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Safety

SIGMA-ALDRICH

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## Material Safety Data Sheet

Version 4.7

Revision Date 11/15/2012

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## 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Aluminum

Product Number : 518573  
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

## 2. HAZARDS IDENTIFICATION

## Emergency Overview

## OSHA Hazards

Water Reactive

## GHS Classification

Flammable solids (Category 2)

Acute aquatic toxicity (Category 1)

## GHS Label elements, including precautionary statements

Pictogram



Signal word : Warning

Hazard statement(s)

H228 : Flammable solid.

H400 : Very toxic to aquatic life.

Precautionary statement(s)

P210 : Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P273 : Avoid release to the environment.

## 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

Inhalation  
Skin  
Eyes  
Ingestion

May be harmful if inhaled. May cause respiratory tract irritation.  
May be harmful if absorbed through skin. May cause skin irritation.  
May cause eye irritation.  
May be harmful if swallowed.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Formula : Al  
Molecular Weight : 26.98 g/mol

No ingredients are hazardous according to OSHA criteria.

## 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

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

## 5. FIREFIGHTING MEASURES

## Conditions of flammability

May burn in presence of air, or emit a flammable gas in the presence of water or water vapour. Keep away from heat/sparks/open flame/hot surface/air/water. No smoking.

## Suitable extinguishing media

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

## Special protective equipment for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

## Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Aluminum oxide

## Further information

Use water spray to cool unopened containers.

## 6. ACCIDENTAL RELEASE MEASURES

## Personal precautions

Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. 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). 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

Avoid formation of dust and aerosols.

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Provide appropriate exhaust ventilation at places where dust is formed. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

#### Conditions for safe storage

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

Store under inert gas. Air and moisture sensitive.

### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

#### 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.

##### Eye protection

Safety glasses with side-shields conforming to EN166 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	flakes
Colour	no data available

#### Safety data

pH	no data available
Melting point/freezing point	Melting point/range: 660.37 °C (1,220.67 °F) - lit.
Boiling point	2,460 °C (4,460 °F) - lit.
Flash point	no data available
Flammability (solid, gas)	The substance or mixture is a flammable solid with the category 2.
Ignition temperature	760 °C (1,400 °F)
Autoignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Vapour pressure	no data available
Density	2.7 g/cm <sup>3</sup> 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

### 10. STABILITY AND REACTIVITY

#### Chemical stability

Stable under recommended storage conditions.

#### Possibility of hazardous reactions

no data available

#### Conditions to avoid

Heat, flames and sparks. Extremes of temperature and direct sunlight.

#### Materials to avoid

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

#### Thermal decomposition

Decomposes on heating. Heating can release hazardous gases.

### 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: 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.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

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**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: BD0330000

**12. ECOLOGICAL INFORMATION**

**Toxicity**

Toxicity to fish mortality LOEC - Clenopharyngodon 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**

Very toxic to aquatic life.

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

no data available

**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.

**Contaminated packaging**

Dispose of as unused product.

**14. TRANSPORT INFORMATION**

**DOT (US)**

UN number: 1396 Class: 4.3 Packing group: III  
Proper shipping name: Aluminium powder, uncoated  
Reportable Quantity (RQ):  
Marine pollutant: No  
Poison Inhalation Hazard: No

**IMDG**

UN number: 1396 Class: 4.3 Packing group: III EMS-No: F-G, S-O  
Proper shipping name: ALUMINIUM POWDER, UNCOATED (Aluminium)  
Marine pollutant: No

**IATA**

UN number: 1396 Class: 4.3 Packing group: III  
Proper shipping name: Aluminium powder, uncoated (Aluminium)

**15. REGULATORY INFORMATION**

**OSHA Hazards**

Water Reactive

**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**

SARA 313: 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**

Reactivity Hazard

**Massachusetts Right To Know Components**

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

**Pennsylvania Right To Know Components**

	CAS-No.	Revision Date
Aluminium metal flakes, 0,841-0,297 mm	7429-90-5	

**New Jersey Right To Know Components**

	CAS-No.	Revision Date
Aluminium metal flakes, 0,841-0,297 mm	7429-90-5	

**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.

**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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