

## SAFETY DATA SHEET

# Activated Alumina

Date of Preparation: 05/15/2014

SDS #: 004-16830-00MSDS

### SECTION 1: IDENTIFICATION

**Product Identification:** Aluminum Oxide,  $\text{Al}_2\text{O}_3 \cdot \text{H}_2\text{O}$

**CAS Number:** 1333-84-2

**Volumes:** 500 g, 2.5 kg

**Other Designations:** Activated alumina F-1, F-20, F-200, HF-200, S-100, F-1 (E), CG-20, OF-2000, Active bed supports, SRU

**Recommended Use:** Absorbent; dehydration agent; catalyst support

**Restrictions:** For laboratory use only.

**Supplier Information:**

Micromeritics Instrument Corp.  
4356 Communications Drive  
Norcross, GA 30093-2901 USA

Contact: Human Resources  
Phone: (770) 662-3620  
Fax: (770) 662-3696

**Manufacturer:** Aluminum Company of America, 181 Thorn Hill Rd., Warrendale, PA 15086-7527, Phone (412)553-2881, Emergency phone: (412)553-4001.

### SECTION 2: HAZARDS IDENTIFICATION

**GHS Classification:** Not Applicable

**Signal word:** Not Applicable

**Hazard Statement:**

H305: May be harmful if swallowed and enters airways

H316: Causes mild skin irritation

**Pictograms:**



**Precautionary Statements:**

P261 - Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray

P280 - Wear eye protection/ face protection

P285 - In case of inadequate ventilation wear respiratory protection

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

P302 + P352 - IF ON SKIN: Wash with plenty of soap and water

**Potential Health Effects**

**Primary Entry Routes:** Not Applicable

**Target Organs:** Not Applicable

**Acute Effects**

**Inhalation:** Exposure to dust particles generated from this material may cause irritation of the respiratory tract. Exposure to high concentrations may cause coughing and difficulty breathing.

**Eye:** Large amounts of dust may cause mechanical irritation.

**Skin:** May cause skin irritation. May cause dermatitis.

**Ingestion:** No toxicity (according to AIHA Hygienic Guide, Alumina)

**Carcinogenicity:** Not Applicable

**Medical Conditions Aggravated by Long-Term Exposure:** Not Applicable

**Chronic Effects:** Prolonged or repeated exposure to dust may cause pulmonary problems.

The desiccant properties of Alcoa Activated Alumina may cause irritation to the eyes and upper respiratory tract. Alumina is a low health risk by inhalation. Alumina should be treated as a nuisance dust, as specified by the American Conference of Governmental Industrial Hygienics (ACGIH).

**SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**

Ingredient Name	CAS Number	% wt or % vol
Al <sub>2</sub> O <sub>3</sub>	1333-84-2	90.0-95.0: 97.0 (max)
*Na <sub>2</sub> O		0.3-0.6: 0.6 (max)
*SiO <sub>2</sub>		0.01-0.02: 0.2 (max)
*Fe <sub>2</sub> O <sub>3</sub>		0.03-0.1: 0.1 (max)
Loss on ignition (water)		4.0-7.0: 7.0 (max)

\*Expressed as oxide equivalent

**Trace Impurities:**

Ingredient	OSHA PEL		ACGIH TLV		NIOSH REL		NIOSH
	TWA	STEL	TWA	STEL	TWA	STEL	IDLH
Alumina Dust	10, 5 (resp) mg/m <sup>3</sup>	none estab.	10 mg/m <sup>3</sup> (Total)	none estab.	none estab.	none estab.	none estab.

**ALCOA PEL:** Respirable fraction – 5

No LD<sub>50</sub> or LC<sub>50</sub> found for oral, dermal or inhalation routes of administration

## SECTION 4: FIRST-AID MEASURES

**Inhalation:** Move personnel to fresh air. If necessary, give oxygen.

**Eye Contact:** Rinse immediately with water. Seek medical attention if necessary.

**Skin Contact:** Wash immediately with water. Seek medical attention if skin irritation persists.

**Ingestion:** No immediate hazards. If large quantities are ingested, seek medical attention.

**Note to Physicians:** Not Applicable

**Special Precautions/Procedures:** Not Applicable

## SECTION 5: FIRE-FIGHTING MEASURES

**Flammability Classification:** Not Applicable

**Extinguishing Media:** Not Applicable

**Unusual Fire or Explosion Hazards:** Not an explosion hazard

**Hazardous Combustion Products:** Chlorine Trifluoride reacts violently with Aluminum Oxide producing a flame.

**Fire-Fighting Instructions:** Not Applicable

**Fire-Fighting Equipment:** Wear breathing apparatus and chemical protective clothing.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

**Spill /Leak Procedures:** Clean up using dry procedures; avoid dusting

**Small Spills:** Use appropriate tools to put the spilled solid in a convenient waste disposal container.

Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

**Large Spills:**

**Containment:** Not Applicable

**Cleanup:** Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system.

**Regulatory Requirements:** Not Applicable

## SECTION 7: HANDLING AND STORAGE

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

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

**Storage stability:** Keep container dry.

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

**Engineering Controls:** Not Applicable

**Ventilation:** Sufficient to meet exposure limits listed in Section 3.

**Administrative Controls:** Not Applicable

**Respiratory Protection:** Use NIOSH-approved respirator protection where exposure limit is or may be exceeded. Select the appropriate respirator (dust respirator, etc.) based on the actual or potential airborne contaminants and their concentrations present.

