Brown Fused Aluminum Oxide
Safety Data Sheet

US-SDS according to the federal final rule of hazard communication revised on 2024 (HazCom 2024)
Issue date: 5/2/2023 Revision date: 5/14/2025 Supersedes: 5/2/2023 Version: 2.0

SECTION 1: Identification

1.1. Identification

Product form	:	Substance
Substance name	:	Brown Fused Aluminum Oxide
CAS-No.	:	1344-28-1
Synonyms	:	Abrasive
Other means of identification	:	Brown Aluminum Oxide/DURALUM, LO BW, DURABLU LT CPBRT, DURALUM HBD, DURALUM JR, DURALUM LBD JR, DURALUM RK, DURALUM SK, DURALUM, DURALUM HC, DURALUM SK 2, DURALUM G52E, DURALUM G52E P, DURALUM G52E RK, DURALUM PYR, DURALUM G82, DURALUM G82P, DURALUM C ART, DURALUM C AR RK, DURALUM C PRT, DURALUM C PR RK, DURALUM LT C AT, DURALUM LT C ART, URALUM LT C AR RK, DURALUM LT C PT, DURALUM LT C PRT, DURABLU C ABRT, DURABLU C PBRT, DURABLU LT C ABRT, DURABLU LT C PBRT, DURABLU C A BR RK, DURABLU C PBR RK, DURABLU LT C ABR RK, DURABLU LT CPBR RK, DURALUM SILKOTE, BLASTITE, BLASTITE TCC, BLASTITE BW, BLASTITE BT, BLITZBLAST, DURALUM, DURALUM, ULTRA LI, DURALUM DCF NG, DURALUM DCF T JL, DURALUM OPT, DURALUM GW, DURALUM HBD, DURALUM GW VIT, DURALUM HC, DURALUM K5, DURALUM LBD, DURALUM RF, DURALUM DCF, DURALUM LT, DURALUM LTR, DURALUM XA DURALUM WP DURALUM STF DURALUM RF STF, DURALUM RF MM, DURATRED, EXOBLAST, FASTBLAST, NIAGARA BLAST, NIAGARA BLAST F, DURABLU C ABR, DURABLU C PBR, DURABLU GW, DURABLU LT C ABR, DURABLU LT C PBR, DURABLU C AR, DURABLU C PR, DURALUM VIT, DURABLU LT, DURALUM LT CA, DURALUM LT CP.

1.2. Recommended use and restrictions on use

Use of the substance/mixture	:	General refractory applications

1.3. Supplier

Washington Mills
1801 Buffalo Avenue
Niagara Falls, NY 14302
T 1-800-828-1666
info@washingtonmills.com

1.4. Emergency telephone number

Emergency number	:	Toll free 1-800-424-9300 (USA & Canada) International: +1-703-527-3887 813-248-0585 [CHEMTREC]

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS US classification

Not classified

2.2. GHS Label elements, including precautionary statements

GHS US labeling

No labeling applicable

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Name : Brown Fused Aluminum Oxide
CAS-No. : 1344-28-1

Name	Product identifier	Conc. (% w/w)
Aluminum oxides	CAS-No.: 1344-28-1	> 90
Silica	CAS-No.: 7631-86-9	< 5
Diiron trioxide	CAS-No.: 1309-37-1	< 5
Titanium dioxide	CAS-No.: 13463-67-7	< 5

The specific chemical\ component identities and/or the exact component percentages of this material may be withheld as trade secrets. This information is made available to health professionals, employees, and designated representatives in accordance with the applicable provisions of 29 CFR 1910.1200 (I)(1). Trace ingredients (if any) are present in < 1% concentration, (< 0.1% for potential carcinogens, mutagen, and reproductive toxicant, respiratory tract and skin sensitizers in addition to oral/ inhalation acute toxicant in category 1 and 2). None of the trace ingredients contribute significant additional hazards at the concentrations that may be present in this product. All pertinent hazard information has been provided in this document, per the requirements of the Federal Occupational Safety and Health Administration Standard (29 CFR 1910.1200), U.S. State equivalents. Refer to the 'Technical Data Sheet' for the product composition.

