

Safety Data Sheet

Material Name: Brown Fused Alumina



Section 1 - IDENTIFICATION

Material Name:

Brown Fused Alumina

Trade Name:

Brown Aluminum Oxide

Recommended Use

Abrasive applications

Restrictions on Use

None known

Manufacturer Information

US Minerals, Inc.
18635 West Creek Drive
Tinley Park, IL 60477

Phone: (708) 623-1935; Fax: 219-864-4675
Emergency U.S. Minerals: (800) 803-2803
ChemTrec.; (800) 424-9300

Section 2 - HAZARDS IDENTIFICATION

OSHA (29 CFR 1910.1200) Classification of Brown Fused Silica:

Hazard Symbol	Hazard Classification	Signal Word	Hazard Statement
	Single Target Organ Toxicity (STOT) Repeated Exposure Category 2 (Respiratory System)	Warning	May cause damage to lungs (pulmonary fibrosis) through prolonged or repeated exposure.
Precautionary Statements			
Prevention	Response	Disposal	
Do not breathe dusts.	Get medical advice/attention if you feel unwell.	Dispose of contents in accordance with federal, state/provincial and local regulations	
Hazards not Otherwise Classified: None Known.			
Unknown Acute Toxicity Statement (Mixture): None Known.			

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

Component of Brown Fused Alumina	CAS No.	% Percentage (W/W)
Aluminum oxide	1344-28-1	90 - 91
Titanium Dioxide	13463-67-7	2 - 3
Silicon Dioxide (amorphous silica)	7631-86-9	1 - 2
Crystalline Silica (α -quartz)	14808-60-7	0.5 - 1.0
Calcium Oxide	1305-78-8	0.1 - 0.5
Iron Oxide	1309-37-1	0.1 - 0.5
Magnesium Oxide	1309-48-4	0.1 - 0.5
Impurities (other oxides)	Not applicable	< 5

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Section 4 - FIRST AID MEASURES

Description of First Aid Measures

General Information: No special measures required.

Inhalation: Remove to fresh air. Get medical attention if you feel unwell.

Skin: Product is not a skin sensitizer. Wash skin with soap and water. Remove contaminated clothing. Get medical attention, if needed.

Eyes: Remove contact lenses, if present. Rinse opened eye for several minutes under running water. Do not rub eyes. If symptoms persist, get medical attention.

Ingestion: Rinse mouth and drink plenty of water. Do not induce vomiting; get medical attention if symptoms occur.

Most Important Symptoms/Effects, both Acute and Delayed

Acute: Slight irritant effect on eyes and respiratory tract.

Chronic: Prolonged and repeated inhalation exposure to excessive concentrations of dusts may cause pulmonary fibrosis.

Any immediate medical attention / special treatment needed: Treat symptomatically.

Section 5 - FIRE FIGHTING MEASURES

Suitable Extinguishing Media

Use extinguishing agents appropriate for surrounding conditions.

Unsuitable Extinguishing Media

None known.

Specific Hazards Arising from the Chemical

None known.

Hazardous Combustion Products

None known.

Advice for Firefighters

Wear full protective firefighting gear including self-contained breathing apparatus (SCBA) for protection against possible exposure to fumes and/or smoke from the fire.

Section 6 - ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

For spills involving finely divided particles, clean-up personnel should be protected against contact with eyes and skin. If material is in a dry state, avoid inhalation of dust. Fine, dry material should be removed by vacuuming or wet sweeping methods to prevent spreading of dust. Avoid use compressed air to air sweep surfaces. Do not release into sewers or waterways.

Environmental Precautions

No special measures required.

Methods and Materials for Containment and Cleaning Up

Collect spilled material in appropriate container for disposal. Avoid formation and dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Dampen spilled material with water to minimize dust generation during sweeping, if applicable. See Sections 7 and 13.

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Section 7 - HANDLING AND STORAGE

Precautions for Safe Handling

Prevent formation of dust. Do not air sweep surfaces. Dampen material with water prior to sweeping, if applicable. Aluminum oxide dust alone is non-combustible.

