

## Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Product Name: Activated Alumina

Version: 2.0

Revision Date: 01/07/2019

### 1. IDENTIFICATION

**Product Identifier:** Activated Alumina

**Trade Name:** AA-4, AA-6, AA-25, AA-60

**Application of the substance / the mixture**

Absorbent  
Anti-moisture agent  
Intermediate  
Preparation of catalysts  
Drier/ Catalyst  
Water treatment

**Details of the supplier of the safety data sheet**

SPX FLOW, Inc.  
4647 S.W. 40<sup>th</sup> Avenue  
Ocala, Florida 34474-5799 USA  
1-352-237-1220

**Information department:** Environmental, Health, & Safety Department

**Emergency telephone number:** CHEMTREC 1-800-424-9300 (Make reference to Product Identifier F200)

### 2. HAZARDS IDENTIFICATION

According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

**Classification of the product**

No need for classification according to GHS criteria for this product.

**Label elements**

The product does not require a hazard warning label in accordance with GHS criteria.

**Hazards not otherwise classified**

No specific dangers known, if the regulations/notes for storage and handling are considered.

### 3. COMPOSITION / INFORMATION ON INGREDIENTS

According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

<u>CAS Number</u>	<u>Weight %</u>	<u>Chemical name</u>
1344-28-1	80.0 - < 100.0%	Aluminum Oxide (Al <sub>2</sub> O <sub>3</sub> )

### 4. FIRST AID MEASURES

**Description of first aid measures:**

**General Information:** Remove contaminated clothing.

**After Inhalation:** Keep patient calm, remove to fresh air. If necessary, give oxygen. If not breathing, give artificial respiration. Seek medical attention if necessary.

**After Skin Contact:** Wash immediately with plenty of water and soap. Consult a doctor if skin irritation persists.

**After Eye Contact:** Rinse immediately for at least 15 minutes with plenty of water. Immediate medical attention required.

**After Swallowing:** No hazards anticipated. If large quantities are ingested, seek medical advice.

**Information to Physician:**

**Most important symptoms and effects, both acute and delayed:** No significant reaction of the human body to the product known.

**Indication of any immediate medical attention and special treatment needed:** Treat according to symptoms (decontamination, vital functions), no known specific antidote.

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### 5. FIRE FIGHTING MEASURES

#### Extinguishing Media

##### Suitable extinguishing agents:

Use extinguishing measures to suit surroundings.

##### Special hazards arising from the substance or mixture:

Hazards during fire-fighting: No particular hazards known.

##### Advice for Firefighters

Required Protective Equipment: Wear self-contained breathing apparatus and chemical-protective clothing.

##### Impact Sensitivity:

Remarks: Based on the chemical structure there is no shock-sensitivity.

### 6. ACCIDENTAL RELEASE MEASURES

#### Personal precautions, protective equipment and emergency procedures:

Avoid dust formation. Avoid contact with the skin, eyes and clothing. Use personal protective clothing. Information regarding personal protective measures see, Section 8.

#### Environmental precautions:

Prevent spread over a wide area (e.g. by containment or oil barriers). Do not discharge into drains/surface waters/groundwater. Contain contaminated water/firefighting water.

#### Methods and material for containment and cleaning up:

Vacuum up spilled product. Place into suitable container for disposal.

### 7. HANDLING AND STORAGE

#### Handling

##### Precautions for safe handling:

Avoid dust formation in confined areas. Avoid contact with the skin, eyes and clothing. Ensure adequate ventilation.

##### Information for Protection against Explosions and Fires:

Product is not explosive.

#### Conditions for safe storage, including any incompatibilities

##### Storage

##### Requirements to be met by storerooms and receptacles:

Segregate from reducing agents.

##### Suitable materials for containers:

Carbon steel (Iron), Low density polyethylene (LDPE), High density polyethylene (HDPE).

##### Further information about Storage Conditions:

Keep container tightly closed in a cool, well-ventilated place.

##### Storage stability:

Keep container dry.

### 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

#### Components with occupational exposure limits

##### 1344-28-1 aluminum oxide (non-fibrous)

OSHA PEL:	PEL 15 mg/m <sup>3</sup> (Total Dust)
	PEL 5 mg/m <sup>3</sup> (Respirable Fraction)
	TWA 10 mg/m <sup>3</sup> (Total Dust)
	TWA 5 mg/m <sup>3</sup> (Respirable Fraction)
ACGIH TLV:	TWA 1 mg/m <sup>3</sup> (Respirable Fraction)

##### Advice on system design:

Provide local exhaust ventilation to control dust. Provide local exhaust ventilation to maintain recommended P.E.L.

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### Exposure Controls

#### Personal Protective Equipment

##### General Protective and Hygienic Measures:

No eating, drinking, smoking or tobacco use at the place of work.

##### Breathing Equipment:

Wear a NIOSH-certified (or equivalent) particulate respirator. Observe OSHA regulations for respirator use (29 CFR 1910.134). Wear appropriate certified respirator when exposure limits may be exceeded.

