

## SAFETY DATA SHEET

Version 6.3  
Revision Date 09/13/2020  
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**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifiers**

Product name : Aluminum-tri-sec-butoxide

Product Number : 511609  
Brand : Aldrich  
CAS-No. : 2269-22-9

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

Identified uses : Laboratory chemicals, Synthesis of substances

**1.3 Details of the supplier of the safety data sheet**

Company : Sigma-Aldrich Inc.  
3050 SPRUCE ST  
ST. LOUIS MO 63103  
UNITED STATES

Telephone : +1 314 771-5765  
Fax : +1 800 325-5052

**1.4 Emergency telephone**

Emergency Phone # : 800-424-9300 CHEMTREC (USA) +1-703-  
527-3887 CHEMTREC (International) 24  
Hours/day; 7 Days/week

**SECTION 2: Hazards identification****2.1 Classification of the substance or mixture****GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**

Flammable liquids (Category 3), H226  
Acute toxicity, Oral (Category 4), H302  
Acute toxicity, Dermal (Category 3), H311

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

**2.2 GHS Label elements, including precautionary statements**

Pictogram



Signal word : Danger

Hazard statement(s)  
H226 : Flammable liquid and vapor.

|                            |                                                                                                              |
|----------------------------|--------------------------------------------------------------------------------------------------------------|
| H302                       | Harmful if swallowed.                                                                                        |
| H311                       | Toxic in contact with skin.                                                                                  |
| Precautionary statement(s) |                                                                                                              |
| P210                       | Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.                                          |
| P233                       | Keep container tightly closed.                                                                               |
| P240                       | Ground/bond container and receiving equipment.                                                               |
| P241                       | Use explosion-proof electrical/ ventilating/ lighting/ equipment.                                            |
| P242                       | Use only non-sparking tools.                                                                                 |
| P243                       | Take precautionary measures against static discharge.                                                        |
| P264                       | Wash skin thoroughly after handling.                                                                         |
| P270                       | Do not eat, drink or smoke when using this product.                                                          |
| P280                       | Wear protective gloves/ protective clothing/ eye protection/ face protection.                                |
| P301 + P312                | IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell.                                               |
| P303 + P361 + P353         | IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower. |
| P312                       | Call a POISON CENTER/ doctor if you feel unwell.                                                             |
| P322                       | Specific measures (see supplemental first aid instructions on this label).                                   |
| P330                       | Rinse mouth.                                                                                                 |
| P361                       | Remove/ Take off immediately all contaminated clothing.                                                      |
| P363                       | Wash contaminated clothing before reuse.                                                                     |
| P370 + P378                | In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.                        |
| P403 + P235                | Store in a well-ventilated place. Keep cool.                                                                 |
| P405                       | Store locked up.                                                                                             |
| P501                       | Dispose of contents/ container to an approved waste disposal plant.                                          |

### 2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

|                  |                                                    |
|------------------|----------------------------------------------------|
| Synonyms         | : Aluminum sec-butoxide                            |
| Formula          | : C <sub>12</sub> H <sub>27</sub> AlO <sub>3</sub> |
| Molecular weight | : 246.32 g/mol                                     |
| CAS-No.          | : 2269-22-9                                        |
| EC-No.           | : 218-871-2                                        |

| Component                           | Classification                                                   | Concentration |
|-------------------------------------|------------------------------------------------------------------|---------------|
| <b>Aluminium tri-sec-butanolate</b> |                                                                  |               |
|                                     | Flam. Liq. 3; Acute Tox. 4;<br>Acute Tox. 3; H226, H302,<br>H311 | <= 100 %      |

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

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## SECTION 4: First aid measures

### 4.1 Description of first-aid measures

#### General advice

Consult a physician. Show this material 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

Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

#### In case of eye contact

Flush eyes with water as a precaution.

#### 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

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## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

#### Suitable extinguishing media

Small (incipient) fires must be extinguished with alcohol resistant foam, dry chemical powder or carbon dioxide. Large amounts of water are ineffective. Cool containers with large amounts of water.

### 5.2 Special hazards arising from the substance or mixture

Carbon oxides, Aluminum oxide  
Combustible.

### 5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

### 5.4 Further information

Use water spray to cool unopened containers.

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## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors 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).

## **6.4 Reference to other sections**

For disposal see section 13.

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## **SECTION 7: Handling and storage**

### **7.1 Precautions for safe handling**

Avoid contact with skin and eyes. Avoid inhalation of vapor 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.

Store under inert gas. Hydrolyzes readily. Air and moisture sensitive.

Storage class (TRGS 510): 3: Flammable liquids

### **7.3 Specific end use(s)**

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

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## **SECTION 8: Exposure controls/personal protection**

### **8.1 Control parameters**

**Ingredients with workplace control parameters**

### **8.2 Exposure controls**

#### **Appropriate engineering controls**

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

#### **Personal protective equipment**

##### **Eye/face protection**

Face shield and safety glasses 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.

