

Silquest* A-151 silane

SAFETY DATA SHEET

1. Identification

Product identifier: Silquest* A-151 silane

Other means of identification

Synonyms: Vinyltriethoxysilane

Recommended use and restriction on use

Recommended use: Interface additive and adhesion promoter for coatings. Sizing agent for glass fibers used in insulation and reinforcement.

Restrictions on use: Not known.

Manufacturer/Importer/Distributor Information : Momentive Performance Materials - Sistersville
10851 Energy Highway
FRIENDLY WV 26146

Contact person : commercial.services@momentive.com

Telephone : General information
+1-800-295-2392

Emergency telephone number

Supplier : CHEMTREC
1-800-424-9300

2. Hazard(s) identification

Hazard Classification

Physical Hazards

Flammable liquids Category 3

Health Hazards

Toxic to reproduction Category 2

Unknown toxicity - Health

Acute toxicity, inhalation, vapor	0 %
Acute toxicity, inhalation, dust or mist	0 %

Label Elements

Hazard Symbol:

Silquest* A-151 silane



Signal Word: Danger

Hazard Statement: H226; Flammable liquid and vapor.
H360; May damage fertility or the unborn child.
H361; Suspected of damaging fertility or the unborn child.

Precautionary Statements

Prevention: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container tightly closed. Ground and bond container and receiving equipment. Use explosion-proof [electrical/ventilating/lighting/] equipment. Use non-sparking tools. Take action to prevent static discharges. Wear protective gloves/protective clothing/eye protection/face protection. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required.

Response: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. IF exposed or concerned: Get medical advice/attention. In case of fire: Use ... for extinction.

Storage: Store in a well-ventilated place. Keep cool. Store locked up.

Disposal: Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Other hazards which do not result in GHS classification: Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment. Sparks may ignite liquid and vapor. May cause flash fire or explosion.

Substance(s) formed under the conditions of use: Reacts with water forming ethanol.

3. Composition/information on ingredients

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Substances

Composition information of impurities and stabilizers

Chemical Identity	CAS number	Content in percent (%)*
Toluene	108-88-3	0.1 - <1%

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

- Ingestion:** If conscious, drink plenty of water. Get medical attention.
- Inhalation:** Move the exposed person to fresh air at once. Get medical attention if symptoms persist.
- Skin Contact:** Wash off promptly and flush contaminated skin with water. Promptly remove clothing if soaked through and flush skin with water. Wash contaminated clothing before reuse. Get medical attention.
- Eye contact:** Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

Most important symptoms/effects, acute and delayed

Symptoms: This product contains ethanol. Symptoms vary with the alcohol level of the blood. Mild alcohol intoxication occurs at blood levels between 0.05%-0.15% and approximately 25% of individuals will show signs of intoxication at these levels. Above 0.15% the person is definitely under the influence of ethanol and 50%-95% of individuals at this level are clinically intoxicated. Severe poisoning occurs when the blood ethanol level is 0.3%-0.5%. Above 0.5% the individual will be comatose and death can occur. The unabsorbed ethanol should be removed by gastric lavage after intubating the patient to prevent aspiration. Avoid the use of depressant drugs or the excessive administration of fluids. In the presence of hypoglycemia, administer 5%-10% glucose intravenously, plus thiamine 100 mg intramuscularly. Hemodialysis is indicated if the ethanol concentration in the blood is above 5 mg/ml. Naloxone may be useful to reverse clinical alcoholic coma and 0.4-1.2 mg intravenously may arouse ethanol-intoxicated patients.

Hazards: No data available.

Indication of immediate medical attention and special treatment needed

Treatment: Treatment is symptomatic and supportive.

5. Fire-fighting measures

General Fire Hazards: Do not use water jet as an extinguisher, as this will spread the fire. Use water spray to keep fire-exposed containers cool.

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Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: All standard extinguishing agents are suitable.

Unsuitable extinguishing media: No data available.

Specific hazards arising from the chemical: Vapors are flammable and heavier than air. Vapors may travel across the ground and reach remote ignition sources causing a flashback fire danger. Ground container and transfer equipment to eliminate static electric sparks.

Special protective equipment and precautions for firefighters

Special fire fighting procedures: Keep away from sources of ignition - No smoking. Take precautionary measures against static discharges. Product may charge electrostatically during pouring or filling. All equipment used when handling the product must be grounded.