##### Hand protection:

Wear chemical resistant protective gloves. Consult with glove manufacturer for testing data.

##### Eye protection:

Safety glasses with side-shields.

##### Body protection:

No body protection required if used for intended purpose and satisfying generally accepted industrial hygiene rules.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

#### General Information

##### Appearance:

Form:	Solid
Color:	Off-White
Odor:	Odorless
Odor Threshold:	Not Applicable, odor not perceivable
pH-value:	9.4 - 10.1

##### Change in condition

Boiling Point/Boiling Range:	2977°C (5391°F)
Melting Point/Melting Range:	2050°C (3722°F)

##### Flash Point:

Not Applicable.

##### Flammability (Solid or Gaseous):

Not Flammable

##### Auto igniting:

Product is not self-igniting.

##### Explosion Limits:

Lower:	For solids not relevant for classification and labelling.
Upper:	For solids not relevant for classification and labelling.

##### Vapor Pressure:

Not Applicable.

##### Density at 20°C (68°F):

3.97 - 3.99 g/cm<sup>3</sup>

##### Bulk Density at 20°C (68°F):

38.0 - 52 lb/ft<sup>3</sup>

##### Relative Density:

3.97 - 3.99 g/cm<sup>3</sup>

##### Vapor Density (air = 1):

The product is a non-volatile solid.

##### Evaporation Rate:

Not Applicable

##### Solubility in Water 20°C (68°F):

≤ 0.00002 g/l. Not soluble.

##### Partition Coefficient (N-octanol/water):

Not Determined.

##### Thermal Decomposition:

No decomposition if used correctly.

##### Viscosity:

##### Dynamic:

Not Applicable.

##### Other Information:

No further relevant information available.

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### 10. STABILITY AND REACTIVITY

#### Reactivity

No hazardous reactions if stored and handled as prescribed/indicated.

**Corrosion to metals:** No corrosive effect on metal.

**Oxidizing properties:** Not fire-propagating.

**Formation of flammable gases:** Forms no flammable gases in the presence of water.

#### Chemical stability

The product is chemically stable.

**Possibility of hazardous reactions:** The product is chemically stable. No dangerous reactions known.

**Conditions to Avoid:** Avoid deposition of dust. Avoid dust formation.

**Incompatible Materials:** Water, reducing agents.

#### Hazardous decomposition products

**Decomposition products:** No hazardous decomposition products known.

**Thermal decomposition:** No decomposition if used correctly.

### 11. TOXICOLOGICAL INFORMATION

#### Primary routes of exposure

Routes of entry for solids and liquids are ingestion and inhalation, but may include eye or skin contact. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases

#### Acute Toxicity/Effects

##### Acute toxicity:

Virtually nontoxic after a single skin contact. Virtually nontoxic by inhalation. Virtually nontoxic after a single ingestion.

##### Oral:

Type of value: LD50

Species: rat

Value: > 10,000 mg/kg (similar to OECD guideline 401)

The data refer to a preparation of the substance.

No mortality was observed. No systemic toxicity.

*Information on: Aluminum oxide*

Type of value: LD50

Species: rat

Value: > 10,000 mg/kg (similar to OECD guideline 401)

The data refer to a preparation of the substance.

No mortality was observed. No systemic toxicity.

##### Inhalation:

Type of value: LC50

Species: rat

Value: > 2.3 mg/l (similar to OECD guideline 403)

Exposure time: 4 h

Tested as dust aerosol.

No mortality was observed.

*Information on: Aluminum oxide*

Type of value: LC50

Species: rat

Value: > 2.3 mg/l (similar to OECD guideline 403)

Exposure time: 4 h

Tested as dust aerosol.

No mortality was observed.

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### Irritation / corrosion:

Inhalation of dust may cause respiratory tract irritation, coughing and breathing difficulties. Contact with the eyes or skin may cause mechanical irritation.

### Skin:

Species: rabbit

Result: non-irritant

Method: similar to OECD guideline 404.

### Eye:

Species: rabbit

Result: non-irritant

Method: similar to OECD guideline 405.

### Sensitization:

Species: guinea pig

Result: Non-sensitizing.

The data refer to a preparation of the substance.

### **Chronic Toxicity/Effects**

#### Repeated dose toxicity:

Assessment of repeated dose toxicity: Repeated inhalative uptake of the substance did not cause substance-related effects.

#### Genetic toxicity:

Assessment of mutagenicity: The substance was not mutagenic in bacteria. The substance was not mutagenic in mammalian cell culture. The substance was not genotoxic in a test with mammals. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

#### Carcinogenicity:

Assessment of carcinogenicity: In long-term animal studies in which the substance was given by inhalation, a carcinogenic effect was not observed.

