

MATERIAL SAFETY DATA SHEET

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Version 1.6

Section 1 - Product and Company Information

Product Name (3-MERCAPTOPROPYL)TRIMETHOXSILANE
Product Number M1521
Brand SIGMA

Company Sigma-Aldrich
Address 3050 Spruce Street
SAINT LOUIS MO 63103 US
Technical Phone: 800-325-5832
Fax: 800-325-5052
Emergency Phone: 314-776-6555

Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313
(3-MERCAPTOPROPYL)TRIMETHOXSILANE	4420-74-0	No

Formula C6H16O3SSi
Synonyms A 189 (silicone) * AZ 6129 * GF 70 * KBE 803 *
KBM 803 * M 8500 *
gamma-Mercaptopropyltrimethoxysilane *
3-Mercaptopropyltrimethoxysilane * MPS * NUCA 189
* Prosil 196 * SH 6062 * Sila-Ace S 810 * Silane
A 189 * Silane, 3-mercaptopropyltrimethoxy- *
Silicone A-189 * Silquest A 189 *
3-(Trimethoxysilyl)propanethiol * TSL8380E *
Union carbide A-189 * Z 6062
RTECS Number: TZ7800000

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Harmful. Dangerous for the environment.
Harmful if swallowed. May cause sensitization by skin contact.
Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Sensitizer.

HMIS RATING

HEALTH: 3
FLAMMABILITY: 1
REACTIVITY: 1

NFPA RATING

HEALTH: 3
FLAMMABILITY: 1
REACTIVITY: 1

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

ORAL EXPOSURE

If swallowed, wash out mouth with water provided person is conscious. Call a physician.

INHALATION EXPOSURE

If inhaled, remove to fresh air. If breathing becomes difficult, call a physician.

DERMAL EXPOSURE

In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

EYE EXPOSURE

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

Section 5 - Fire Fighting Measures

FLASH POINT

204.8 °F 96 °C Method: closed cup

AUTOIGNITION TEMP

N/A

FLAMMABILITY

N/A

EXTINGUISHING MEDIA

Suitable: Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.

FIREFIGHTING

Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.
Specific Hazard(s): Emits toxic fumes under fire conditions.

Section 6 - Accidental Release Measures

PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves.

METHODS FOR CLEANING UP

Absorb on sand or vermiculite and place in closed containers for disposal. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

HANDLING

User Exposure: Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure. Do not breathe vapor.

STORAGE

Suitable: Keep tightly closed.
Store at 2-8°C

SPECIAL REQUIREMENTS

Moisture sensitive.

Section 8 - Exposure Controls / PPE

ENGINEERING CONTROLS

Mechanical exhaust required.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory: Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator.

Other: Wear appropriate government approved respirator, chemical-resistant gloves, safety goggles, other protective clothing.

GENERAL HYGIENE MEASURES

Wash thoroughly after handling. Wash contaminated clothing before reuse.

Section 9 - Physical/Chemical Properties

Appearance	Physical State: Liquid Color: Colorless Odor: Stench.	
Property	Value	At Temperature or Pressure
Molecular Weight	196.34 AMU	
pH	N/A	
BP/BP Range	213.0 - 215.0 °C	
MP/MP Range	N/A	
Freezing Point	N/A	
Vapor Pressure	< 5 mmHg	20 °C
Vapor Density	N/A	
Saturated Vapor Conc.	N/A	
SG/Density	1.057 g/cm3	
Bulk Density	N/A	
Odor Threshold	N/A	
Volatile%	N/A	
VOC Content	N/A	
Water Content	N/A	
Solvent Content	N/A	
Evaporation Rate	N/A	
Viscosity	0.002 Pas	20 °C
Surface Tension	N/A	
Partition Coefficient	N/A	
Decomposition Temp.	N/A	
Flash Point	204.8 °F 96 °C	Method: closed cup
Explosion Limits	N/A	
Flammability	N/A	
Autoignition Temp	N/A	
Refractive Index	1.445	
Optical Rotation	N/A	
Miscellaneous Data	N/A	
Solubility	N/A	

N/A = not available

Section 10 - Stability and Reactivity

STABILITY

Stable: Stable.

Conditions of Instability: May decompose on exposure to moist air or water.

Materials to Avoid: Strong oxidizing agents, Strong acids, Alcohols.

HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide, Sulfur oxides, Silicon oxide.

HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

Section 11 - Toxicological Information

ROUTE OF EXPOSURE

Skin Contact: May cause skin irritation.

Skin Absorption: May be harmful if absorbed through the skin.

Eye Contact: May cause eye irritation.

Inhalation: May be harmful if inhaled. Material may be irritating to mucous membranes and upper respiratory tract.

Ingestion: Harmful if swallowed.

SENSITIZATION

Sensitization: Possible sensitizer.

Skin: The preceding data, or interpretation of data, was determined using Quantitative Structure Activity Relationship (QSAR) modeling. Prolonged or repeated exposure may cause allergic reactions in certain sensitive individuals.

SIGNS AND SYMPTOMS OF EXPOSURE

Exposure can cause: Nausea, headache, and vomiting. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

TOXICITY DATA

Oral

Rat

2830 UL/KG

LD50

Intraperitoneal

Mouse

633 MG/KG

LD50

Skin

Rabbit

5660 UL/KG

LD50

IRRITATION DATA

Eyes

Remarks: Mild irritation effect

Skin

Rabbit

500 mg

Remarks: Open irritation test

Section 12 - Ecological Information

ACUTE ECOTOXICITY TESTS

Test Type: EC50 Algae
Species: Scenedesmus subspicatus
Time: 72 h
Value: 267 mg/l

Test Type: EC50 Daphnia
Species: Daphnia magna
Time: 48 h
Value: 6.7 mg/l

Test Type: LC50 Fish
Species: Brachydanio rerio
Time: 96 h
Value: 439 mg/l

ELIMINATION

Elimination: 51 %

Section 13 - Disposal Considerations

APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION

Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information

DOT

Proper Shipping Name: Environmentally hazardous substances, liquid, n.o.s.
UN#: 3082
Class: 9
Packing Group: Packing Group III
Hazard Label: Class 9
PIH: Not PIH

IATA

Proper Shipping Name: Aviation Regulated Liquid, N.O.S.
IATA UN Number: 3334
Hazard Class: 9

Section 15 - Regulatory Information

EU ADDITIONAL CLASSIFICATION

Symbol of Danger: Xn-N
Indication of Danger: Harmful. Dangerous for the environment.
R: 22-43-51/53
Risk Statements: Harmful if swallowed. May cause sensitization by skin contact. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
S: 24/25-36/37-61
Safety Statements: Avoid contact with skin and eyes. Wear suitable protective clothing and gloves. Avoid release to the environment. Refer to special instructions/safety data sheets.

US CLASSIFICATION AND LABEL TEXT

Indication of Danger: Harmful. Dangerous for the environment.
Risk Statements: Harmful if swallowed. May cause sensitization by skin contact. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Safety Statements: Avoid contact with skin and eyes. Wear suitable protective clothing and gloves. Avoid release to the environment. Refer to special instructions/safety data sheets.
US Statements: Sensitizer.

UNITED STATES REGULATORY INFORMATION

SARA LISTED: No
TSCA INVENTORY ITEM: Yes

CANADA REGULATORY INFORMATION

WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.
DSL: Yes
NDSL: No

Section 16 - Other Information

DISCLAIMER

For R&D use only. Not for drug, household or other uses.

WARRANTY

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.
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