Special protective equipment for fire-fighters: Firefighters must wear NIOSH/MSHA approved positive pressure self-contained breathing apparatus with full face mask and full protective clothing.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: Use ground strap and appropriate precautions for dispensing flammable liquids. Use spark-proof tools and explosion-proof equipment. Avoid contact with eyes, skin, and clothing. Keep out of reach of children. Attention: Not for injection into humans.

Methods and material for containment and cleaning up: Warn other workers of spill. Wear proper protective equipment as specified in the protective equipment section. Wipe, scrape, or soak up in an inert material and put in a container intended for flammable materials for disposal.

Notification Procedures: ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).

Environmental Precautions: Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling: Sensitivity to static discharge is expected; material has a flash point below 200 F.

Conditions for safe storage, including any incompatibilities: Keep away from heat, sparks and open flame. Keep container closed. Store in original container.

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8. Exposure controls/personal protection

Control Parameters

Occupational Exposure Limits

Chemical Identity	Type	Exposure Limit Values	Source
Toluene	TWA	20 ppm	US. ACGIH Threshold Limit Values (03 2015)
	STEL	150 ppm 560 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	REL	100 ppm 375 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	TWA	100 ppm 375 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	STEL	150 ppm 560 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	TWA	200 ppm	US. OSHA Table Z-2 (29 CFR 1910.1000) (02 2006)
	Ceiling	300 ppm	US. OSHA Table Z-2 (29 CFR 1910.1000) (02 2006)
	MAX. CONC	500 ppm	US. OSHA Table Z-2 (29 CFR 1910.1000) (02 2006)

Biological Limit Values

Chemical Identity	Exposure Limit Values	Source
Toluene (o-Cresol, with hydrolysis: Sampling time: End of shift.)	0.3 mg/g (Creatinine in urine)	ACGIH BEI (03 2015)
Toluene (toluene: Sampling time: Prior to last shift of work week.)	0.02 mg/l (Blood)	ACGIH BEI (03 2015)
Toluene (toluene: Sampling time: End of shift.)	0.03 mg/l (Urine)	ACGIH BEI (03 2015)

Appropriate Engineering Controls

Provide eyewash station and safety shower. General (mechanical) room ventilation is expected to be satisfactory if handled at low temperatures or in covered equipment. Provide adequate ventilation if fumes or vapors are generated.

Individual protection measures, such as personal protective equipment

General information: General (mechanical) room ventilation is expected to be satisfactory if handled at low temperatures or in covered equipment.

Eye/face protection: Safety glasses with side shields

Skin Protection

Hand Protection: Chemical resistant gloves

Other: Safety shoes Wear suitable protective clothing.

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Respiratory Protection: If exposure limits are exceeded or respiratory irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Supplied air respirators may be required for non-routine or emergency situations. Respiratory protection must be provided in accordance with OSHA regulations (see 29CFR 1910.134).

Hygiene measures: Avoid contact with eyes. When using do not smoke. Wash thoroughly after handling.

9. Physical and chemical properties

Appearance

Physical state:	liquid
Form:	liquid
Color:	Pale yellow
Odor:	ester like
Odor threshold:	No data available.
pH:	No data available.
Melting point/freezing point:	< 0 °C
Initial boiling point and boiling range:	160.5 °C (1,013 hPa)
Flash Point:	44 °C (Tagliabue Closed Cup)
Evaporation rate:	< 1
Flammability (solid, gas):	No data available.
Upper/lower limit on flammability or explosive limits	
Flammability limit - upper (%):	No data available.
Flammability limit - lower (%):	No data available.
Explosive limit - upper (%):	No data available.
Explosive limit - lower (%):	No data available.
Heat of combustion:	No data available.
Vapor pressure:	ca. 6.7 hPa (20 °C)
Vapor density:	Vapors are heavier than air and may spread near ground to sources of ignition.
Density:	0.9050 g/cm ³ (25 °C)
Relative density:	No data available.
Solubility(ies)	
Solubility in water:	Reactive.
Solubility (other):	No data available.
Partition coefficient (n-octanol/water) Log Pow:	No data available.
Auto-ignition temperature:	No data available.
Decomposition temperature:	No data available.

