



# SAFETY DATA SHEET

## 1. Identification

**Product identifier** ALUMINUM HYDROXIDE

**Other means of identification**

**SDS number** 694

**Version #** 05

**Revision date** May 26, 2015.

**Other means of identification**

**Synonyms** Caustic recovery by-product

**Recommended use** Recycle, Reuse

**Recommended restrictions** For industrial use only.

**Manufacturer/Importer/Supplier/Distributor information**

**Manufacturer**

Alcoa Inc.  
201 Isabella Street  
Pittsburgh, PA 15212-5858 USA  
Health and Safety Tel: 1-412-553-4649  
Health and Safety Fax: 1-412-553-4822  
Health and Safety Email: accmsds@alcoa.com

**Emergency Information** CHEMTREC: +1-703-527-3887 +1-800-424-9300 (24 Hour Emergency Telephone, multiple languages spoken); ALCOA: +1-412-553-4001 (24 Hour Emergency Telephone, only English spoken)

**Website** For a current Safety Data Sheet, refer to Alcoa websites: [www.alcoa.com](http://www.alcoa.com) or internally at [my.alcoa.com](http://my.alcoa.com) EHS Community

## 2. Hazard(s) identification

**Classification**

This material is not considered hazardous by the OSHA Hazard Communication Standard, OSHA 29 CFR 1910.1200.

**Potential health effects**

The following statements summarize the health effects generally expected in cases of overexposures. User specific situations should be assessed by a qualified individual. Additional health information can be found in Section 11.

**Physical hazards** Not classified.

**Health hazards** Not classified.

**Environmental hazards** Not classified.

**Authority defined hazards** Not classified.

**Label elements**

**Hazard symbol** None.

**Signal word** None.

**Hazard statement** The mixture does not meet the criteria for classification.

**Precautionary statement**

**Prevention** Observe good industrial hygiene practices.

**Response** Wash hands after handling.

**Storage** Store away from incompatible materials.

**Disposal** Not available.

**Hazard(s) not otherwise classified (HNOC)** None known.

**Supplemental information** Direct contact: Can cause irritation of the eyes and skin. Dust: Can cause irritation of the upper respiratory tract.

### 3. Composition/information on ingredients

**Composition comments** Complete composition is provided below and may include some components classified as non-hazardous.

#### Mixtures

Chemical name	Common name and synonyms	CAS number	%
Aluminum hydroxide		21645-51-2	80 - 90
Water		7732-18-5	10 - 20
Sodium hydroxide		1310-73-2	<= 0.49

### 4. First-aid measures

<b>Eye contact</b>	Immediately flush eyes with plenty of water for at least 20 minutes. Consult a physician immediately.
<b>Skin contact</b>	Wash with soap and water for at least 15 minutes. Get medical attention if irritation develops or persists.
<b>Inhalation</b>	Remove to fresh air. Check for clear airway, breathing, and presence of pulse. If breathing is difficult, provide oxygen. Loosen any tight clothing on neck or chest. Provide cardiopulmonary resuscitation for persons without pulse or respirations. Consult a physician.
<b>Ingestion</b>	If swallowed, dilute by drinking water. Recommend quantities up to 30 mL (~1 oz.) in children and 250 mL (~9 oz.) in adults. Never give anything by mouth to a victim who is unconscious or is having convulsions. Do NOT induce vomiting. Consult a physician.
<b>Most important symptoms/effects, acute and delayed</b>	Direct contact with eyes may cause temporary irritation.
<b>Indication of immediate medical attention and special treatment needed</b>	Provide general supportive measures and treat symptomatically.