Conditions for Safe Storage, including any Incompatibilities

Store away from oxidizing agents such as sodium hypochlorite; calcium hypochlorite, sulfuric acid, and nitric acid.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Component Occupational Exposure Limits

Aluminum Oxide	CAS 1344-28-1
OSHA:	15 mg/m ³ 8-hr TWA (total dust); 5 mg/m ³ TWA (respirable fraction)
Crystalline Silica	CAS # 14808-60-7
OSHA:	0.050 mg/m ³ 8-hr TWA (respirable fraction)
NIOSH:	0.050 mg/m ³ 8-hr TWA (respirable fraction)
Calcium Oxide	CAS # 1305-78-8
OSHA:	5 mg/m ³ 8-hr TWA
NIOSH:	5 mg/m ³ 8-hr TWA
Iron Oxide:	CAS # 1309-37-1
OSHA:	10 mg/m ³ 8-hr TWA (fume)
NIOSH:	5 mg/m ³ 8-hr TWA (dust and fume)
Magnesium Oxide:	CAS # 1309-48-4
OSHA:	15 mg/m ³ 8-hr TWA (total dust)
NIOSH:	None established
Titanium Dioxide (13463-67-7)	
OSHA:	15 mg/m ³ TWA
NIOSH:	Lowest Feasible Concentration (LFC)

Appropriate Engineering Controls

Provide local exhaust or process enclosure ventilation system, as applicable. Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment).

Individual Protection Measures

Respiratory Protection

Where dust concentration exceeds or is likely to exceed applicable exposure limits, an applicable NIOSH approved respirator is required in accordance with OSHA Respiratory Protection Standard (29 CFR §1910.134). Seek professional advice prior to respirator selection and use. Select respirator based on its suitability to provide adequate worker protection for given working conditions, level of airborne contamination, and presence of sufficient oxygen. Concentration in air of the various contaminants determines the extent of respiratory protection needed.

Half-face, negative-pressure, air-purifying respirator equipped with P100 filter is acceptable for concentrations up to 10 times the exposure limit. Full-face, negative-pressure, air-purifying respirator equipped with P100 filter is acceptable for concentrations up to 50 times the exposure limit. Protection by air-purifying negative-pressure and powered air respirators is limited. Use a positive-pressure-demand, full-face, supplied air respirator or self-contained breathing apparatus (SCBA) for concentrations above 50 times the exposure limit. If exposure is above the IDLH (immediately dangerous to life or health) for any of the constituents, or there is a possibility of an uncontrolled release or exposure levels are unknown, then use a positive-demand, full-face, supplied air respirator with escape bottle or SCBA

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Warning! Air-purifying respirators both negative-pressure, and powered-air do not protect workers in oxygen-deficient atmospheres.

Eye Protection

Wear safety glasses with side shields. Contact lenses should not be worn where particulate exposure to this material is likely.

Skin Protection

Wear suitable protective gloves and long sleeve shirt.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Solid granular	Appearance:	Brown
Odor:	No characteristic odor	Odor Threshold:	Not available
pH:	Not available	Melting Point:	Not available
Boiling Point:	Not applicable	Flash Point:	Non-flammable; non-explosive
Decomposition:	Not available	Evaporation Rate:	Not available
OSHA Flammability Class:	Non - Flammable	LEL:	Not available
UEL:	Not available	Vapor Pressure:	Not applicable
Vapor Density (air = 1):	Not applicable	Density:	Not available
Specific Gravity (water = 1):	Not available	Water Solubility:	Insoluble
Log KOW:	Not available	Coefficient Water/Oil Dist:	Not available
Viscosity:	Not available		

Section 10 - STABILITY AND REACTIVITY

Reactivity

No reactivity hazard is expected.

Chemical Stability

Stable at normal temperatures and pressure.

Possibility of Hazardous Reactions

As the product is supplied, a dust explosion from handling the product is not likely to occur. However, enrichment with fine dust causes risk of dust explosion.

Conditions to Avoid

No further information available.

Incompatible Materials

Store away from oxidizing agents; see Section 7.

Hazardous Decomposition Products

Oxides of carbon and metal oxides may be released at elevated temperatures.

