

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 07/07/2009

Reviewed on 07/07/2009

1 Identification of substance:

Product details:

Product name: 3-(Acryloyloxy)propyltrimethoxysilane

Stock number: 44178

Manufacturer/Supplier:

Alfa Aesar, A Johnson Matthey Company
Johnson Matthey Catalog Company, Inc.
30 Bond Street
Ward Hill, MA 01835-8099
Emergency Phone: (978) 521-6300
CHEMTREC: (800) 424-9300
Web Site: www.alfa.com

Information Department: Health, Safety and Environmental Department

Emergency information:

During normal hours the Health, Safety and Environmental Department. After normal hours call Chemtrec at (800) 424-9300.

2 Composition/Data on components:

Chemical characterization:

Description: (CAS#)

3-(Acryloyloxy)propyltrimethoxysilane (CAS# 4369-14-6): 100%

Identification number(s):

ELINCS Number: 419-560-6

Index number: 607-630-00-0

3 Hazards identification

Hazard description:



C Corrosive

Information pertaining to particular dangers for man and environment

R 20 Harmful by inhalation.

R 34 Causes burns.

R 43 May cause sensitization by skin contact.

R 52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Classification system

HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)

| | |
|------------|---|
| HEALTH | 2 |
| FIRE | 1 |
| REACTIVITY | 1 |

Health (acute effects) = 2

Flammability = 1

Reactivity = 1

GHS label elements



Danger

3.2/1B - Causes severe skin burns and eye damage.



Warning

3.1/4 - Harmful if inhaled.

3.4/1 - May cause an allergic skin reaction.

4.1/3 - Harmful to aquatic life with long lasting effects.

Prevention:

Do not breathe dust/fume/gas/mist/vapours/spray.

Avoid breathing dust/fume/gas/mist/vapours/spray.

Wash thoroughly after handling.

Use only outdoors or in a well-ventilated area.

Contaminated work clothing should not be allowed out of the workplace.

Avoid release to the environment.

Wear protective gloves/protective clothing/eye protection/face protection.

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Response:

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

IF ON SKIN: Wash with plenty of soap and water.

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Immediately call a POISON CENTER or doctor/physician.

Call a POISON CENTER or doctor/physician if you feel unwell.

Specific treatment (see label).

If skin irritation or rash occurs: Get medical advice/attention.

Wash contaminated clothing before reuse.

Storage:

Store locked up.

Disposal:

Dispose of contents/container in accordance with local/regional/national/international regulations.

4 First aid measures

After inhalation

Supply fresh air. If required, provide artificial respiration. Keep patient warm.

Seek immediate medical advice.

After skin contact

Immediately wash with water and soap and rinse thoroughly.

Seek immediate medical advice.

After eye contact

Rinse opened eye for several minutes under running water. Then consult a doctor.

After swallowing Seek immediate medical advice.

5 Fire fighting measures

Suitable extinguishing agents

Carbon dioxide, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

Special hazards caused by the material, its products of combustion or resulting gases:

In case of fire, the following can be released:

Carbon monoxide and carbon dioxide

Silicon oxide

Protective equipment:

Wear self-contained respirator.

Wear fully protective impervious suit.

6 Accidental release measures

Person-related safety precautions:

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Measures for environmental protection:

Do not allow material to be released to the environment without proper governmental permits.

Measures for cleaning/collecting:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

Additional information:

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7 Handling and storage

Handling**Information for safe handling:**

Handle under dry protective gas.

Keep container tightly sealed.

Ensure good ventilation at the workplace.

Information about protection against explosions and fires: Keep ignition sources away.**Storage****Requirements to be met by storerooms and receptacles:** No special requirements.

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Information about storage in one common storage facility:

Do not store together with acids.

Store away from oxidizing agents.

Store in the dark.

Protect from heat.

Store away from water/moisture.

Further information about storage conditions:

Store under dry inert gas.

This product is moisture sensitive.

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

Protect from humidity and water.

Protect from exposure to light.

8 Exposure controls and personal protection**Additional information about design of technical systems:**

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Components with limit values that require monitoring at the workplace: Not required.**Additional information:** No data**Personal protective equipment****General protective and hygienic measures**

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Avoid contact with the skin.

Avoid contact with the eyes and skin.

Breathing equipment: Use suitable respirator when high concentrations are present.**Protection of hands:**

Impervious gloves

Check protective gloves prior to each use for their proper condition.

Material of gloves

The selection of suitable gloves not only depends on the material, but also on quality.

Quality will vary from manufacturer to manufacturer.

Eye protection: Safety glasses**Body protection:** Protective work clothing.**9 Physical and chemical properties:****General Information**

| | |
|---------------|----------------|
| Form: | Liquid |
| Color: | Colorless |
| Odor: | Not determined |

Change in condition

| | |
|---|-------------------------------|
| Melting point/Melting range: | Not determined |
| Boiling point/Boiling range: | 95-100°C (203-212°F) (3mm Hg) |
| Sublimation temperature / start: | Not determined |

| | |
|---------------------|---------------|
| Flash point: | 123°C (253°F) |
|---------------------|---------------|

| | |
|------------------------------|----------------|
| Ignition temperature: | Not determined |
|------------------------------|----------------|

| | |
|-----------------------------------|----------------|
| Decomposition temperature: | Not determined |
|-----------------------------------|----------------|

| | |
|-----------------------------|---|
| Danger of explosion: | Product does not present an explosion hazard. |
|-----------------------------|---|

Explosion limits:

| | |
|---------------|----------------|
| Lower: | Not determined |
| Upper: | Not determined |

| | |
|------------------------|----------------|
| Vapor pressure: | Not determined |
|------------------------|----------------|

| | |
|--------------------------------|-------------------------|
| Density at 20°C (68°F): | 1.059 g/cm ³ |
|--------------------------------|-------------------------|

| | |
|--|--------------|
| Solubility in / Miscibility with Water: | (hydrolyzes) |
|--|--------------|

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10 Stability and reactivity

Thermal decomposition / conditions to be avoided:

Decomposition will not occur if used and stored according to specifications.