### 5. Fire-fighting measures

<b>Suitable extinguishing media</b>	Use water spray to cool exposed containers. Move undamaged containers away from heat or flame, if possible. Use fire fighting methods and materials that are appropriate for surrounding fire.
<b>Unsuitable extinguishing media</b>	None known.
<b>Specific hazards arising from the chemical</b>	Heating the material above 392°F (200°C) will result in a sudden release of water vapor (steam).
<b>Special protective equipment and precautions for firefighters</b>	Firefighters should wear NIOSH approved, positive pressure, self-contained breathing apparatus and full protective clothing when appropriate.
<b>Fire fighting equipment/instructions</b>	Use standard fire fighting procedures and consider the hazards of other involved materials. In the event of fire, cool tanks with water spray.
<b>General fire hazards</b>	Non-combustible.
<b>Explosion data</b>	
<b>Sensitivity to mechanical impact</b>	Not sensitive.
<b>Sensitivity to static discharge</b>	Not sensitive.

### 6. Accidental release measures

<b>Personal precautions, protective equipment and emergency procedures</b>	Use personal protection recommended in Section 8 of the SDS.
<b>Personal precautions, protective equipment and emergency procedures</b>	
<b>For emergency responders</b>	Not available.
<b>Evacuation procedures</b>	None necessary.
<b>Methods and materials for containment and cleaning up</b>	Avoid generating dust. Recover spills for reuse. Pick up mechanically.
<b>Environmental precautions</b>	No special environmental precautions required.

## 7. Handling and storage

<b>Handling</b>	Avoid contact with skin and eyes. Avoid generating dust.
<b>Storage</b>	Store away from incompatible materials (see Section 10 of the SDS).

## 8. Exposure controls/personal protection

### Occupational exposure limits

#### U.S. - OSHA

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	TWA	2 mg/m3

#### ACGIH

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	Ceiling	2 mg/m3

#### US ACGIH Threshold Limit Values: Ceiling Limit Value: mg/m3

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	Ceiling	2 mg/m3

#### US ACGIH Threshold Limit Values: Time Weighted Average (TWA): mg/m3, non-standard units

Components	Type	Value	Form
Aluminum hydroxide (CAS 21645-51-2)	TWA	1 mg/m3	Respirable fraction.

#### Alcoa

Components	Type	Value	Form
Aluminum hydroxide (CAS 21645-51-2)	TWA	3 mg/m3	Respirable fraction
		10 mg/m3	Inhalable fraction

**Appropriate engineering controls** Use with adequate ventilation to meet the limits listed in Section 8.

### Individual protection measures, such as personal protective equipment

**Eye/face protection** Wear safety glasses with side shields.

#### Skin protection

**Hand protection** Wear impervious gloves to avoid direct skin contact.

**Other** Wear appropriate gloves and clothing to avoid direct skin contact.

**Respiratory protection** Use NIOSH-approved respiratory protection as specified by an Industrial Hygienist or other qualified professional if concentrations exceed the limits listed in Section 8. Suggested respiratory protection: N95.

**Thermal hazards** Not applicable.

**General hygiene considerations** Handle in accordance with good industrial hygiene and safety practice.

**Control parameters** Follow standard monitoring procedures.

**Environmental exposure controls** No special environmental precautions required.

## 9. Physical and chemical properties

**Form** Solid; free-flowing, crystalline powder or wet cake.

**Color** White.

**Odor** Caustic odor.

**Odor threshold** Not determined

**pH** 10 (water slurry)

**Melting point/freezing point** 392 °F (200 °C) Decomposes

**Initial boiling point and boiling range** Not applicable

**Flash point** Not applicable

<b>Evaporation rate</b>	Not applicable
<b>Flammability (solid, gas)</b>	Not applicable.
<b>Upper/lower flammability or explosive limits</b>	
<b>Flammability limit - upper (%)</b>	Not applicable
<b>Flammability limit - lower (%)</b>	Not applicable
<b>Explosive properties</b>	Not an explosion hazard.
<b>Vapor pressure</b>	Not applicable
<b>Vapor density</b>	Not applicable
<b>Relative density</b>	Not determined.
<b>Solubility(ies)</b>	Insoluble
<b>Partition coefficient (n-octanol/water)</b>	Not applicable
<b>Auto-ignition temperature</b>	Not applicable
<b>Decomposition temperature</b>	392 °F (200 °C)
<b>Viscosity</b>	Not applicable