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Section 11 - TOXICOLOGICAL INFORMATION

Acute and Chronic Toxicity

Component Analysis - LD50/LC50

The components of this material have been reviewed in various sources and the following endpoints are published:

Aluminum oxide (1344-28-1)

Oral LD50 Rat >5000 mg/kg

Amorphous Silicon Dioxide (7631-86-9)

Oral LD50 Rat >5000 mg/kg

Dermal LD50 Rabbit >2000

Titanium Dioxide (13463-67-7)

Oral LD50 Rat >20000 mg/kg;

Dermal LD50 Rabbit >10000 mg/kg

Inhalation LC50/4 h Rat >6.82 mg/L

Information on Likely Routes of Exposure

Acute Effects

Slight abrasive irritant effect on eyes, skin, and mucous membranes.

Respiratory Sensitization

No data available.

Dermal Sensitization

No data available.

Carcinogenicity (Components)

Crystalline Silica (CAS # 14808-60-7)

IARC Monograph 100C (2012): Group 1 (Known to be a Human Carcinogen)

Titanium Dioxide (CAS # 13463-67-7)

IARC Monograph 93 (2011): Group 2B (Possibly Carcinogen to Humans).

Mutagenicity

Not known to be a mutagen.

Reproductive Toxicity

Not known to be a reproductive hazard.

Teratogenicity / Embryotoxicity

Not known to harm the unborn child.

Specific Target Organ Toxicity - Single Exposure

Respiratory system, lungs

Specific Target Organ Toxicity - Repeated Exposure

Respiratory system, lungs

Chronic Exposure

Frequent inhalation of dust over a long period of time may increase the risk of developing chronic lung disease (cancer).

Aspiration Hazard

No data available.

Section 12 - ECOLOGICAL INFORMATION

Ecotoxicity:

Product is not expected to be hazardous to the environment.

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Component Analysis - Aquatic Toxicity:

Aluminum Oxide (1344-28-1)

Fish: NOEC 96 hr *Salmo trutta* > 100 mg/L

Algae: 72 Hr EC50 *Pseudokirchneriella subcapitata*: 440 mg/L

Invertebrate: 48 Hr EC50 *Ceriodaphnia dubia*: 7600 mg/L

Persistence and Degradability:

No information available for the product.

Bioaccumulative Potential:

Bioaccumulation is unlikely to be significant because of low water solubility of this product.

Mobility:

Product is insoluble in water and will likely sediment in water systems.

Section 13 - DISPOSAL CONSIDERATIONS

Disposal Instructions

Disposal guidance is based on material as supplied. Disposal must be in accordance with all current applicable laws and regulations, and material characteristics at time of disposal.

Local Disposal Regulations

Dispose of in accordance with local regulations.

Hazardous Waste Code

Not regulated.

Contaminated Packaging

Since emptied containers may retain product residue, follow label warnings even after container is emptied.

Section 14 - TRANSPORT INFORMATION

Land Transport (ADR/RID) (c) (d)		Land Transport (within USA) (b) (d)	
UN Number	None	UN Number	None
Shipping Name	Not classified as dangerous for transport	Shipping Name	Not classified as dangerous for transport
Sea Transport (c)		Air Transport (ICAO / IATA) (c) (d)	
UN Number	None	UN Number	None
Shipping Name	Not classified as dangerous for transport	Shipping Name	Not classified as dangerous for transport
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code			

(b) ORM-D may be applicable with the USA for package sizes < 30 kg (66 lbs).

(c) Consult with transport provider.

(d) Check relevant regulations for Special Provisions.

Section 15 - REGULATORY INFORMATION

Component Analysis

U.S. Federal Regulations

Brown Fused Alumina contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 311/312 (40 CFR 370.21), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), and TSCA 12(b).

