

## SAFETY DATA SHEET

Version 6.0  
Revision Date 09/18/2019  
Print Date 04/04/2020**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifiers**

Product name : Aluminum

Product Number : 653608

Brand : Aldrich

Index-No. : 013-001-00-6

CAS-No. : 7429-90-5

**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 Street  
ST. LOUIS MO 63103  
UNITED STATES

Telephone : +1 314 771-5765

Fax : +1 800 325-5052

**1.4 Emergency telephone number**

Emergency Phone # : +1-703-527-3887

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

Pyrophoric solids (Category 1), H250  
Chemicals which, in contact with water, emit flammable gases (Category 2), H261  
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)  
H250  
H261

Catches fire spontaneously if exposed to air.  
In contact with water releases flammable gases.

Precautionary statement(s)	
P210	Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P222	Do not allow contact with air.
P223	Do not allow contact with water.
P231 + P232	Handle under inert gas. Protect from moisture.
P280	Wear protective gloves/ eye protection/ face protection.
P335 + P334	Brush off loose particles from skin. Immerse in cool water/ wrap in wet bandages.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P402 + P404	Store in a dry place. Store in a closed container.
P422	Store contents under inert gas.
P501	Dispose of contents/ container to an approved waste disposal plant.

### 2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

Combustible dust

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## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Formula	: Al
Molecular weight	: 26.98 g/mol
CAS-No.	: 7429-90-5
EC-No.	: 231-072-3
Index-No.	: 013-001-00-6

Component	Classification	Concentration
<b>Aluminium powder (Pyrophoric)</b>		
	Pyr. Sol. 1; Water-react. 2; H250, H261	<= 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 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. Consult a physician.

#### In case of eye contact

Flush eyes with water as a precaution.

**If swallowed**

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**

Dry powder Dry sand

**Unsuitable extinguishing media**

Do NOT use water jet.

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

Aluminum oxide

**5.3 Advice for firefighters**

Wear self-contained breathing apparatus for firefighting if necessary.

**5.4 Further information**

No data available

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**SECTION 6: Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures**

Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe 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**

Sweep up and shovel. 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). Do not flush with water. Keep in suitable, closed containers for disposal. Contain spillage, pick up with an electrically protected vacuum cleaner or by wet-brushing and transfer to a 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**

Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.

Provide appropriate exhaust ventilation at places where dust is formed. Keep away from sources of ignition - No smoking.

For precautions see section 2.2.

**7.2 Conditions for safe storage, including any incompatibilities**

Keep container tightly closed in a dry and well-ventilated place.

Never allow product to get in contact with water during storage.

Store under inert gas. Keep in a dry place.

Storage class (TRGS 510): 4.2: Pyrophoric and self-heating hazardous materials

**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****Components with workplace control parameters**

Component	CAS-No.	Value	Control parameters	Basis
Aluminium powder (Pyrophoric)	7429-90-5	TWA	5 mg/m <sup>3</sup>	USA. NIOSH Recommended Exposure Limits
		TWA	10 mg/m <sup>3</sup>	USA. NIOSH Recommended Exposure Limits
		TWA	15 mg/m <sup>3</sup>	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	5 mg/m <sup>3</sup>	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	5 mg/m <sup>3</sup>	USA. NIOSH Recommended Exposure Limits
		TWA	5 mg/m <sup>3</sup>	USA. NIOSH Recommended Exposure Limits
		TWA	1 mg/m <sup>3</sup>	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Lower Respiratory Tract irritation Pneumoconiosis Neurotoxicity Not classifiable as a human carcinogen varies		

## 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

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.

Protective gloves against thermal risks

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 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

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 particle respirator type N100 (US) or type P3 (EN 143) 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: powder                                     |
| b) Odour  | No data available                                |
| c) Odour Threshold                              | No data available                                |
| d) pH   | No data available                                |
| e) Melting point/freezing point                 | Melting point/range: 660.37 °C (1220.67 °F)      |
| f) Initial boiling point and boiling range      | 2,460 °C 4,460 °F                                |
| g) Flash point                                  | ( )Not applicable                                |
| h) Evaporation rate                             | No data available                                |
| i) Flammability (solid, gas)                    | May form combustible dust concentrations in air. |
| j) Upper/lower flammability or explosive limits | No data available                                |
| k) Vapour pressure                              | No data available                                |
| l) Vapour density                               | No data available                                |
| m) Relative density                             | 2.7 g/mL at 25 °C (77 °F)                        |
| n) Water solubility                             | No data available                                |
| o) Partition coefficient: n-octanol/water       | No data available                                |
| p) Auto-ignition temperature                    | Catches fire spontaneously if exposed to air.    |
| 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

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

Reacts violently with water.

#### **10.4 Conditions to avoid**

Exposure to moisture

#### **10.5 Incompatible materials**

acids, Acid chlorides, Halogens, Oxidizing agents, Bases, Oxygen

#### **10.6 Hazardous decomposition products**

Hazardous decomposition products formed under fire conditions. - 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**

No data available

Inhalation: No data available

Dermal: No data available

No data available

##### **Skin corrosion/irritation**

No data available

##### **Serious eye damage/eye irritation**

No data available

##### **Respiratory or skin sensitisation**

No data available

##### **Germ cell mutagenicity**

No data available

##### **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.

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 on OSHA's list of regulated carcinogens.

##### **Reproductive toxicity**

No data available

##### **Specific target organ toxicity - single exposure**

No data available

##### **Specific target organ toxicity - repeated exposure**

No data available

##### **Aspiration hazard**

No data available

##### **Additional Information**

RTECS: BD0330000

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

### 12.2 Persistence and degradability

No data available

### 12.3 Bioaccumulative potential

Bioaccumulation Salvelinus fontinalis - 56 d  
- 268 µg/l(Aluminium powder (Pyrophoric))

Bioconcentration factor (BCF): 36

### 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

Offer surplus and non-recyclable solutions to a licensed disposal company. Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. 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: 1396 Class: 4.3 Packing group: II  
Proper shipping name: Aluminum powder, uncoated  
Reportable Quantity (RQ):  
Poison Inhalation Hazard: No

### IMDG

UN number: 1396 Class: 4.3 Packing group: II EMS-No: F-G, S-O  
Proper shipping name: ALUMINIUM POWDER, UNCOATED

### IATA

UN number: 1396 Class: 4.3 Packing group: II  
Proper shipping name: Aluminium powder, uncoated



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**SECTION 15: Regulatory information****SARA 302 Components**

This material does not contain any components with a section 302 EHS TPQ.

**SARA 313 Components**

The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
Aluminium powder (Pyrophoric)	7429-90-5	1993-02-16

**SARA 311/312 Hazards**

Reactivity Hazard

**Massachusetts Right To Know Components**

	CAS-No.	Revision Date
Aluminium powder (Pyrophoric)	7429-90-5	1993-02-16

**Pennsylvania Right To Know Components**

	CAS-No.	Revision Date
Aluminium powder (Pyrophoric)	7429-90-5	1993-02-16

**California Prop. 65 Components**

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

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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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