## 10. Stability and reactivity

<b>Reactivity</b>	The product is stable and non-reactive under normal conditions of use, storage and transport.
<b>Chemical stability</b>	Stable under normal conditions of use, storage, and transportation.
<b>Possibility of hazardous reactions</b>	Hazardous polymerization does not occur.
<b>Conditions to avoid</b>	Heating the material above 392°F (200°C) will result in a sudden release of water vapor (steam). Precautions must be taken to dissipate the vapor and any pressure that may be generated. A sudden increase in pressure could cause damage or explosion in enclosed equipment.
<b>Incompatible materials</b>	Strong acids and strong bases.
<b>Hazardous decomposition products</b>	No hazardous decomposition products are known.

## 11. Toxicological information

### Health effects associated with ingredients

Aluminum hydroxide: Low health risk by inhalation. Generally considered to be biologically inert.

Sodium hydroxide: Can cause severe irritation and burns of the eyes, skin and upper respiratory tract. Eye contact: Can cause corrosive burns and permanent injury (including blindness). Skin contact: Can cause corrosive burns and permanent injury. Chronic overexposures: Can cause respiratory tract damage. Ingestion: Can cause severe irritation and burns of the gastrointestinal tract.

### Health effects associated with compounds formed during processing

No new/additional compounds are expected to be formed during processing.

### Information on likely routes of exposure

<b>Eye contact</b>	Direct contact: Can cause irritation of the eyes.
<b>Skin contact</b>	Direct contact: Can cause irritation of the skin.
<b>Inhalation</b>	Dust: Can cause irritation of the upper respiratory tract.
<b>Ingestion</b>	Can cause irritation of the gastrointestinal tract.

**Symptoms related to the physical, chemical and toxicological characteristics** Irritating to eyes, respiratory system and skin.

### Information on toxicological effects

Components	Species	Test Results
Sodium hydroxide (CAS 1310-73-2)		
<u>Acute</u>		
<b>Dermal</b>		
LD50	Rabbit	1350 mg/kg

Components	Species	Test Results
Other LD50	Mouse	40 mg/kg
<b>Acute toxicity</b>		
<b>Skin corrosion/irritation</b>	Non-corrosive. Based on available data, the classification criteria are not met.	
<b>Serious eye damage/eye irritation</b>	Direct contact with eyes may cause temporary irritation.	
<b>Respiratory or skin sensitization</b>		
<b>Respiratory sensitization</b>	Not a respiratory sensitizer. Based on available data, the classification criteria are not met.	
<b>Skin sensitization</b>	Not available.	
<b>Germ cell mutagenicity</b>	Contains no ingredient listed as a mutagen. Based on available data, the classification criteria are not met.	
<b>Carcinogenicity</b>	Not classified. Contains no ingredient listed as a carcinogen	
<b>Reproductive toxicity</b>	Contains no ingredient listed as toxic to reproduction. Based on available data, the classification criteria are not met.	
<b>Routes of exposure</b>	Inhalation. Ingestion. Skin contact. Eye contact.	
<b>Specific target organ toxicity - single exposure</b>	Not classified. Based on available data, the classification criteria are not met.	
<b>Specific target organ toxicity - repeated exposure</b>	Not classified. Based on available data, the classification criteria are not met.	
<b>Aspiration hazard</b>	Not an aspiration hazard.	
<b>Chronic effects</b>	Based on available data, the classification criteria are not met. Not applicable.	
<b>Further information</b>	None known.	