Danger of containers bursting upon heating.

Stable until: Depletion of inhibitor.
Materials to be avoided:

Water/moisture

Acids

Oxidizing agents

Ultraviolet radiation

Free radical initiators

Dangerous reactions

Danger of polymerization

Spontaneous polymerization can be caused in unstabilized product e.g. by ambient heat

Dangerous products of decomposition:

Carbon monoxide and carbon dioxide

Silicon oxide

Additional information:

Unless inhibited, the product can polymerize resulting in a temperature and pressure increase that may rupture the container.

11 Toxicological information

Acute toxicity:
LD/LC50 values that are relevant for classification:

| | | |
|--------------------|--------|------------------|
| Oral | LD50 | 1 mL/kg (rat) |
| Dermal | LD50 | 1 mL/kg (rabbit) |
| Irritation of eyes | severe | 100 µL (rabbit) |

Primary irritant effect:
on the skin: Corrosive effect on skin and mucous membranes.**on the eye:** Strong corrosive effect.**Sensitization:** Sensitization possible through skin contact.
Subacute to chronic toxicity:
Subacute to chronic toxicity:

The Registry of Toxic Effects of Chemical Substances (RTECS) reports the following effects in laboratory animals:

Behavioral - somnolence (general depressed activity).

Blood - hemorrhage.

Kidney, Ureter, Bladder - other changes in urine composition.

Gastrointestinal - other changes.

Musculoskeletal - other changes.

Subacute to chronic toxicity:

Corrosive materials are acutely destructive to the respiratory tract, eyes, skin and digestive tract. Eye contact may result in permanent damage and complete vision loss. Inhalation may result in respiratory effects such as inflammation, edema, and chemical pneumonitis. May cause coughing, wheezing, laryngitis, shortness of breath, headache, nausea and vomiting. Ingestion may cause damage to the mouth, throat and esophagus. May cause skin burns or irritation depending on the severity of the exposure.

Organic silicon compounds are generally of low toxicity. Those exhibiting moisture sensitivity may be strongly irritating or corrosive on contact.

Additional toxicological information:

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

Swallowing will lead to a strong corrosive effect on mouth and throat and to the danger of perforation of esophagus and stomach.

No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

12 Ecological information:

Ecotoxicological effects:
Remark: Harmful to fish
General notes:

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

Do not allow material to be released to the environment without proper governmental permits.

Harmful to aquatic organisms

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13 Disposal considerations

Product:

Recommendation Consult state, local or national regulations to ensure proper disposal.

Uncleaned packagings:

Recommendation: Disposal must be made according to official regulations.

14 Transport information

DOT regulations:



Hazard class: 8
 Identification number: UN1760
 Packing group: III
 Proper shipping name (technical name): CORROSIVE LIQUID, N.O.S. (3-(Acryloyloxy)propyltrimethoxysilane)
 Label: 8

Land transport ADR/RID (cross-border)



ADR/RID class: 8 (C9) Corrosive substances
 Danger code (Kemler): 80
 UN-Number: 1760
 Packaging group: III
 Description of goods: 1760 CORROSIVE LIQUID, N.O.S. (3-(Acryloyloxy)propyltrimethoxysilane)

Maritime transport IMDG:



IMDG Class: 8
 UN Number: 1760
 Label: 8
 Packaging group: III
 EMS Number: F-A, S-B
 Proper shipping name: CORROSIVE LIQUID, N.O.S. (3-(Acryloyloxy)propyltrimethoxysilane)

Air transport ICAO-TI and IATA-DGR:



ICAO/IATA Class: 8
 UN/ID Number: 1760
 Label: 8
 Packaging group: III
 Proper shipping name: CORROSIVE LIQUID, N.O.S. (3-(Acryloyloxy)propyltrimethoxysilane)

UN "Model Regulation": UN1760, CORROSIVE LIQUID, N.O.S., 8, III

15 Regulations

Product related hazard informations:

Hazard symbols:

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Risk phrases:

- 20 Harmful by inhalation.
 34 Causes burns.
 43 May cause sensitization by skin contact.
 52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Safety phrases:

- 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
 45 In case of accident or if you feel unwell, seek medical advice immediately.
 61 Avoid release to the environment. Refer to special instructions/Safety data sheets

National regulations

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.
 Some or all of the components of this product are not listed on the Canadian Domestic Substances List (DSL) or the Canadian Non-Domestic Substances List (NDSL).

Information about limitation of use: For use only by technically qualified individuals.

16 Other information:

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing MSDS: Health, Safety and Environmental Department.

Contact: Zachariah Holt

Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
 RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
 IMDG: International Maritime Code for Dangerous Goods
 DOT: US Department of Transportation
 IATA: International Air Transport Association
 IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
 ICAO: International Civil Aviation Organization
 ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)
 GHS: Globally Harmonized System of Classification and Labelling of Chemicals
 EINECS: European Inventory of Existing Commercial Chemical Substances
 CAS: Chemical Abstracts Service (division of the American Chemical Society)
 HMIS: Hazardous Materials Identification System (USA)
 LC50: Lethal concentration, 50 percent
 LD50: Lethal dose, 50 percent

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