#### Reproductive toxicity:

Assessment of reproduction toxicity: The results of animal studies gave no indication of a fertility impairing effect. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

#### Teratogenicity:

Assessment of teratogenicity: No indications of a developmental toxic / teratogenic effect were seen in animal studies. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

#### Other Information:

The product has not been tested. The statements on toxicology have been derived from the properties of the individual components. The product has been assessed on the basis of the components' available data. To some extent data gaps exist for individual components. According to our present knowledge and experience dangers which are not covered by the current labeling are not to be expected.

#### **Symptoms of Exposure**

No significant reaction of the human body to the product known.

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## 12. ECOLOGICAL INFORMATION

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### **Toxicity:**

#### **Aquatic Toxicity:**

Assessment of aquatic toxicity: There is a high probability that the product is not acutely harmful to aquatic organisms. No toxic effects occur within the range of solubility.

#### Toxicity to fish:

Information on: Aluminum oxide

LC50 (96 h) > 218.64 mg/l, Pimephales promelas (Fish test acute, semistatic)

The product has not been tested. The statement has been derived from substances/products of a similar structure or composition. Tested above maximum solubility.

#### Aquatic invertebrates:

Information on: Aluminum oxide

No observed effect concentration (48 h) > 100 mg/l, Daphnia magna (OECD Guideline 202, part 1, static)

Tested above maximum solubility. The details of the toxic effect relate to the nominal concentration.

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### Aquatic plants:

Information on: Aluminum oxide

No observed effect concentration (72 h) > 100 mg/l (growth rate), Selenastrum capricornutum (OECD Guideline 201, static)  
Tested above maximum solubility. The details of the toxic effect relate to the nominal concentration.

### Chronic toxicity to fish:

Information on: Aluminum oxide

EC10 (7 d) 0.0938 mg/l, Pimephales promelas (semistatic).

### Chronic toxicity to aquatic invertebrates:

Information on: Aluminum oxide

No observed effect concentration (21 d) 0.076 mg/l, Daphnia magna (OECD Guideline 211, semistatic)

The statement of the toxic effect relates to the analytically determined concentration. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

### Persistence and Degradability

#### Assessment biodegradation and elimination (H2O):

Not applicable for inorganic substances.

### Additional Information

Other ecotoxicological advice:

The product has not been tested. The statements on ecotoxicology have been derived from the properties of the individual components. The product has been assessed on the basis of the components' available data. To some extent data gaps exist for individual components. According to our present knowledge and experience dangers which are not covered by the current labeling are not to be expected.

## 13. DISPOSAL CONSIDERATION

### Waste disposal of substance:

Dispose of in accordance with local authority regulations. Check for possible recycling. Disposal requirements are dependent on the hazard classification and will vary by location and the type of disposal selected. All waste materials should be reviewed to determine the applicable hazards (testing may be necessary).

## 14. TRANSPORT INFORMATION

### Land transport:

USDOT: Not classified as a dangerous good under transport regulations.

### Sea transport:

IMDG: Not classified as a dangerous good under transport regulations.

### Air transport:

IATA/ICAO: Not classified as a dangerous good under transport regulations.

## 15. REGULATORY INFORMATION

### Federal Regulations

#### Registration status:

Chemical: TSCA, US released / listed

EPCRA 311/312 (Hazard categories): Refer to SDS section 2 for GHS hazard classes applicable for this product.

### State regulations

<u>State RTK</u>	<u>CAS Number</u>	<u>Chemical name</u>
PA	1344-28-1	Aluminum oxide
MA	1344-28-1	Aluminum oxide
NJ	1344-28-1	Aluminum oxide

### National Fire Protection Association (U.S.A.) Hazard codes:

Health: 1      Fire: 0      Reactivity: 0      Special:

### HMIS III Rating (U.S.A.)

Health: 1      Flammability: 0      Physical hazard: 0

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### 16. OTHER INFORMATION

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**Preparation Date:** January 7, 2019

**Revision Number:** 2.0

**SDS Status:** Changes in all sections.

**Supersedes:** 05/03/16.

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

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### LEGEND:

ACGIH	American Conference of Government Industrial Hygienists	m	meter
AICS	Australian Inventory of Chemical Substances	cm	centimeter
CAS	Chemical Abstract Services	mm	millimeter
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act	in	inch
CFR	Code of Federal Regulations		
CPR	Cardio-Pulmonary Resuscitation	g, gm	gram
DOT	Department of Transportation	kg	kilogram
DSL	Domestic Substances List (Canada)	lb	pound
EINECS	European Inventory of Existing Commercial Chemical Substances	µg	microgram
ENCS	Japan - Existing and New Chemical Substances		
EWA	European Waste Catalog	ppm	parts per million
EPA	Environmental Protection Agency	ft	feet
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 of Occupational Safety and Health		
NTP	National Toxicology Program		
OEL	Occupational Exposure Limit		
OSHA	Occupational Safety and Health Administration		
PEL	Permissible Exposure Limit		
PIN	Product Identification Number		
RCRA	Resource Conservation and Recovery Act		
SARA	Superfund Amendments and Reauthorization Act		
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		

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