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## Material Safety Data Sheet

### Section 1 - Chemical Product and Company Identification

Product Name: Reactive Alumina  
Catalogue Number: All Reactive Alumina Codes  
Synonyms: Alpha Alumina- AH221  
ALFA (Arad Lian Faravar Aria)  
Company Identification: Unit 304, No. 14, Salar St., Zaferanieh,  
Tehran, Iran  
Telephone number : +98-21-42167000  
Fax Number: +98-21-42167001

### Section 2 - Hazards Identification

#### EMERGENCY OVERVIEW

Caution! May cause respiratory tract irritation. May cause lung damage. May cause mechanical eye and skin irritation.

Target Organs: Lungs.

#### Potential Health Effects

Eye: Dust may cause mechanical irritation.  
Skin: Dust may cause mechanical irritation. Low hazard for usual industrial handling.  
Ingestion: Ingestion of large amounts may cause gastrointestinal irritation. Expected to be a low ingestion hazard. Inhalation: May cause respiratory tract irritation. May cause lung damage.  
Chronic: Chronic inhalation of fine dusts may cause lung damage.

### Section 3 - Composition, Information on Ingredients

CAS Number: 1344-28- 1  
Chemical Name: Aluminum Oxide  
Percentage: > 98%  
Hazard Symbols: None listed  
Risk Phrases: None listed

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#### Section 4 - First Aid Measures

Eyes:	Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.
Skin:	Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists.
Ingestion:	If victim is conscious and alert, give 2-4 cupful of milk or water. Never give anything by mouth to an unconscious person. Get medical aid.
Inhalation:	Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid if cough or other symptoms appear.
Notes to Physician:	Treat symptomatically. No specific treatment.

#### Section 5 - Fire Fighting Measures

General Information:	As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Use extinguishing media appropriate to the surrounding fire. Substance is noncombustible.
Extinguishing Media:	Substance is noncombustible; use agent most appropriate to extinguish surrounding fire.
Auto ignition Temperature:	Not Applicable.
Flash Point:	Not Applicable.
Explosion Limits: Lower:	Not Available.
Explosion Limits: Upper:	Not Available.
NFPA Rating:	health: 1; flammability: 0; instability: 0;

#### Section 6 - Accidental Release Measures

General Information:	Use proper personal protective equipment as indicated in Section 8. Vacuum or sweep up material and place into a suitable disposal container.
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**Spills/Leaks:** Clean up spills immediately, observing precautions in the Protective Equipment section. Avoid generating dusty conditions. Provide ventilation

### Section 7 - Handling and Storage

**Handling:** Use with adequate ventilation. Minimize dust generation and accumulation. Avoid prolonged or repeated contact with skin. Avoid contact with eyes. Avoid ingestion and inhalation.

**Storage:** Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances.

### Section 8 - Exposure Controls, Personal Protection

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Calcined Alumina	none listed	none listed	15 mg/m <sup>3</sup> TWA (total dust); 5 mg/m <sup>3</sup> TWA (respirable fraction)

**OSHA Vacated PELs:** Calcined alumina: 10 mg/m<sup>3</sup> TWA (total dust); 5 mg/m<sup>3</sup> TWA (respirable fraction) Engineering Controls:

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

#### Personal Protective Equipment

**Eyes:** Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

**Skin:** Wear appropriate gloves to prevent skin exposure.

Wear appropriate protective clothing to prevent skin exposure.

**Clothing:** Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149.

**Use a Respirators:** NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

### Section 9 - Physical and Chemical

**Properties Physical State:** Solid

**Color:** white

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Odor:	odorless
pH:	Not available
Vapor Pressure:	Negligible.
Vapor Density:	Not available
Evaporation Rate:	Not available
Viscosity:	Not available
Boiling Point:	2980 deg C ( 5,396.00°F)
Freezing/Melting Point:	2000 deg C ( 3,632.00°F)
Decomposition Temperature:	Not available
Solubility in water:	Negligible in water.
Specific Gravity/Density:	4.0 (water=1)
Molecular Formula:	Al <sub>2</sub> O <sub>3</sub>
Molecular Weight:	101.96

### Section 10 - Stability and Reactivity

Chemical Stability:	Stable.
Conditions to Avoid:	Incompatible materials, dust generation, excess heat.
Incompatibilities with Other Materials:	Not available
Hazardous Decomposition Products:	None.
Hazardous Polymerization:	Has not been reported.