3.2. Mixtures

Not applicable

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general : If you feel unwell, seek medical advice.
First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.
First-aid measures after skin contact : Wash skin with plenty of water.
First-aid measures after eye contact : Do not rub eye. Remove contact lenses, if present and easy to do. Continue rinsing. Rinse eyes with water as a precaution.
First-aid measures after ingestion : Call a poison center/doctor/physician if you feel unwell.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects after inhalation : Dust of the product, if present, may cause respiratory irritation after an excessive inhalation exposure. Although no appropriate human or animal health effects data are known to exist, this material is expected to be an inhalation hazard.
Symptoms/effects after skin contact : None under normal conditions. Dust may cause irritation in skin folds or by contact in combination with tight clothing.
Symptoms/effects after eye contact : None under normal conditions. Dust from this product may cause eye irritation.
Symptoms/effects after ingestion : None under normal conditions.

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam.
Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Specific hazards arising from the chemical

Fire hazard : No fire hazard.
Explosion hazard : No direct explosion hazard.

5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions : Fight fire from safe distance and protected location. Do not enter fire area without proper protective equipment, including respiratory protection.
Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Notify authorities if product enters sewers or public waters. Absorb spillage to prevent material-damage.

6.1.1. For non-emergency personnel

Protective equipment : Wear recommended personal protective equipment.
Emergency procedures : Ventilate spillage area.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".
Emergency procedures : Evacuate unnecessary personnel.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment : Using a clean shovel, put the material in a dry container and cover without compressing it.
Methods for cleaning up : Mechanically recover the product.
Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed : Not expected to present a significant hazard under anticipated conditions of normal use.
Precautions for safe handling : Ensure good ventilation of the work station. Wear personal protective equipment.
Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Keep in a cool, well-ventilated place away from heat.
Storage conditions : Keep cool. Protect from sunlight.
Packaging materials : Store always product in container of same material as original container.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Brown Fused Aluminum Oxide (1344-28-1)
No additional information available

Aluminum oxides (1344-28-1)	
No additional information available	
USA - OSHA - Occupational Exposure Limits	
Local name	alpha-Alumina
OSHA PEL TWA	15 mg/m³ (Total dust) 5 mg/m³ (Respirable fraction)
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1

Silica (7631-86-9)
No additional information available

Diiron trioxide (1309-37-1)	
No additional information available	
USA - ACGIH - Occupational Exposure Limits	
Local name	Iron oxide (Fe2O3)
ACGIH OEL TWA	5 mg/m³ (R - Respirable particulate matter)
Remark (ACGIH)	TLV® Basis: Pneumoconiosis. Notations: A4 (Not classifiable as a Human Carcinogen)
Regulatory reference	ACGIH 2023
USA - OSHA - Occupational Exposure Limits	
Local name	Iron oxide fume
OSHA PEL TWA	10 mg/m³
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1

Titanium dioxide (13463-67-7)	
No additional information available	
USA - ACGIH - Occupational Exposure Limits	
Local name	Titanium dioxide
ACGIH OEL TWA	0.2 mg/m³ (Nanoscale particles. R - Repirable particulate matter) 2.5 mg/m³ (Finescale particles. R - Repirable particulate matter)
Remark (ACGIH)	TLV® Basis: LRT irr; pneumoconiosis. Notations: A3 (Confirmed Animal Carcinogen with Unknown Relevance to Humans)
Regulatory reference	ACGIH 2023
USA - OSHA - Occupational Exposure Limits	
Local name	Titanium dioxide (Total dust)
OSHA PEL TWA	15 mg/m³
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1

8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.

Environmental exposure controls : Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:
Wear recommended personal protective equipment.