## 12. Ecological information

**Ecotoxicity** This material is not expected to be harmful to aquatic life.

Components	Species	Test Results
Sodium hydroxide (CAS 1310-73-2)		
<b>Aquatic</b>		
Crustacea	EC50	Water flea (Ceriodaphnia dubia) 34.59 - 47.13 mg/l, 48 hours
	LC50	Cockle (Cerastoderma edule) 330 - 1000 mg/l, 48 hours
		Common shrimp, sand shrimp (Crangon crangon) 33 - 100 mg/l, 48 hours
Fish	LC50	Bony fish superclass (Osteichthyes) 33 - 100 mg/l, 48 hours
		Western mosquitofish (Gambusia affinis) 125 mg/l, 48 hours 125 mg/l, 96 hours
<b>Persistence and degradability</b>	The product is not expected to be biodegradable.	
<b>Bioaccumulative potential</b>	The product is not bioaccumulating.	
<b>Mobility in soil</b>	Not considered mobile.	
<b>Mobility in general</b>	Not considered mobile.	
<b>Other adverse effects</b>	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.	

## 13. Disposal considerations

<b>Disposal instructions</b>	Reuse or recycle material whenever possible. If reuse or recycling is not possible, disposal must be made according to local or governmental regulations.
<b>Local disposal regulations</b>	Dispose in accordance with all applicable regulations.
<b>Waste codes</b>	RCRA Status: Not federally regulated in the U.S. if disposed of "as is." RCRA waste codes other than described here may apply depending on use of the product. Status must be determined at the point of waste generation. Refer to 40 CFR 261 or state equivalent in the U.S.
<b>Waste from residues / unused products</b>	Dispose of in accordance with local regulations.
<b>Contaminated packaging</b>	Dispose of in accordance with local regulations.

## 14. Transport information

### General Shipping Information

#### Basic Shipping Information

ID number -  
Proper shipping name Not regulated  
Hazard class -  
Packing group -

### General Shipping Notes

- When "Not regulated", enter the proper freight classification, SDS Number and Product Name onto the shipping paperwork.

### Disclaimer

This section provides basic classification information and, where relevant, information with respect to specific modal regulations, environmental hazards and special precautions. Otherwise, it is presumed that the information is not available/not relevant

## 15. Regulatory information

### US federal regulations

In reference to Title VI of the Clean Air Act of 1990, this material does not contain nor was it manufactured using ozone-depleting chemicals.

#### TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

#### CERCLA Hazardous Substance List (40 CFR 302.4)

Sodium hydroxide (CAS 1310-73-2) Listed.

### Superfund Amendments and Reauthorization Act of 1986 (SARA)

Section 311/312 hazard categories Immediate Hazard - Yes  
Delayed Hazard - No  
Fire Hazard - No  
Pressure Hazard - No  
Reactivity Hazard - No

#### SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical No

#### SARA 313 (TRI reporting)

Not regulated.

### US state regulations

#### US - New Jersey RTK - Substances: Listed substance

Sodium hydroxide (CAS 1310-73-2)

#### US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

#### US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

Sodium hydroxide (CAS 1310-73-2)

#### US. Massachusetts RTK - Substance List

Sodium hydroxide (CAS 1310-73-2)

#### US. New Jersey Worker and Community Right-to-Know Act

Not regulated.

#### US. Pennsylvania RTK - Hazardous Substances

Sodium hydroxide (CAS 1310-73-2)

#### US. Pennsylvania Worker and Community Right-to-Know Law

Sodium hydroxide (CAS 1310-73-2)

#### US. Rhode Island RTK

Sodium hydroxide (CAS 1310-73-2)

#### US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

## International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

\*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

## 16. Other information, including date of preparation or last revision

### SDS Status

May 26, 2015: Change(s) in Section: 1, 2, 3, 4, 6, 8, 9, 10, 11 and 15.  
November 3, 2009: New format. Change(s) in Section: 3  
February 16, 2006: Reviewed on a periodic basis in accordance with Alcoa policy. Change(s) in Section: 1, 4 and 11  
January 28, 2003: Change(s) in Section: 10.  
Origination date: September 11, 1990

Hazardous Materials Control Committee  
Preparer: Jim Perriello, +1-865-977-2051.