### Section 11 - Toxicological

Information RTECS#:	
CAS#	1344-28-1: BD1200000
LD50/LC50:	RTECS: Not available.
Carcinogenicity:	Calcined Alumina - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.
Other:	See actual entry in RTECS for complete information.

### Section 12 - Ecological Information

#### TOXICITY

	Value	Species	Type	Test Substance
Fish Toxicity	LC50 = >100 mg/l	Salmo trutta	acute	aluminum oxide
Invertebrate Toxicity	EC50 = >100 mg/l	Daphnia Magna	acute	aluminum oxide
Algae Toxicity	EC50 = >100 mg/l	Selenastrum Capricornutum	acute	aluminum oxide

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<b>PERSISTENCE AND DEGRADABILITY</b>	Not applicable for inorganic substances.
<b>BIOCUMULATIVE POTENTIAL</b>	No relevant information available
<b>MOBILITY IN SOIL</b>	No relevant information available
<b>RESULTS OF PBT AND vPvB ASSESSMENT</b>	As a result of the PBT/vPvB assessment it was determined that this product does not meet the criteria for classification as PBT/vPvB
<b>OTHER ADVERSE EFFECTS</b>	None known.

### Section 13 - Disposal Considerations

<b>WASTE TREATMENT METHODS</b>	<p>Collect in containers or covered dumpsters. If reuse or recycling is not possible material may be disposed of in an industrial landfill in accordance with local regulations and restrictions.</p> <p>Empty containers should be emptied entirely and taken for recycling, recovery or waste disposal in accordance with local regulations and restrictions.</p>
<b>RCRA STATUS</b>	<p>If discarded in its purchased form, this product would not be a hazardous waste either by listing or characteristic nor is it federally regulated. However, under RCRA, it is the responsibility of the product user to determine at the time of disposal whether a material containing the product or derived from the product should be classified as a hazardous waste.</p>

### Section 14 - Transport Information

	<b>ADR/RID</b>	<b>ADN</b>	<b>IMDG</b>	<b>IATA</b>
<b>UN Number</b>	Not regulated as dangerous goods.	Not regulated as dangerous goods.	Not regulated as dangerous goods.	Not regulated as dangerous goods.
<b>Shipping Name</b>	Not regulated as dangerous goods.			
<b>UN Proper shipping name</b>	Not regulated as dangerous goods.			
<b>Transport Hazard Class(es)</b>	Not regulated as dangerous goods.			
<b>Packing group</b>	Not regulated as dangerous goods.			
<b>Environmental Hazards</b>	Other information: Not environmental hazards known with this product			
<b>Additional Information</b>	-	-	IMSBC code: Group A and B	-

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Special precautions for user: Not regulated as dangerous goods.  
Transport in Bulk : Not regulated as dangerous goods.  
according to Annex II of  
Marpol and the IBC Code

### Section 15 - Regulatory Information

European/International Regulations European Labeling in Accordance with EC  
Directives Hazard Symbols: Not available  
Risk Phrases: WGK (Water Danger/Protection)  
Safety Phrases: CAS# 1344-28-1: 0  
Canada: CAS# 1344-28-1 is listed on Canada's DSL List  
Canadian WHMIS  
Classifications: Not controlled.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

US Federal  
TSCA CAS# 1344-28-1 is listed on the TSCA Inventory.

### Section 16- Other Information

**MSDS Creation Date: 04/01/2022**

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential, or exemplary damages howsoever arising, even if the company has been advised of the possibility of such damages.