

## Material Safety Data Sheet

Version 4.2

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1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Aluminum

Product Number : 11009

Brand : Aldrich

Supplier : Sigma-Aldrich  
3050 Spruce Street  
SAINT LOUIS MO 63103  
USA

Telephone : +1 800-325-5832

Fax : +1 800-325-5052

Emergency Phone # (For both supplier and manufacturer) : (314) 776-6555

Preparation Information : Sigma-Aldrich Corporation  
Product Safety - Americas Region  
1-800-521-8956

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2. HAZARDS IDENTIFICATION

## Emergency Overview

## OSHA Hazards

Water Reactive, Carcinogen

## GHS Classification

Pyrophoric solids (Category 1)

Substances, which in contact with water, emit flammable gases (Category 2)

Acute aquatic toxicity (Category 1)

## GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)

H250

Catches fire spontaneously if exposed to air.

H261

In contact with water releases flammable gases.

H400

Very toxic to aquatic life.

Precautionary statement(s)

P222

Do not allow contact with air.

P231 + P232

Handle under inert gas. Protect from moisture.

P273

Avoid release to the environment.

P422

Store contents under inert gas.

## HMIS Classification

Health hazard: 0

Flammability: 3

Physical hazards: 1

## NFPA Rating

Health hazard: 0

Fire: 0

Reactivity Hazard: 1

**Special hazard.:** W

#### Potential Health Effects

<b>Inhalation</b>	May be harmful if inhaled. May cause respiratory tract irritation.
<b>Skin</b>	May be harmful if absorbed through skin. May cause skin irritation.
<b>Eyes</b>	May cause eye irritation.
<b>Ingestion</b>	May be harmful if swallowed.

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### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Formula : Al  
Molecular Weight : 26.98 g/mol

Component		Concentration
<b>Aluminium</b>		
CAS-No.	7429-90-5	-
EC-No.	231-072-3	
Index-No.	013-001-00-6	

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### 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

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.

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### 5. FIREFIGHTING MEASURES

#### Suitable extinguishing media

Dry powder Carbon dioxide (CO<sub>2</sub>)

#### Extinguishing media which shall not be used for safety reasons

Water

#### Special protective equipment for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

#### Hazardous combustion products

Hazardous decomposition products formed under fire conditions. - Aluminum oxide

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### 6. ACCIDENTAL RELEASE MEASURES

#### Personal precautions

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

#### Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

#### 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).

## 7. HANDLING AND STORAGE

### Precautions for safe handling

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

### Conditions for safe storage

Keep container tightly closed in a dry and well-ventilated place.  
Never allow product to get in contact with water during storage.

Keep in a dry place.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Components with workplace control parameters

Components	CAS-No.	Value	Control parameters	Basis
Aluminium	7429-90-5	TWA	1 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
Remarks	Lower Respiratory Tract irritation Pneumoconiosis Neurotoxicity Not classifiable as a human carcinogen			
		TWA	15 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	5 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	15 mg/m3	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		TWA	5 mg/m3	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		TWA	5 mg/m3	USA. NIOSH Recommended Exposure Limits
		TWA	10 mg/m3	USA. NIOSH Recommended Exposure Limits

### Personal protective equipment

#### 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).

#### Hand 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

#### Eye 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 and 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.

#### 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	powder
Colour	no data available

### Safety data

pH	no data available
Melting point/freezing point	Melting point/range: 660.37 °C (1,220.67 °F)
Boiling point	2,460 °C (4,460 °F)
Flash point	not applicable
Ignition temperature	760 °C (1,400 °F)
Autoignition temperature	Catches fire spontaneously if exposed to air.
Lower explosion limit	no data available
Upper explosion limit	no data available
Vapour pressure	no data available
Density	2.7 g/mL at 25 °C (77 °F)
Water solubility	no data available
Partition coefficient: n-octanol/water	no data available
Relative vapour density	no data available
Odour	no data available
Odour Threshold	no data available
Evaporation rate	no data available

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## 10. STABILITY AND REACTIVITY

### Chemical stability

Stable under recommended storage conditions.

### Possibility of hazardous reactions

Reacts violently with water.

### Conditions to avoid

Exposure to moisture.

### Materials to avoid

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

### Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Aluminum oxide  
Other decomposition products - no data available

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## 11. TOXICOLOGICAL INFORMATION

### Acute toxicity

#### Oral LD50

no data available

#### Inhalation LC50

no data available

**Dermal LD50**

no data available

**Other information on acute toxicity**

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: 1 - Group 1: Carcinogenic to humans (Aluminium)

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.

**Reproductive toxicity**

no data available

**Teratogenicity**

no data available

**Specific target organ toxicity - single exposure (Globally Harmonized System)**

no data available

**Specific target organ toxicity - repeated exposure (Globally Harmonized System)**

no data available

**Aspiration hazard**

no data available

**Potential health effects**

<b>Inhalation</b>	May be harmful if inhaled. May cause respiratory tract irritation.
<b>Ingestion</b>	May be harmful if swallowed.
<b>Skin</b>	May be harmful if absorbed through skin. May cause skin irritation.
<b>Eyes</b>	May cause eye irritation.

**Signs and Symptoms of Exposure**

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

**Synergistic effects**

no data available

**Additional Information**

RTECS: Not available

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**12. ECOLOGICAL INFORMATION****Toxicity**

Toxicity to fish	mortality LOEC - Ctenopharyngodon idella - 0.1 mg/l - 96 h
	LC50 - Oncorhynchus mykiss (rainbow trout) - 0.12 mg/l - 96 h

**Persistence and degradability**

no data available

**Bioaccumulative potential**

Bioaccumulation      Salvelinus fontinalis - 56 d  
Bioconcentration factor (BCF): 36

**Mobility in soil**

no data available

**PBT and vPvB assessment**

no data available

**Other adverse effects**

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Very toxic to aquatic life.

no data available

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**13. DISPOSAL CONSIDERATIONS****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. 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.

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

UN number: 1396    Class: 4.3                      Packing group: II  
Proper shipping name: Aluminum powder, uncoated  
Marine pollutant: No  
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  
Marine pollutant: No

**IATA**

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

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**15. REGULATORY INFORMATION****OSHA Hazards**

Water Reactive, Carcinogen

**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**

	CAS-No.	Revision Date
Aluminium	7429-90-5	1994-04-01

**SARA 311/312 Hazards**

Reactivity Hazard, Chronic Health Hazard

**Massachusetts Right To Know Components**

CAS-No.	Revision Date
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Aluminium

7429-90-5

1994-04-01

**Pennsylvania Right To Know Components**

Aluminium

CAS-No.  
7429-90-5

Revision Date  
1994-04-01

**New Jersey Right To Know Components**

Aluminium

CAS-No.  
7429-90-5

Revision Date  
1994-04-01

**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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**16. OTHER INFORMATION**

**Further information**

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