

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : (3-Aminopropyl)triethoxysilane
Product Number : A3648
Brand : Sigma-Aldrich
Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA
Telephone : +1 800-325-5832
Fax : +1 800-325-5052
Emergency Phone # : (314) 776-6555

2. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : 3-Triethoxysilylpropylamine
amino silane
APTES

Formula : C₉H₂₃NO₃Si
Molecular Weight : 221.37 g/mol

| CAS-No. | EC-No. | Index-No. | Concentration |
|-------------------------------------|-----------|--------------|---------------|
| 3-Aminopropyltriethoxysilane | | | |
| 919-30-2 | 213-048-4 | 612-108-00-0 | - |

3. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards

Target Organ Effect

Harmful by ingestion.

Corrosive

Target Organs

Nerves., Liver, Kidney

HMIS Classification

Health Hazard: 3

Chronic Health Hazard: *

Flammability: 1

Physical hazards: 1

NFPA Rating

Health Hazard: 3

Fire : 1

Reactivity Hazard: 1

Potential Health Effects

| | |
|-------------------|---|
| Inhalation | May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract. |
| Skin | May be harmful if absorbed through skin. Causes skin burns. |
| Eyes | Causes eye burns. |
| Ingestion | May be harmful if swallowed. Causes burns. |

4. FIRST AID MEASURES

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled

If breathed in, move person into fresh air. If not breathing give artificial respiration. Consult a physician.

In case of skin contact

Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Continue rinsing eyes during transport to hospital. Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Flammable properties

Flash point 98 °C (208 °F) - closed cup

Ignition temperature no data available

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for fire-fighters

Wear self contained breathing apparatus for fire fighting if necessary.

Further information

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

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

Environmental precautions

Do not let product enter drains.

Methods for cleaning up

Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Handling

Avoid inhalation of vapour or mist.
Normal measures for preventive fire protection.

Storage

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Store under inert gas. Moisture sensitive.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

Personal protective equipment**Respiratory protection**

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. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection

Handle with gloves.

Eye protection

Safety glasses

Skin and body protection

Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES**Appearance**

Form liquid, clear

Colour colourless

Safety data

pH no data available

Melting point no data available

Boiling point 213 - 216 °C (415 - 421 °F)

Flash point 98 °C (208 °F) - closed cup

Ignition temperature no data available

Lower explosion limit 0.8 %(V)

Upper explosion limit 4.5 %(V)

Vapour pressure < 13 hPa (< 10 mmHg) at 100 °C (212 °F)
133 hPa (100 mmHg) at 155 °C (311 °F)

Density 0.949 g/cm³

Water solubility no data available

Relative vapour density 7.64
- (Air = 1.0)

10. STABILITY AND REACTIVITY

Storage stability

Stable under recommended storage conditions. May decompose on exposure to moist air or water.

Materials to avoid

Strong oxidizing agents, Acids

Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides (NOx), silicon oxides

11. TOXICOLOGICAL INFORMATION**Acute toxicity**

LD50 Oral - rat - 1,780 mg/kg

LD50 Dermal - rabbit - 3.8 g/kg

Irritation and corrosion

Skin - rabbit - Severe skin irritation - 24 h

Eyes - rabbit - Severe eye irritation - 24 h

Sensitisation

no data available

Chronic exposure

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Signs and Symptoms of Exposure

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea, Vomiting

Potential Health Effects

| | |
|----------------------|---|
| Inhalation | May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract. |
| Skin | May be harmful if absorbed through skin. Causes skin burns. |
| Eyes | Causes eye burns. |
| Ingestion | May be harmful if swallowed. Causes burns. |
| Target Organs | Nerves., Liver, Kidney, |

12. ECOLOGICAL INFORMATION**Elimination information (persistence and degradability)**

no data available

Ecotoxicity effects

no data available

Further information on ecology

no data available

13. DISPOSAL CONSIDERATIONS**Product**

Observe all federal, state, and local environmental regulations. 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.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION**DOT (US)**

UN-Number: 2735 Class: 8 Packing group: II
Proper shipping name: Amines, liquid, corrosive, n.o.s. (3-Aminopropyltriethoxysilane)

IMDG

UN-Number: 2735 Class: 8 Packing group: II EMS-No: F-A, S-B
Proper shipping name: AMINES, LIQUID, CORROSIVE, N.O.S. (3-Aminopropyltriethoxysilane)
Marine pollutant: No

IATA

UN-Number: 2735 Class: 8 Packing group: II
Proper shipping name: Amines, liquid, corrosive n.o.s. (3-Aminopropyltriethoxysilane)

15. REGULATORY INFORMATION**OSHA Hazards**

Target Organ Effect, Harmful by ingestion., Corrosive

TSCA Status

On TSCA Inventory

DSL Status

All components of this product are on the Canadian DSL list.

SARA 302 Components

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards

Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

No Components Listed

Pennsylvania Right To Know Components

| | CAS-No. | Revision Date |
|------------------------------|----------|---------------|
| 3-Aminopropyltriethoxysilane | 919-30-2 | |

New Jersey Right To Know Components

| | CAS-No. | Revision Date |
|------------------------------|----------|---------------|
| 3-Aminopropyltriethoxysilane | 919-30-2 | |

California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth, or any other reproductive defects.

16. OTHER INFORMATION

Further information

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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 Co., 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.