

Accurate Thermal Systems

MATERIAL SAFETY DATA SHEET

Product: Fused Aluminum Oxide

Synonyms: Alpha Alumina, Brown Fused Alumina

Chemical Family: Refractory Oxide

COMPOSITION:

Ingredients	Wt.%	OSHA Req.	CAS#	OSHA PEL (mg/m³)	TWA (mg/m³)	Carcinogen (Y/N)
Alpha Alumina(Al2O3)	98-100%	Y	1344-28-1			
Total Dust				15	10	N
Respirable Fraction				5	5	
Titanium Dioxide(TiO2)	0-4%	Y	13463-67-7			
Total Dust				5	5	N
Total Silicon Dioxide(SiO2)	0-1%	N	7631-86-9 - -			N
Iron Oxide(Fe2O3)	0-5%	Y	1309-37-1			
Total Dust				10	5	N

Note:

1. PEL and TWA values given above are 8-hour time-weighted averages, unless otherwise specified.
2. Source of exposure limit data: ACGIH Threshold Limit Values: (OSHA Tables Z-1-A, Z-2, Z-3)
3. Materials are regulated by OSHA 29 CFR 1910, 1200. Hazard Communication Standard.

PHYSICAL AND CHEMICAL PROPERTIES

Formula: Al₂O₃

Molecular Weight: 101.94

Boiling Point: 3500°C

Freezing Point: N/A

Melting Point: 2000°C

Vapor Pressure (mm/Hg) N/A

Specific Gravity (al=1) 3.97

Evaporation Rate: N/A

pH (H₂O) N/A

Solubility in Water: Insoluble

Solubility in Other Solvents: Insoluble

Appearance, Odor, & Physical State: Brown granular or fine powder, no odor.

FIRE AND EXPLOSION DATA:

Flammable Limits: N/A

Flashpoint (°C) and Method: N/A

Upper explosion limit (% by Volume) N/A

Lower explosion limit (% by Volume) N/A

Auto ignition Temperature (°C) N/A

General Hazard: This abrasive product is non-combustible and does not pose fire or explosion hazards, and will not initiate or contribute to the intensity of a fire.

Extinguishing Media: As appropriate for surrounding fire.

Fire Fighting Instructions: As appropriate for surrounding fire.

Fire Fighting Equipment: As appropriate for surrounding fire.

Hazardous Combustion Product: Not Applicable

REACTIVITY DATA:

Stability: Product is stable under normal ambient and anticipated conditions of temperature and pressure.

Conditions to avoid: Contact with incompatible materials.

Incompatible Materials: N/A

Hazardous Decomposition: N/A

Hazardous Polymerization: N/A

HAZARDOUS IDENTIFICATION:

Emergency overview: Brown granular or fine powder, no odor. Product does not pose significant fire or health hazards. Abrasive particulate may cause irritation to the eye and respiratory tract. Product is non-combustible and stable.

Primary Routes of Entry (for particulate): Inhalation: Yes Skin: No Ingestion: No Other: No

POTENTIAL HEALTH EFFECTS:

Acute:

Eye Contact: Particulate may cause slight to moderate irritation. Abrasive action of dust can damage eyes.

Skin Contact: No evidence of adverse effects experienced. Not absorbed through skin.

Inhalation: Inhalation of airborne particulate may cause slight to moderate irritation of mucous membranes

Chronic: None

Signs & Symptoms: Irritation, shortness of breath, decreased chest expansion, dry cough, fatigue.

Medical Conditions Generally Aggravated by Exposure (to particulate):

Individuals with lung disorders should not be exposed to conditions where a large airborne quantity of the nuisance dust exists without precautions taken to alleviate the aggravated pre-existing medical condition.

FIRST AID MEASURES:

Skin Contact: If dust gets on skin, wash contaminated area with soap and water. Remove and wash contaminated clothing. If rash, irritation, or other symptoms persists, seek medical attention.

Eye Contact: Immediately flush with large volumes of water, as needed. If symptoms persist, seek medical attention.

Inhalation: Remove to fresh air. Apply artificial respiration as needed. Obtain first aid or medical assistance.

Ingestion: Leave decisions to induce vomiting to a doctor, since particles may be aspirated into the lungs. Seek medical attention.

ACCIDENTAL RELEASE MEASURE:

Steps to be taken in case material is released or spilled: Clean up using methods that avoid dust generation. If a vacuum is used, a high efficiency particulate air should filter exhaust air (HEPA) filter. Compressed air should not be used to clean up spills.

During clean up, skin and eye contact and inhalation of dust should be avoided as much as possible. When

necessary, wear appropriate personal protective equipment (see Exposure Controls/Personal Protection) during clean up operations. Place material into dry container with a clean shovel, and cover. Comply with Federal, State and Local regulations regarding reporting of spills and disposal.

HANDLING AND STORAGE:

Storage Temperature and Pressure: N/A

General: Keep product in container. Handle in such a way to minimize from being dispersed in the work environment. Store in containers indefinitely with no risk of health hazard.

Utilize approved dust respirator when acute dustiness has occurred in the work environment. Handle with adequate ventilation for nuisance dust. See OSHA 29 CFR 1910.94 (Ventilation) and 29 CFR 1910.1000 (Air Contaminants).

EXPOSURE CONTROLS/ PERSONAL PROTECTION

Engineering Controls: Use local and/or general dilution ventilation, as needed, to reduce employee exposure

to below applicable OSHA PEL'S and ACGIH TLV'S (see composition section).

Respiratory Protection: Use an appropriate NIOSH/MSHA-approved respirator if airborne contaminant concentration exceeds applicable OSHA PEL'S or ACGIH TLV'S (see composition section) or other industry standards or guidelines on exposure. If respiratory protection is required, all appropriate requirements as set forth in 29 CFR 1910.134 must be met.

Protective Gloves: As needed to prevent skin contact with abrasive dust.

Eye Protection: Safety glasses and/or dust proof safety goggles to prevent contact with abrasive dust.

Other Protective Clothing or Equipment: Clothing which minimizes skin exposure to abrasive dust.

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