

MATERIAL SAFETY DATA SHEET

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Version 1.6

Section 1 - Product and Company Information

Product Name	3-AMINOPROPYLTRIETHOXYSILANE
Product Number	A3648
Brand	SIAL
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-AMINOPROPYLTRIETHOXYSILANE	919-30-2	No
Formula	C ₉ H ₂₃ NO ₃ Si	
Synonyms	A 1100 * AGM-9 * (gamma-Aminopropyl)triethoxysilane * (3-Aminopropyl)triethoxysilane * Propylamine, 3-(triethoxysilyl)- * Silane, gamma-aminopropyltriethoxy- * Silane, (3-aminopropyl)triethoxy- * Silicone A-1100 * Triethoxy(3-aminopropyl)silane * 3-(Triethoxysilyl)propylamine	
RTECS Number:	TX2100000	

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Corrosive.
Harmful if swallowed. Causes burns.
Target organ(s): Nerves. Liver.

HMIS RATING

HEALTH: 3*
FLAMMABILITY: 1
REACTIVITY: 1

NFPA RATING

HEALTH: 3
FLAMMABILITY: 1
REACTIVITY: 1

*additional chronic hazards present.

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. Do not induce vomiting.

INHALATION EXPOSURE

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

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

CONDITIONS OF FLAMMABILITY

Under fire conditions, material may decompose to form flammable and/or explosive mixtures in air.

FLASH POINT

208.4 °F 98 °C Method: closed cup

EXPLOSION LIMITS

Lower: 0.8 % Upper: 4.5 %

AUTOIGNITION TEMP

N/A

FLAMMABILITY

N/A

EXTINGUISHING MEDIA

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

Unsuitable: Do not use water.

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 TO BE FOLLOWED IN CASE OF LEAK OR SPILL

Evacuate area.

PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

METHODS FOR CLEANING UP

Cover with dry lime or soda ash, pick up, keep in a closed container, and hold for waste disposal. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

HANDLING

User Exposure: Do not breathe vapor. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

STORAGE

Suitable: Keep tightly closed.

SPECIAL REQUIREMENTS

Moisture sensitive. Store under inert gas.

Section 8 - Exposure Controls / PPE

ENGINEERING CONTROLS

Safety shower and eye bath. Use only in a chemical fume hood.

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.

Hand: Compatible chemical-resistant gloves.

Eye: Chemical safety goggles.

Other: Faceshield (8-inch minimum).

GENERAL HYGIENE MEASURES

Wash contaminated clothing before reuse. Discard contaminated shoes. Wash thoroughly after handling.

Section 9 - Physical/Chemical Properties

Appearance	Physical State: Liquid Color: Colorless Form: Clear liquid	
Property	Value	At Temperature or Pressure
Molecular Weight	221.37 AMU	
pH	N/A	
BP/BP Range	213.0 - 216.0 °C	
MP/MP Range	N/A	
Freezing Point	N/A	
Vapor Pressure	< 10 mmHg	100 °C
Vapor Density	7.7 g/l	
Saturated Vapor Conc.	N/A	
SG/Density	0.949 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	N/A	
Surface Tension	N/A	
Partition Coefficient	N/A	
Decomposition Temp.	N/A	
Flash Point	208.4 °F 98 °C	Method: closed cup
Explosion Limits	Lower: 0.8 % Upper: 4.5 %	
Flammability	N/A	

Autoignition Temp	N/A
Refractive Index	1.423
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.

HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide, and nitrogen oxides, Silicon oxide.

HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

Section 11 - Toxicological Information

ROUTE OF EXPOSURE

Skin Contact: Causes burns.

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

Eye Contact: Causes burns.

Inhalation: Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract. May be harmful if inhaled.

Ingestion: Harmful if swallowed.

TARGET ORGAN(S) OR SYSTEM(S)

Nerves. Liver. Kidneys.

SIGNS AND SYMPTOMS OF EXPOSURE

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin.

Inhalation may result in spasm, inflammation and edema of the larynx and bronchi, chemical pneumonitis, and pulmonary edema.

Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting.

TOXICITY DATA

Oral

Rat

1780 mg/kg

LD50

Oral

Mouse

4000 mg/kg

LD50

Remarks: Lungs, Thorax, or Respiration: Emphysema.

Behavioral: Excitement. Blood: Changes in leukocyte (WBC) count.

Intraperitoneal

Mouse

260 MG/KG
LD50

Skin
Rabbit
4 ML/KG
LD50

Oral
Mammal
4000 mg/kg
LD50

IRRITATION DATA

Skin
Rabbit
0.1 mg
24H
Remarks: Open irritation test

Skin
Rabbit
5 mg
24H
Remarks: Severe irritation effect

Eyes
Rabbit
100 mg
Remarks: Mild irritation effect

Eyes
Rabbit
0.75 mg
24H
Remarks: Severe irritation effect

Section 12 - Ecological Information

No data available.

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: Amines, liquid, corrosive, n.o.s, [or] Polyamines, liquid, corrosive, n.o.s.
UN#: 2735
Class: 8
Packing Group: Packing Group II
Hazard Label: Corrosive
PIH: Not PIH

IATA

Proper Shipping Name: Amines, liquid, corrosive, n.o.s.
IATA UN Number: 2735
Hazard Class: 8
Packing Group: II

Section 15 - Regulatory Information

EU DIRECTIVES CLASSIFICATION

Symbol of Danger: C
Indication of Danger: Corrosive.
R: 22-34
Risk Statements: Harmful if swallowed. Causes burns.
S: 26-36/37/39-45
Safety Statements: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves, and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

US CLASSIFICATION AND LABEL TEXT

Indication of Danger: Corrosive.
Risk Statements: Harmful if swallowed. Causes burns.
Safety Statements: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves, and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
US Statements: Target organ(s): Nerves. Liver.

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. Copyright 2007 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.