Aluminum oxide (1344-28-1)

SARA 313: 1.0 % de minimis concentration (fibrous forms)

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SARA 311/312 Hazardous Categories

Acute Health: Yes Chronic Health: Yes Fire: No Pressure: No Reactive: No

TSCA	Listed (Aluminum Oxide and Titanium Oxide)
CERCLA Hazardous Substance List	Not Listed.
CAA Section 112 Hazardous Air Pollutants List	Not Listed.
CAA Section 112r Accidental Release Prevention	Not Listed.
SDWA	Not Listed

U.S. California Proposition 65 – Carcinogens & Reproductive Toxicity: Crystalline silica and Titanium Dioxide
Listed Substance

U.S. State Regulations

The following components appear on one or more of the following state hazardous substances list:

Component	CAS	CA	MA	MN	NJ	PA
Iron oxide	1309-37-1	Yes	Yes	Yes	Yes	Yes
Amorphous Silicon Dioxide	60676-86-0	Yes	Yes	Yes	Yes	Yes
Calcium oxide	1305-78-8	Yes	Yes	Yes	Yes	Yes
Aluminum oxide	1344-28-1	Yes	Yes	Yes	Yes	Yes
Titanium oxide	13463-67-7	Yes	Yes	No	Yes	Yes
Magnesium oxide	1309-48-4	Yes	Yes	No	Yes	Yes

Component Analysis – Inventory

Component	CAS	US	CA	EU	AU	PH	JP	KR	CN	NZ
Iron oxide	1309-37-1	Yes	DSL	EIN	Yes	Yes	Yes	Yes	Yes	Yes
Amorphous Silicon Dioxide	60676-86-0	Yes	DSL	EIN	Yes	Yes	Yes	Yes	Yes	Yes
Calcium oxide	1305-78-8	Yes	DSL	EIN	Yes	Yes	Yes	Yes	Yes	Yes
Aluminum oxide	1344-28-1	Yes	DSL	EIN	Yes	Yes	Yes	Yes	Yes	Yes
Titanium oxide	13463-67-7	Yes	DSL	EIN	Yes	Yes	No	Yes	Yes	Yes
Magnesium oxide	1309-48-4	Yes	DSL	EIN	Yes	Yes	No	Yes	Yes	Yes

International Inventories

Canada

Domestic Substances List (DSL): Listed (Crystalline Silica and Titanium Dioxide)
WHMIS Classification: D2A (Class D Division 2 Subdivision A)

* * *Section 16 - OTHER INFORMATION* * *

Web Sites with information about health effects from occupational exposure to the chemical substances contained in this product and associated engineering controls and personal protective equipment:

OSHA Website: <http://www.osha.gov>
NIOSH Website: <http://www.cdc.gov/niosh>
ACGIH Website: <http://www.acgih.org>
ATSDR Website: <http://www.astdr.cdc.gov/toxprofiles>

Legend

ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; DOT - Department of Transportation; DSL - Domestic Substances List; EEC - European Economic Community; EINECS - European Inventory of Existing Commercial Chemical Substances; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; GHS – Globally Harmonized System of Classification and Labelling of Chemicals; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International

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Civil Aviation Organization; IDL - Ingredient Disclosure List; IDLH - Immediately Dangerous to Life and Health; IMDG - International Maritime Dangerous Goods; Kow - Octanol/water partition coefficient; LD50 – Lethal Dose, 50%; LC50 – Lethal Concentration, 50%; LEL - Lower Explosive Limit; LOLI - List of Lists™ - ChemADVISOR's Regulatory Database; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR; NTP - National Toxicology Program; OSHA - Occupational Safety and Health Administration; PH - Philippines; RCRA - Resource Conservation and Recovery Act; RTECS - Registry of Toxic Effects of Chemical Substances®; SWDA – Safe Water Drinking Act; SARA - Superfund Amendments and Reauthorization Act; STEL - Short-term Exposure Limit; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act; TWA - Time Weighted Average; UEL - Upper Explosive Limit; US - United States.

Other Information

Disclaimer: The information in this Safety Data Sheet is based on our current knowledge and experience concerning the product components. Supplier gives no warranty whatsoever, including the warranties of merchantability or of fitness for a particular purpose. Any product purchased is sold on the assumption the purchaser shall determine the quality and suitability of the product. Supplier expressly disclaims any and all liability for incidental, consequential or any other damages arising out of the use or misuse of this product. No information provided shall be deemed to be a recommendation to use any product in conflict with any existing patent rights.

End of SDS