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min  
Material tested: Dermatrill® (KCL 740 / Aldrich Z677272, Size M)

Splash contact  
Material: Nitrile rubber  
Minimum layer thickness: 0.11 mm  
Break through time: 480 min  
Material tested: Dermatrill® (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 EC approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific 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, Flame retardant antistatic protective clothing., 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 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).

### **Control of environmental exposure**

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

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## **SECTION 9: Physical and chemical properties**

### **9.1 Information on basic physical and chemical properties**

- |                                            |                                                                    |
|--------------------------------------------|--------------------------------------------------------------------|
| a) Appearance                              | Form: liquid<br>Color: light yellow                                |
| b) Odor                                    | No data available                                                  |
| c) Odor Threshold                          | No data available                                                  |
| d) pH                                      | No data available                                                  |
| e) Melting point/freezing point            | No data available                                                  |
| f) Initial boiling point and boiling range | 200 - 206 °C 392 - 403 °F at 40 hPa - lit.                         |
| g) Flash point                             | 26 °C (79 °F) - closed cup                                         |
| h) Evaporation rate                        | No data available                                                  |
| i) Flammability (solid, gas)               | No data available                                                  |
| j) Upper/lower flammability or             | Upper explosion limit: 9.8 %(V)<br>Lower explosion limit: 1.7 %(V) |

explosive limits

- |                                              |                                          |
|----------------------------------------------|------------------------------------------|
| k) Vapor pressure                            | No data available                        |
| l) Vapor density                             | No data available                        |
| m) Relative density                          | 0.967 g/cm <sup>3</sup> at 25 °C (77 °F) |
| n) Water solubility                          | No data available                        |
| o) Partition coefficient:<br>n-octanol/water | No data available                        |
| p) Autoignition<br>temperature               | No data available                        |
| q) Decomposition<br>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

No data available

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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

No data available

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

Vapors may form explosive mixture with air.

### 10.4 Conditions to avoid

Air Avoid moisture.

Heat, flames and sparks.

### 10.5 Incompatible materials

Strong acids, Strong oxidizing agents

### 10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides,  
Aluminum oxide

Other decomposition products - No data available

In the event of fire: see section 5

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## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

LD50 Oral - Rat - 401 mg/kg

Remarks: (External MSDS)

absorption

Inhalation: No data available  
LD50 Dermal - Rabbit - 402 mg/kg  
Remarks: (External MSDS)  
Dermal: absorption  
No data available

**Skin corrosion/irritation**

No data available

**Serious eye damage/eye irritation**

No data available

**Respiratory or skin sensitization**

No data available

**Germ cell mutagenicity**

No data available

**Carcinogenicity**

IARC: No ingredient 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 ingredient 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 ingredient 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 on OSHA's list of regulated carcinogens.

**Reproductive toxicity**

No data available

**Specific target organ toxicity - single exposure**

No data available

Acute oral toxicity - Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.

**Specific target organ toxicity - repeated exposure**

No data available

**Aspiration hazard**

No data available

**Additional Information**

RTECS: Not available

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

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**SECTION 12: Ecological information**

**12.1 Toxicity**

No data available

**12.2 Persistence and degradability**

No data available

### 12.3 Bioaccumulative potential

No data available

### 12.4 Mobility in soil

No data available

### 12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

### 12.6 Other adverse effects

No data available

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## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

#### Product

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

#### Contaminated packaging

Dispose of as unused product.

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## SECTION 14: Transport information

#### DOT (US)

UN number: 1992    Class: 3 (6.1)    Packing group: III  
Proper shipping name: Flammable liquids, toxic, n.o.s. (Aluminium tri-sec-butanolate)  
Poison Inhalation Hazard: No

#### IMDG

UN number: 1992    Class: 3 (6.1)    Packing group: III    EMS-No: F-E, S-D  
Proper shipping name: FLAMMABLE LIQUID, TOXIC, N.O.S. (Aluminium tri-sec-butanolate)

#### IATA

UN number: 1992    Class: 3 (6.1)    Packing group: III  
Proper shipping name: Flammable liquid, toxic, n.o.s. (Aluminium tri-sec-butanolate)

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## SECTION 15: Regulatory information

#### SARA 302 Components

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

#### SARA 313 Components

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

Fire Hazard, Acute Health Hazard

**Massachusetts Right To Know Components**

No components are subject to the Massachusetts Right to Know Act.

**Pennsylvania Right To Know Components**

Aluminium tri-sec-butanolate

CAS-No.  
2269-22-9

Revision Date

**New Jersey Right To Know Components**

Aluminium tri-sec-butanolate

CAS-No.  
2269-22-9

Revision Date

**California Prop. 65 Components**

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

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**SECTION 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 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](http://www.sigma-aldrich.com) and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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