

Brown Aluminum Oxide

Material Safety Data Sheet

SECTION 1 – CHEMICAL PRODUCT

Product name : Brown Fused Aluminum Oxide

Synonyms : Brown Fused Alumina, Brown Aluminum Oxide, Mulgrit Brown, Alpha Alumina, BFA, Blasting Media

Formula : Al_2O_3 (>94.5%)

SECTION 2 – COMPOSITION AND INFORMATION ON INGREDIENTS

Ingredient	CAS#	Weight (%)	PELOSHA mg/m ³	TLV-ACGIH mg/m ³	Carcinogen Y/N
Alumina(Al_2O_3)	1344-28-1	94.5-98	10**	10	No
Titanium Oxide(TiO_2)	13463-67-7	1-3	15	10	No
Iron Oxide(Fe_2O_3)	1309-37-1	0-1.0	10	5	No

**Respirable Fraction: 5mg/m³

*Materials are regulated under OSHA 29 CFR 1900.1200, Hazard Communication Standard.

*Source of exposure limit data; ACGIH Threshold Limit Values; (OSHA Tables Z-1-A, Z-2, Z-3)

*All ingredients are listed under TSCA.

SECTION 3 – HAZARDS IDENTIFICATION

Emergency Overview:

non-flammable brown solid or powder. Abrasive particulate may cause minor eye and skin irritation. Inhalation of high concentrations may cause transient upper respiratory irritation. Product is non-combustible and stable.

Primary Route(s) of Entry:

Inhalation: Yes
 Skin: No
 Ingestion: No
 Other: No potential health effects

Eye:

Dusts may cause minor irritation. Particulate matter may scratch the cornea or cause other mechanical injury to the eye.

Skin:

May cause minor irritation. Not absorbed through skin.

Ingestion:

Relatively non-toxic. Ingestion is not anticipated under normal working conditions.

Inhalation:	Product will act as a nuisance dust. Inhalation of high concentrations of dust may cause coughing and mild, transitory respiratory irritation. May caused slight to moderate irritation of mucous membranes.
Chronic: Inhalation:	Long-term dust inhalation in excess of the PEL or TLV may decrease the ability of the lungs to clear particulate matter which may cause shortness of breath and increased susceptibility to respiratory disease.
Signs and Symptoms:	Irritation, redness, pain, tear formation, blurred vision, light sensitivity, shortness of breath, decreased chest expansion, dry cough, and fatigue.
Medical Conditions Aggravated by Exposure:	Repeated inhalation of dusts over time may aggravate pre-existing respiratory disease. Precautions should be taken to alleviate the pre-existing medical condition.
Target Organs:	Lungs
Carcinogenicity:	
NTP:	No
IARC:	No
OSHA:	No

SECTION 4 – FIRST AID MEASURES

Eyes:	Flush eyes with lukewarm water for 15 minutes, opening and closing eyelids to ensure adequate rinsing. If redness, irritation, pain, or tearing occurs, seek medical attention.
Skin:	Wash contaminated area with soap and water. Wash contaminated clothing. Seek medical attention if symptoms persist.
Inhalation:	If inhalation of high concentrations occurs, move to fresh air. If breathing has stopped, a certified professional should give CPR. Seek immediate medical attention.
Ingestion:	Do not induce vomiting unless suggested by a doctor. Seek medical attention.

SECTION 5 – FIRE FIGHTING MEASURES

Flash Point:	not applicable
Flammable Limits:	LEL: not applicable UEL: not applicable
Auto Ignition Temperatures:	N/A
Extinguishing Media:	use media appropriate for surrounding fire.
Fire and Explosion Hazards:	Non-flammable, non-combustible. Product will not burn.
Hazardous Decomposition Products:	None
Fire Fighting Instructions:	Firefighters should wear a NIOSH/MSHA approved full-faced self-contained breathing apparatus (SCBA) operated in positive pressure mode, and full turnout or bunker gear.
NFPA Classification:	
Health: 1 Flammability: 0 Reactivity: 0	

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Isolate hazard area and deny entry to unauthorized and/or unprotected personnel. Avoid dust generation. Water mist may be added as necessary to control the level of airborne dusts. Respiratory protection for clean-up personnel depends on the level of exposure anticipated. (See Section 8. EXPOSURE CONTROLS/PERSONAL PROTECTION) Gently shovel or scoop into clean dry container for later recycle or disposal. Comply with Federal, State and Local regulations regarding reporting of spills and disposal.

SECTION 7 – HANDLING AND STORAGE

Store in dry area in closed containers. Storage and work areas should be periodically cleaned to minimize dust accumulation. Avoid dust inhalation and promulgation. DO NOT use compressed air or dry sweeping to remove dust from work area. Dusts should be removed using an appropriately equipped vacuum. Exhaust air should be filtered through a HEPA (high-efficiency particulate air) filter. If an appropriate vacuum is unavailable, only wet clean-up methods should be used (i.e. wet sweeping, misting, etc.) Moisture should be added as necessary to reduce exposure to airborne respirable dust. See OSHA 29 CFR 1910.94 (Ventilation) and 29 CFR 1910.1000 (Air Contaminants).

