

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Version 6.0 Revision Date 30.03.2016

Print Date 27.07.2019

GENERIC EU MSDS - NO COUNTRY SPECIFIC DATA - NO OEL DATA

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product identifiers**

Product name : (3-Aminopropyl)triethoxysilane

Product Number : 440140

Brand : Aldrich

Index-No. : 612-108-00-0

REACH No. : A registration number is not available for this substance as the substance or its uses are exempted from registration, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

CAS-No. : 919-30-2

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich Chemical Pvt Limited
Industrial Area, Anekal Taluka
Plot No 12,
12 Bommasandra - Jigani Link Road
560100 BANGALORE
INDIA

1.4 Emergency telephone number

Emergency Phone # : +91 98802 05043

SECTION 2: Hazards identification**2.1 Classification of the substance or mixture****Classification according to Regulation (EC) No 1272/2008**

Acute toxicity, Oral (Category 4), H302

Skin corrosion (Category 1B), H314

Skin sensitisation (Category 1), H317

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 Label elements**Labelling according Regulation (EC) No 1272/2008**

Pictogram



Signal word

Danger

Hazard statement(s)

H302

Harmful if swallowed.

H314

Causes severe skin burns and eye damage.

H317

May cause an allergic skin reaction.

Precautionary statement(s) P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER/doctor.
Supplemental Hazard Statements	none

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.1 Substances

Synonyms	:	3-Triethoxysilylpropylamine APTES
Formula	:	C ₉ H ₂₃ NO ₃ Si
Molecular weight	:	221.37 g/mol
CAS-No.	:	919-30-2
EC-No.	:	213-048-4
Index-No.	:	612-108-00-0

Hazardous ingredients according to Regulation (EC) No 1272/2008

Component	Classification	Concentration
3-Aminopropyltriethoxysilane		
CAS-No.	919-30-2	<= 100 %
EC-No.	213-048-4	
Index-No.	612-108-00-0	
	Acute Tox. 4; Skin Corr. 1B; Skin Sens. 1; H302, H314, H317	

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

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

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.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

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

5.2 Special hazards arising from the substance or mixture

Carbon oxides, Nitrogen oxides (NO_x), silicon oxides

5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information

Under fire conditions, material may decompose to form flammable and/or explosive mixtures in air. Use water spray to cool unopened containers.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas. For personal protection see section 8.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge. For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Store in cool place. 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.

Moisture sensitive. Store under inert gas.

Storage class (TRGS 510): Combustible, corrosive hazardous materials

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

8.2 Exposure controls

Appropriate engineering controls

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

Personal protective equipment

Eye/face protection

Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industria situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use (US) or type ABEK (EN 14387) respirator cartridges as a backup to enginee 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).

Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

- | | |
|--|---|
| a) Appearance | Form: liquid, clear
Colour: colourless |
| b) Odour | No data available |
| c) Odour Threshold | No data available |
| d) pH | No data available |
| e) Melting point/freezing point | No data available |
| f) Initial boiling point and boiling range | 217 °C at 1013 hPa - lit. |
| g) Flash point | 93 °C - closed cup |

h) Evaporation rate	No data available
i) Flammability (solid, gas)	No data available
j) Upper/lower flammability or explosive limits	Upper explosion limit: 4.5 %(V) Lower explosion limit: 0.8 %(V)
k) Vapour pressure	< 10 mmHg at 100 °C 100 mmHg at 155 °C
l) Vapour density	7.64 - (Air = 1.0)
m) Relative density	0.946 g/cm ³ at 25 °C
n) Water solubility	No data available
o) Partition coefficient: n-octanol/water	log Pow: 1.7 at 20 °C
p) Auto-ignition temperature	270 °C
q) Decomposition temperature	No data available
r) Viscosity	No data available
s) Explosive properties	No data available
t) Oxidizing properties	No data available

9.2 Other safety information

Relative vapour density 7.64 - (Air = 1.0)

SECTION 10: Stability and reactivity

10.1 Reactivity

No data available

10.2 Chemical stability

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

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

Heat, flames and sparks.