SDS System Number: 115930

### Revision date

May 26, 2015.

### Version #

05

### Revision Information

Product and Company Identification: Product and Company Identification  
Hazards Identification: US Hazardous  
Composition / Information on Ingredients: Ingredients  
Physical & Chemical Properties: Multiple Properties  
Transport Information: Agency Name, Packaging Type, and Transport Mode Selection  
Regulatory Information: Canada  
HazReg Data: North America  
GHS: Classification

### Disclaimer

The information in the sheet was written based on the best knowledge and experience currently available.

## Other information

### Key/Legend:

ACGIH American Conference of Governmental Industrial Hygienists  
AICS Australian Inventory of Chemical Substances  
CAS Chemical Abstract Services  
CERCLA Comprehensive Environmental Response, Compensation, and Liability Act  
CFR Code of Federal Regulations  
CPR Cardio-pulmonary Resuscitation  
DOT Department of Transportation  
DSL Domestic Substances List (Canada)  
EC Effective Concentration  
ED Effective Dose  
EINECS European Inventory of Existing Commercial Chemical Substances  
ENCS Japan - Existing and New Chemical Substances  
EWC European Waste Catalogue  
EPA Environmental Protective Agency  
IARC International Agency for Research on Cancer  
LC Lethal Concentration  
LD Lethal Dose  
MAK Maximum Workplace Concentration (Germany) "maximale Arbeitsplatz-Konzentration"  
NDSL Non-Domestic Substances List (Canada)  
NIOSH National Institute for Occupational Safety and Health  
NTP National Toxicology Program  
OEL Occupational Exposure Limit  
OSHA Occupational Safety and Health Administration  
PIN Product Identification Number  
PMCC Pensky Marten Closed Cup  
RCRA Resource Conservation and Recovery Act  
SARA Superfund Amendments and Reauthorization Act  
SIMDUT Système d'Information sur les Matières Dangereuses Utilisées au Travail  
STEL Short Term Exposure Limit  
TCLP Toxic Chemicals Leachate Program  
TDG Transportation of Dangerous Goods  
TLV Threshold Limit Value  
TSCA Toxic Substances Control Act  
TWA Time Weighted Average  
WHMIS Workplace Hazardous Materials Information System  
m meter, cm centimeter, mm millimeter, in inch,  
g gram, kg kilogram, lb pound, µg microgram,  
ppm parts per million, ft feet

\*\*\* End of SDS \*\*\*



## Precautionary statement

### Prevention

Observe good industrial hygiene practices.

### Response

Wash hands after handling.

### Storage

Store away from incompatible materials.

### Disposal

Dispose of waste and residues in accordance with local authority requirements.

## Supplemental information

Direct contact: Can cause irritation of the eyes and skin. Dust: Can cause irritation of the upper respiratory tract.

**FIRE FIGHTING MEASURES:** Use fire fighting methods and materials that are appropriate for surrounding fire. Use water spray to cool exposed containers. Move undamaged containers away from heat or flame, if possible.

Heating the material above 392°F (200°C) will result in a sudden release of water vapor (steam).

**IN CASE OF SPILL:** Recover spills for reuse. Pick up mechanically. Avoid dust formation.

See Alcoa SDS Number 0694.

Chemtrec: +1-703-527-3887 +1-800-424-9300 (24 Hour Emergency Telephone, multiple languages spoken)

Alcoa Inc., 201 Isabella Street, Pittsburgh, PA 15212-5858 United States +1-412-553-4001 (24 Hour Emergency Telephone, English only)  
Alcoa Health and Safety Email: [accmsds@alcoa.com](mailto:accmsds@alcoa.com) Tel: +1-412-553-4649 and Fax: +1-412-553-4822

