOEC chronic fish	1.39 mg/l Test organisms (species): Oncorhynchus kisutch Duration: '40 d'	

12.2. Persistence and degradability

No additional information available

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12.3. Bioaccumulative potential

Methylethylketoxime (96-29-7)	
BCF - Fish [1]	0.5 – 5.8
Partition coefficient n-octanol/water (Log Pow)	0.65 (at 25 °C)
Toluene (108-88-3)	
Partition coefficient n-octanol/water (Log Pow)	2.65

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Endocrine disrupting properties

No additional information available

12.7. Other adverse effects

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

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Sewage disposal recommendations

: Do not dispose of waste into sewer.

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...

Ecological information : Avoid release to the environment.

SECTION 14: Transport information

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

ADR	IMDG	IATA	ADN	RID			
14.1. UN number or ID number							
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable			
14.2. UN proper shipping name							
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable			
14.3. Transport hazard class(es)							
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable			
14.4. Packing group							
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable			
14.5. Environmental hazards							
Dangerous for the environment: No	Dangerous for the environment: No Marine pollutant: No	Dangerous for the environment: No	Dangerous for the environment: No	Dangerous for the environment: No			
This product is Combustible as defined by the US Department of Transportation (DOT). It is regulated for transport in the US in container > 119							

This product is Combustible as defined by the US Department of Transportation (DOT). It is regulated for transport in the US in container > 119 gallons (450 liters). The product is not regulated for transport by the IATA, ADR/RID, ADNR or the IMDG regulations. Therefore, no UN# is applicable to this product.

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14.6. Special precautions for user

Overland transport

Vehicle for tank carriage : AT Transport category (ADR) : 3

Transport by sea

No data available

Air transport

No data available

Inland waterway transport

No data available

Rail transport

No data available

14.7. Maritime transport in bulk according to IMO instruments

Not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU-Regulations

REACH Annex XVII (Restriction List)

EU restriction list (REA	J restriction list (REACH Annex XVII)				
Reference code	Applicable on	Entry title or description			
28.	Methylethylketoxime	Substances which are classified as carcinogen category 1A or 1B in Part 3 of Annex VI to Regulation (EC) No 1272/2008 and are listed in Appendix 1 or Appendix 2, respectively.			
3(a)	Toluene	Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes 2.1 to 2.4, 2.6 and 2.7, 2.8 types A and B, 2.9, 2.10, 2.12, 2.13 categories 1 and 2, 2.14 categories 1 and 2, 2.15 types A to F			
3(b)	VINYLTRIS(METHYLETH YLKETOXIMINO)SILANE, tech-95; Methylethylketoxime; Vinyltrismethylethylketoxi mesilane; Toluene	categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes 3.1 to 3.7 adverse effects on sexual function and fertility or on development, 3.8 effects other than narcotic effects, 3.9 and 3.10			
40.	Toluene	Substances classified as flammable gases category 1 or 2, flammable liquids categories 1, 2 or 3, flammable solids category 1 or 2, substances and mixtures which, in contact with water, emit flammable gases, category 1, 2 or 3, pyrophoric liquids category 1 or pyrophoric solids category 1, regardless of whether they appear in Part 3 of Annex VI to Regulation (EC) No 1272/2008 or not.			
48.	Toluene	Toluene			

REACH Annex XIV (Authorisation List)

Not listed on REACH Annex XIV (Authorisation List)

REACH Candidate List (SVHC)

Not listed on the REACH Candidate List

PIC Regulation (Prior Informed Consent)

Not listed on the PIC list (Regulation EU 649/2012)

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POP Regulation (Persistent Organic Pollutants)

Not listed on the POP list (Regulation EU 2019/1021)

Ozone Regulation (1005/2009)

Not listed on the Ozone Depletion list (Regulation EU 1005/2009)

Explosives Precursors Regulation (2019/1148)

Contains no substance(s) listed on the Explosives Precursors list (Regulation EU 2019/1148 on the marketing and use of explosives precursors)

Drug Precursors Regulation (273/2004)

Contains substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on the manufacture and the placing on market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances)

Name	CN designation	CAS-No.	CN code	Category	Threshold	Annex
Toluene		108-88-3	2902 30 00	Category 3		Annex I

15.1.2. National regulations

No additional information available

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 (Oral)	Acute toxicity (oral), Category 3
Acute Tox. 4 (Dermal)	Acute toxicity (dermal), Category 4
Acute Tox. 4 (Inhalation:vapour)	Acute toxicity (inhalation:vapour) Category 4
Asp. Tox. 1	Aspiration hazard, Category 1
Carc. 1B	Carcinogenicity, Category 1B
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Flam. Liq. 2	Flammable liquids, Category 2
H225	Highly flammable liquid and vapour.
H301	Toxic if swallowed.
H304	May be fatal if swallowed and enters airways.
H312	Harmful in contact with skin.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.

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Full text of H- and EUH-statements:	
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H336	May cause drowsiness or dizziness.
H350	May cause cancer.
H361d	Suspected of damaging the unborn child.
H370	Causes damage to organs.
H373	May cause damage to organs through prolonged or repeated exposure.
Repr. 2	Reproductive toxicity, Category 2
Skin Irrit. 2	Skin corrosion/irritation, Category 2
Skin Sens. 1	Skin sensitisation, Category 1
STOT RE 2	Specific target organ toxicity – Repeated exposure, Category 2
STOT SE 1	Specific target organ toxicity – single exposure, Category 1
STOT SE 3	Specific target organ toxicity – Single exposure, Category 3, Narcosis

SDS EU (REACH Annex II) - Custom v22

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