10.5 Incompatible materials

Strong oxidizing agents, Acids

10.6 Hazardous decomposition products

Other decomposition products - No data available
Hazardous decomposition products formed under fire conditions. - Carbon oxides, Nitrogen oxides (NO_x), silicon oxides
In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

LD50 Oral - Rat - male - 1,780 mg/kg(3-Aminopropyltriethoxysilane)

LC50 Inhalation - Rat - male - 6 h - > 5 ppm(3-Aminopropyltriethoxysilane)

(OECD Test Guideline 403)

LC50 Inhalation - Rat - female - 6 h - > 16 ppm(3-Aminopropyltriethoxysilane)

(OECD Test Guideline 403)

LD50 Dermal - Rabbit - 3.8 g/kg(3-Aminopropyltriethoxysilane)

Skin corrosion/irritation

Skin - Rabbit(3-Aminopropyltriethoxysilane)

Result: Causes burns. - 1 h

(OECD Test Guideline 404)

Serious eye damage/eye irritation

Eyes - Rabbit(3-Aminopropyltriethoxysilane)

(OECD Test Guideline 405)

Remarks: Severe eye irritation

Respiratory or skin sensitisation

Buehler Test - Guinea pig(3-Aminopropyltriethoxysilane)

May cause sensitisation by skin contact.

(OECD Test Guideline 406)

Germ cell mutagenicity

Hamster(3-Aminopropyltriethoxysilane)

ovary

Result: negative

Mutagenicity (micronucleus test)(3-Aminopropyltriethoxysilane)

Mouse - male and female

Result: negative

Carcinogenicity

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.

Reproductive toxicity

No data available(3-Aminopropyltriethoxysilane)

Specific target organ toxicity - single exposure

No data available(3-Aminopropyltriethoxysilane)

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available(3-Aminopropyltriethoxysilane)

Additional Information

Repeated dose toxicity - Rat - male and female - Oral - No observed adverse effect level - 200 mg/kg - Lowest observed adverse effect level - 600 mg/kg(3-Aminopropyltriethoxysilane)

Repeated dose toxicity - Rabbit - male and female - Dermal - No observed adverse effect level - 84 mg/kg(3-Aminopropyltriethoxysilane)

RTECS: TX2100000

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(3-Aminopropyltriethoxysilane)

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.(3-Aminopropyltriethoxysilane)

Liver - Irregularities - Based on Human Evidence(3-Aminopropyltriethoxysilane)

SECTION 12: Ecological information

12.1 Toxicity

Toxicity to fish	semi-static test LC50 - Danio rerio (zebra fish) - > 934 mg/l - 96 h(3-Aminopropyltriethoxysilane) (OECD Test Guideline 203)
Toxicity to daphnia and other aquatic invertebrates	Immobilization EC50 - Daphnia magna (Water flea) - 331 mg/l - 48 h(3-Aminopropyltriethoxysilane) (OECD Test Guideline 202)
Toxicity to algae	static test EC50 - Desmodesmus subspicatus (green algae) - > 1,000 mg/l - 72 h(3-Aminopropyltriethoxysilane)
Toxicity to bacteria	EC50 - Pseudomonas putida - 43 mg/l - 5.75 h(3-Aminopropyltriethoxysilane)

12.2 Persistence and degradability

Biodegradability aerobic - Exposure time 28 d(3-Aminopropyltriethoxysilane)
Result: 67 % - Not biodegradable

12.3 Bioaccumulative potential

Bioaccumulation Cyprinus carpio (Carp) - 5 mg/l(3-Aminopropyltriethoxysilane)

Bioconcentration factor (BCF): 3.4

12.4 Mobility in soil

No data available(3-Aminopropyltriethoxysilane)

12.5 Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging

Dispose of as unused product.

SECTION 14: Transport information

14.1 UN number

ADR/RID: 2735

IMDG: 2735

IATA: 2735

14.2 UN proper shipping name

ADR/RID: AMINES, LIQUID, CORROSIVE, N.O.S. (3-Aminopropyltriethoxysilane)

IMDG: AMINES, LIQUID, CORROSIVE, N.O.S. (3-Aminopropyltriethoxysilane)

IATA: Amines, liquid, corrosive, n.o.s. (3-Aminopropyltriethoxysilane)

14.3 Transport hazard class(es)

ADR/RID: 8

IMDG: 8

IATA: 8

14.4 Packaging group			
ADR/RID: II	IMDG: II	IATA: II	
14.5 Environmental hazards			
ADR/RID: no	IMDG Marine pollutant: no	IATA: no	
14.6 Special precautions for user			
No data available			

SECTION 15: Regulatory information

- 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.
- 15.2 Chemical safety assessment**
For this product a chemical safety assessment was not carried out

SECTION 16: Other information

Full text of H-Statements referred to under sections 2 and 3.

H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.

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 Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.