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SADT:	No data available.
Viscosity, dynamic:	No data available.
Viscosity, kinematic:	No data available.
VOC:	902.35 g/l ;

10. Stability and reactivity

Reactivity:	No dangerous reaction if used as recommended.
Chemical Stability:	Material is stable under normal conditions.
Possibility of hazardous reactions:	May occur. Avoid contact with: Water Peroxides. Catalytic metals. Oxidizing agents. Polymerization catalysts. High Temperatures
Conditions to avoid:	Heat, sparks, flames. Avoid exposure to high temperatures or direct sunlight.
Incompatible Materials:	Halogens (chlorine) in the presence of sunlight or ultraviolet light. Peroxides. Reacts with water or moisture to form: Ethanol.
Hazardous Decomposition Products:	In case of fire, gives off (emits): Carbon oxides Oxides of silicon. Carbon monoxide is highly toxic if inhaled; carbon dioxide in sufficient concentrations can act as an asphyxiant. Acute overexposure to the products of combustion may result in irritation of the respiratory tract.

11. Toxicological information

Information on likely routes of exposure

Ingestion:	No data available.
Inhalation:	No data available.
Skin Contact:	No data available.
Eye contact:	No data available.

Symptoms related to the physical, chemical and toxicological characteristics

Ingestion:	No data available.
Inhalation:	No data available.
Skin Contact:	No data available.
Eye contact:	No data available.

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral Product:	LD 50 (Rat): > 5,000 mg/kg
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Dermal

Product: LD 50 (Rat): > 2,000 mg/kg

Specified substance(s):

Toluene LD 50 (Rabbit): 12,124 mg/kg

Inhalation

Product: LC50 (Rat): 35 mg/l

Specified substance(s):

Toluene LC50 (Rat): 30.6 mg/l

Repeated dose toxicity

Product: No data available.

Skin Corrosion/Irritation

Product: OECD-Guideline 404 (Acute Dermal Irritation/Corrosion) (Rabbit): No skin irritation

Serious Eye Damage/Eye Irritation

Product: OECD-Guideline 405 (Acute Eye Irritation/Corrosion) (Rabbit, 72 h): No eye irritation

Respiratory or Skin Sensitization

Product: No data available.

Carcinogenicity

Product: No data available.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:

No carcinogenic components identified

US. National Toxicology Program (NTP) Report on Carcinogens:

No carcinogenic components identified

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):

No carcinogenic components identified

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Germ Cell Mutagenicity

In vitro

Product: Ames-Test: negative (not mutagenic)
Mouse Lymphoma Assay (OECD Guideline 476): negative (not mutagenic)

In vivo

Product: No data available.

Reproductive toxicity

Product: No data available.

Specific Target Organ Toxicity - Single Exposure

Product: No data available.

Specific Target Organ Toxicity - Repeated Exposure

Product: No data available.

Aspiration Hazard

Product: No data available.

Other effects:

No adverse effects anticipated from available information. Evidence of systemic toxicity was produced at concentrations > 100 ppm, characterized by kidney and urinary bladder effects. Recurrent exposure of rats to an aerosol of a hydrolyzate of this material (150 mg/m³) produced inflammatory and irritant effects in the nasal, laryngeal and tracheal mucosae, and inflammatory reactions in the lungs.
The following information is based on ethanol: The International Agency for Research on Cancer (IARC) has determined that the consumption of alcoholic beverages is causally related to the occurrence of malignant tumors of the oral cavity, pharynx, larynx, esophagus and liver in humans. The carcinogenic response attributed to drinking alcoholic beverages has not been verified in studies with laboratory animals. Established uses of denatured ethanol and non-beverage uses of pure ethanol are not considered to pose any significant cancer hazard.

12. Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish

Product: No data available.

Specified substance(s):

Toluene
LC0 (Leuciscus idus, 48 h): 52 mg/l
LC50 (Leuciscus idus, 48 h): 70 mg/l
LC50 (Pimephales promelas, 96 h): 34 mg/l

Aquatic Invertebrates

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Product: No data available.

Specified substance(s):
Toluene LC0 (Daphnia magna): 93 mg/l
(Daphnia magna): 270 mg/l

Chronic hazards to the aquatic environment:

Fish

Product: No data available.

Aquatic Invertebrates

Product: No data available.

Toxicity to Aquatic Plants

Product: No data available.

Persistence and Degradability

Biodegradation

Product: No data available.

BOD/COD Ratio

Product: No data available.

Bioaccumulative potential

Bioconcentration Factor (BCF)

Product: No data available.

Partition Coefficient n-octanol / water (log Kow)

Product: No data available.

Mobility in soil: No data available.

Known or predicted distribution to environmental compartments

Toluene No data available.

Other adverse effects: No data available.