SECTION 8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION

Respiratory Protection: Under normal working conditions, below acceptable exposure guidelines, none is required. For concentrations above the PEL but less than 10X the PEL, a NIOSH/MSHA approved dust mist respirator should be worn. Appropriate respirator selection will be dependent upon the magnitude of exposure and should be selected in accordance with 29 CFR 1910.134. (See Section 2. COMPOSITION for PEL's and TWA's).

Skin Protection: protective gloves, as needed, to prevent skin contact

Eye protection: safety-glasses with side shields or goggles to prevent dust and particles from entering the eye. See OSHA 29 CFR 1910.133.

Other: Under dusty conditions, employees should wear coveralls or other suitable work clothing. Contaminated clothing must be vacuumed before removal. DO NOT REMOVE dust from clothing by blowing or shaking.

Engineering Controls: Use general ventilation. Local exhaust may be necessary for processes which generate large quantities of airborne dust. Keep exposures below applicable OSHA PEL's and ACGIH-TLV's.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Formula:	Al ₂ O ₃
Boiling Point:	N/A
Melting Point:	2000°C
Specific Gravity:	(H ₂ O = 1)3.95
Percent Volatile:	0
Evaporation Rate:	None
Solubility in Water:	Insoluble
Solubility in Alcohol:	None
PH (10% slurry):	Not applicable
Appearance/Odour:	Brown solid or powder/odourless

SECTION 10 – STABILITY AND REACTIVITY

Stability:	Stable under normal ambient conditions of temperature and pressure.
Reactivity/ Incompatibility:	Aluminum Oxide reacts violently with chlorine trifluoride producing flames. Ethylene Oxide polymerizes violently when in contact with pure aluminum oxide. Aluminum oxide is also incompatible with hot chlorinated rubber, acids and oxidizers.
Hazardous Decomposition:	Thermal decomposition products will produce aluminum oxide.
Hazardous Polymerization:	Will not occur.

SECTION 11 – TOXICOLOGICAL INFORMATION

Eye:	Particulate matter may cause physical injury to the eye.
Skin:	May cause minor irritation.
Inhalation:	May cause minor transient respiratory irritation.
Ingestion:	Ingestion of large quantities may result in gastrointestinal irritation and eventually interference with phosphate absorption which results in rickets.
Chronic:	Many studies indicate that aluminum oxide dust acts as an “inert” material when inhaled.
Sub chronic:	No Data
Other:	Implantation of aluminum oxide into rats has resulted in tumors at the site of application. Intrapleural administration of 90 mg/kg aluminum oxide has resulted in tumors of the lungs, thorax or respiratory system.

SECTION 12 – ECOLOGICAL INFORMATION

Fused brown alpha aluminum oxide is not expected to exert an ecotoxicity effect or bioconcentrate in the food chain.

SECTION 13 – DISPOSAL CONSIDERATIONS

Dispose of according to applicable federal, state, and local regulations. Dispose per 40 CFR 261 and 262.

SECTION 14 – TRANSPORT INFORMATION

U.S. Department of Transportation (DOT): Not Classified IMO/IMDG CODE Classification: Not controlled under IMDG ICAO/IATA Classification: Not controlled under IATA.

SECTION 15 – REGULATORY INFORMATION

Canadian WHMIS: D2B

EPCRA Section 302 (EHSs): This product does not contain ingredients subject to reporting requirements of 40 CFR Part 355, Appendices A and B (Extremely Hazardous Substances).

CERCLA, Section 304: This product does not contain ingredients subject to state and local reporting under Section 304 of SARA Title III as listed in 40 CFR Part 302 Table 302.4.

SARA 313 REPORTING REQUIREMENTS: This product does not contain ingredients subject to the reporting requirements of Section 313 SARA, and Section 5607 of the Pollution Prevention Act.

SARA HAZARD CATEGORY: This product has been reviewed according to the EPA Hazard Categories promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and by definition meets the requirements of the following category: Acute Health Hazard.

SECTION 16 – KEY

ACGIH American Conference of Governmental Industrial Hygienists

CAS Chemical Abstracts Service

DOT Department of Transportation

IARC International Agency for Research on Cancer

MSHA Mine Safety and Health Administration

NFPA National Fire Protection Association

NIOSH National Institute for Occupational Safety and Health

NTP National Toxicology Program

OSHA Occupational Safety and Health Administration

PEL Permissible Exposure Limit

SARA Superfund Amendment and Reauthorization Act

TLV Threshold Limit Value

TSCA Toxic Substance Control Act