**Protective Clothing/Equipment:** Safety glasses, chemical resistant protective gloves.

**Safety Stations:** Not Applicable

**Contaminated Equipment:** Not Applicable

**Comments:** Not Applicable

**Exposure Limits:**

**OSHA PEL**

5 (mg/m<sup>3</sup>) Inhalation Respirable

15 (mg/m<sup>3</sup>)

**ACGIH TLV**

10 (mg/m<sup>3</sup>)

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

**Flash Point:** Not Applicable

**Flash Point Method:** Not Applicable

**Burning Rate:** Nonflammable

**Autoignition Temperature:** Not Applicable

**LEL:** Not Applicable

**UEL:** Not Applicable

**Physical State:** Crystalline or gelatinous granules, pellets, or powder

**Appearance and Odor:** Off-white in color; odorless

**Odor Threshold:** Not Applicable

**Vapor Pressure:** Not Applicable

**Vapor Density (Air=1):** Not Applicable

**Formula Weight:** Not Applicable

**Density:** Loose bulk: 44 - 52 lb/ft<sup>3</sup> (0.7 - 0.83 g/cc)

**Specific Gravity (H<sub>2</sub>O=1, at 4 °C):** 3.2

**pH:** ~10 (20% slurry solution)

**Water Solubility:** Insoluble; soluble in concentrated acids and alkalies

**Other Solubilities:** Not Applicable

**Boiling Point:** Not Applicable

**Freezing/Melting Point:** 3700°F (2038°C)

**Viscosity:** Not Applicable

**Refractive Index:** Not Applicable

**Surface Tension:** Not Applicable

**% Volatile:** Not Applicable

**Evaporation Rate:** Not Applicable

## SECTION 10: STABILITY AND REACTIVITY

**Stability:** Not Applicable

**Polymerization:** Not Applicable

**Chemical Incompatibilities:** None

**Conditions to Avoid:** Not Applicable

**Hazardous Decomposition Products:** Not Applicable

**Reactivity:** Generates heat with water. None with air, heat and strong oxidizers. Non-corrosive.

## SECTION 11: TOXICOLOGICAL INFORMATION

### Acute/Chronic Potential Health Effects:

**Skin:** May cause skin irritation. The product gets hot as it adsorbs water. Burns to moist or wet skin tissue may result if contact is prolonged.

**Eyes:** Dust may cause eye irritation

### Toxicity Data:

**Acute Inhalation Effects:** Slightly hazardous

**Acute Oral Effects:** Not Applicable

**Chronic Effects:** Not Applicable

**Carcinogenicity:** Not Applicable

**Mutagenicity:** Not Applicable

**Teratogenicity:** Not Applicable

## SECTION 12: ECOLOGICAL INFORMATION

**Ecotoxicity:** Not Available

**Environmental Fate:** Not Available

**Environmental Degradation:** Not Available

**Soil Absorption/Mobility:** Not Available

## SECTION 13: DISPOSAL CONSIDERATIONS

**Disposal:** Waste considered as inert material, suitable for landfill.

**Disposal Regulatory Requirements:** Not Available

**Container Cleaning and Disposal:** Not Available

## SECTION 14: TRANSPORT INFORMATION

### DOT Transportation Data (49 CFR 172.101):

**Shipping Name:** Not regulated

**Shipping Symbols:** Not Applicable

**Hazard Class:** Not regulated

**ID No.:** Not regulated

**Packing Group:** Not Applicable

**Label:** Not Applicable

**Special Provisions (172.102):**

Not Applicable

### Packaging Authorizations

a) **Exceptions:** Not Applicable

b) **Non-bulk Packaging:** Not Applicable

c) **Bulk Packaging:** Not Applicable

**Quantity Limitations**

a) **Passenger, Aircraft, or Railcar:** Not Applicable

b) **Cargo Aircraft Only:** Not Applicable

**Vessel Stowage Requirements**

a) **Vessel Stowage:** Not Applicable

b) **Other:** Not Applicable

Canadian TDG Hazard Class & PIN – Not regulated

## SECTION 15: REGULATORY INFORMATION

**EPA Regulations:** Not Applicable

**OSHA Regulations:** Not Applicable

**State Regulations:** Not Applicable

**NOTES:** Chemical substance components have been reported to the EPA Office of Toxic Substances in accordance with the requirements of the Toxic Substances Control Act (Title 40 CFR Part 710). The reportable chemical substances in this product are regulated by the OSHA Hazard Communication Standard (29 CFR 1910.1200) solely because they are listed by ACGIH. However, they do not fit any of the five proposed hazard categories under Sections 311 and 312 of SARA.

For purposes of SARA III reporting, this substance contains the following listed ingredients: Aluminum oxide (Section 313 list)

None of the materials in this mixture are on the EPA list of extremely hazardous substances (Section 302 of SARA).

## SECTION 16: OTHER INFORMATION

**Prepared By:** Zuniga, A.

**Revision Notes:** Not Applicable

**Additional Hazard Rating Systems:** Not Applicable

**Disclaimer:** The information presented herein is believed to be accurate and was obtained from sources believed to be reliable. However, the information is provided without any representation or warranty, expressed or implied, with respect to its accuracy or completeness. It is the users' responsibility to determine the suitability of this product and the relevance of this information for their use.

**References:** American Industrial Hygiene Association (AIHA) Hygienic Guide Series (Revised June 1978). U.S. Dept. of Health and Human Services, NIOSH: Registry of Toxic Effects of Chemical Substances, 1985-86 Edition. Sax, N. Irving: Dangerous Properties of Industrial Materials, Van Nostrand Reinhold Co., Inc., 1984.