13. Disposal considerations

General information: The generation of waste should be avoided or minimized wherever possible. Do not discharge into drains, water courses or onto the ground. See Section 8 for information on appropriate personal protective equipment.

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Disposal instructions: Disposal should be made in accordance with federal, state and local regulations.

Contaminated Packaging: Dispose of as unused product.

14. Transport information

DOT

UN Number:	UN 1993
UN Proper Shipping Name:	Flammable liquids, n.o.s.(VINYLTRIETHOXYSILANE)
Transport Hazard Class(es)	
Class:	3
Label(s):	3
Packing Group:	III
Marine Pollutant:	No

IMDG

UN Number:	UN 1993
UN Proper Shipping Name:	FLAMMABLE LIQUID, N.O.S.(VINYLTRIETHOXYSILANE)
Transport Hazard Class(es)	
Class:	3
Label(s):	3
EmS No.:	F-E, S-E
Packing Group:	III
Marine Pollutant:	No
Limited quantity	5.00L
Excepted quantity	E1

IATA

UN Number:	UN 1993
Proper Shipping Name:	Flammable liquid, n.o.s.(VINYLTRIETHOXYSILANE)
Transport Hazard Class(es):	
Class:	3
Label(s):	3
Packing Group:	III
Cargo aircraft only Packing	366
Instructions:	
Passenger and cargo aircraft	366
Packing Instructions:	
Limited quantity:	10.00L
Packing Instructions:	Y344
Excepted quantity	E1
Environmental Hazards:	Not regulated.
Marine Pollutant:	No

15. Regulatory information

US Federal Regulations

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TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4):
None present or none present in regulated quantities.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Fire Hazard
Delayed (Chronic) Health Hazard

SARA 302 Extremely Hazardous Substance
None present or none present in regulated quantities.

SARA 304 Emergency Release Notification
None present or none present in regulated quantities.

SARA 311/312 Hazardous Chemical

<u>Chemical Identity</u>	<u>Threshold Planning Quantity</u>
Toluene	10000 lbs

SARA 313 (TRI Reporting)
None present or none present in regulated quantities.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)
None present or none present in regulated quantities.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):
None present or none present in regulated quantities.

US State Regulations

US. California Proposition 65

This product contains chemical(s) known to the State of California to cause cancer and/or to cause birth defects or other reproductive harm.

Toluene	Maximum Allowable Dose Level (MADL): 13000 µg/day. Developmental toxin.
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US. New Jersey Worker and Community Right-to-Know Act

Chemical Identity
Vinyltriethoxysilane
Related Silanes and Silsesquioxanes
Ethanol
Vinyl-diethoxymethoxysilane
Heavies
Toluene

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US. Massachusetts RTK - Substance List

No ingredient regulated by MA Right-to-Know Law present.

US. Pennsylvania RTK - Hazardous Substances

No ingredient regulated by PA Right-to-Know Law present.

US. Rhode Island RTK

No ingredient regulated by RI Right-to-Know Law present.

Inventory Status:

Australia AICS:	y (positive listing)	Remarks: None.
EU EINECS List:	y (positive listing)	Remarks: None.
Japan (ENCS) List:	n (Negative listing)	Remarks: None.
China Inventory of Existing Chemical Substances:	y (positive listing)	Remarks: None.
Korea Existing Chemicals Inv. (KECI):	y (positive listing)	Remarks: None.
Canada DSL Inventory List:	y (positive listing)	Remarks: None.
Canada NDSL Inventory:	n (Negative listing)	Remarks: None.
New Zealand Inventory of Chemicals:	y (positive listing)	Remarks: None.
Philippines PICCS:	y (positive listing)	Remarks: None.
US TSCA Inventory:	y (positive listing)	Remarks: None.
New Zealand Inventory of Chemicals:	n (Negative listing)	Remarks: None.
Taiwan Chemical Substance Inventory:	On or in compliance with the inventory	Remarks: None.

16. Other information, including date of preparation or last revision

HMIS Hazard ID

Health	*	0
Flammability		2
Physical Hazards		0
PERSONAL PROTECTION		

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe; RNP - Rating not possible; *Chronic health effect

Issue Date: 10/31/2017
Revision Date: No data available.
Version #: 2.0
Further Information: No data available.

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Disclaimer:

Notice to reader

Unless otherwise specified in section 1.2, Momentive Products are intended for industrial application only.

They are not intended for specific medical applications, neither for long-lasting (> 30 days) implantation into the human body, injected or directly ingested, nor for the manufacture of multiple usable contraceptives.

Further Information

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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