Material Safety Data Sheet

Version 4.0
Revision Date 07/29/2010
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1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	Aluminum
Product Number	:	653608
Brand	:	Aldrich
Company	:	Sigma-Aldrich 3050 Spruce Street SAINT LOUIS MO 63103 USA
Telephone	:	+18003255832
Fax	:	+18003255052
Emergency Phone #	:	(314) 776-6555

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Water Reactive

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

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

3. COMPOSITION/INFORMATION ON INGREDIENTS

Formula : Al
Molecular Weight : 26.98 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
Aluminium			
7429-90-5	231-072-3	013-001-00-6	-

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.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Carbon dioxide (CO2) Dry powder

Extinguishing media which shall not be used for safety reasons
Water

Special protective equipment for fire-fighters
Wear self contained breathing apparatus for fire fighting if necessary.

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.

Store under inert gas. Keep in a dry place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value	Control parameters	Update	Basis
Aluminium	7429-90-5	TWA	1 mg/m3	2008-01-01	USA. ACGIH Threshold Limit Values (TLV)
Remarks	Lower Respiratory Tract irritation Pneumoconiosis Neurotoxicity Not classifiable as a human carcinogen: Agents which cause concern that they could be carcinogenic for humans but which cannot be assessed conclusively because of a lack of data. In vitro or animal studies do not provide indications of carcinogenicity which are sufficient to classify the agent into one of the other categories.				
		TWA	15 mg/m3	1997-08-04	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	5 mg/m3	1997-08-04	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	15 mg/m3	1989-01-19	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		TWA	5 mg/m3	1989-01-19	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000

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

Safety data

pH	no data available
Melting point	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) -
Lower explosion limit	no data available
Upper explosion limit	no data available
Density	2.7 g/mL at 25 °C (77 °F)
Water solubility	no data available

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

11. TOXICOLOGICAL INFORMATION

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)
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.
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

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

Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.

Ingestion	May be harmful if swallowed.
Skin	May be harmful if absorbed through skin. May cause skin irritation.
Eyes	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.

Additional Information
RTECS: BD0330000

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

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: 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

15. REGULATORY INFORMATION

OSHA Hazards
Water Reactive

DSL Status
All components of this product are on the Canadian DSL list.

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

Massachusetts Right To Know Components

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

Pennsylvania Right To Know Components

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

New Jersey Right To Know Components

	CAS-No.	Revision Date
Aluminium	7429-90-5	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.

16. OTHER INFORMATION

Further information

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 Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.