Hand protection:
Protective gloves

Eye protection:
Safety glasses

Skin and body protection:
Wear suitable protective clothing

Respiratory protection:
In case of insufficient ventilation, wear suitable respiratory equipment

Personal protective equipment symbol(s):

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Solid
Appearance	:	A granular synthetic mineral.
Color	:	brown
Odor	:	odorless
Odor threshold	:	No data available
pH	:	No data available
Melting point	:	No data available
Freezing point	:	No data available
Boiling point	:	No data available
Flash point	:	No data available
Relative evaporation rate (butyl acetate=1)	:	No data available
Flammability	:	Non flammable.
Vapor pressure	:	No data available
Relative vapor density at 20°C	:	No data available
Relative density	:	No data available
Solubility	:	No data available
Partition coefficient n-octanol/water (Log Pow)	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	No data available
Explosion limits	:	No data available
Explosive properties	:	No data available
Oxidizing properties	:	No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Not classified
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Not classified

Aluminum oxides (1344-28-1)	
LD50 oral rat	> 10000 mg/kg Source: ECHA

Silica (7631-86-9)	
LD50 oral rat	3160 mg/kg Source: TOMES; HAZARDTEXT
LD50 dermal rat	> 2000 mg/kg body weight Animal: rat, Guideline: OECD Guideline 402 (Acute Dermal Toxicity)
LD50 dermal rabbit	> 5000 mg/kg Source: ECHA
ATE US (oral)	3160 mg/kg body weight
ATE US (dust, mist)	5.01 mg/l/4h

Diiron trioxide (1309-37-1)	
LD50 oral rat	> 10000 mg/kg Source: ECHA
ATE US (dust, mist)	5.05 mg/l/4h

Titanium dioxide (13463-67-7)	
LD50 oral rat	> 5000 mg/kg body weight Animal: rat, Animal sex: female, Guideline: OECD Guideline 425 (Acute Oral Toxicity: Up-and-Down Procedure), Guideline: EPA OPPTS 870.1100 (Acute Oral Toxicity)

Skin corrosion/irritation : Not classified
Serious eye damage/irritation : Not classified
Respiratory or skin sensitization : Not classified
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified

Silica (7631-86-9)	
NOAEL (chronic,oral,animal/male,2 years)	1800 – 3000 mg/kg body weight Animal: rat, Animal sex: male, Guideline: OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies)
NOAEL (chronic,oral,animal/female,2 years)	1800 – 3200 mg/kg body weight Animal: rat, Animal sex: female, Guideline: OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies)
IARC group	3 - Not classifiable

Diiron trioxide (1309-37-1)	
IARC group	3 - Not classifiable

Titanium dioxide (13463-67-7)	
IARC group	2B - Possibly carcinogenic to humans

Reproductive toxicity : Not classified

Aluminum oxides (1344-28-1)	
NOAEL (animal/male, F0/P)	1000 mg/kg body weight Animal: rat, Animal sex: male, Guideline: OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)

STOT-single exposure : Not classified

STOT-repeated exposure : Not classified

Aluminum oxides (1344-28-1)	
LOAEC (inhalation, rat, dust/mist/fume, 90 days)	0.015 mg/l air Animal: rat, Guideline: OECD Guideline 452 (Chronic Toxicity Studies)

Silica (7631-86-9)	
NOAEL (dermal,rat/rabbit,90 days)	≥ 10000 mg/kg body weight Animal: rabbit

Diiron trioxide (1309-37-1)	
LOAEC (inhalation, rat, dust/mist/fume, 90 days)	0.2102 mg/l air Animal: rat, Animal sex: male, Guideline: OECD Guideline 412 (Subacute Inhalation Toxicity: 28-Day Study)
NOAEL (oral,rat,90 days)	> 1000 mg/kg body weight Animal: rat, Animal sex: female, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity Study in Rodents)
NOAEC (inhalation,rat,dust/mist/fume,90 days)	≥ 0.03 mg/l air Animal: rat, Animal sex: male

Aspiration hazard : Not classified

Viscosity, kinematic : No data available

Symptoms/effects after inhalation : Dust of the product, if present, may cause respiratory irritation after an excessive inhalation exposure. Although no appropriate human or animal health effects data are known to exist, this material is expected to be an inhalation hazard.

Symptoms/effects after skin contact : None under normal conditions. Dust may cause irritation in skin folds or by contact in combination with tight clothing.

Symptoms/effects after eye contact : None under normal conditions. Dust from this product may cause eye irritation.

Symptoms/effects after ingestion : None under normal conditions.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.

Silica (7631-86-9)	
LC50 - Fish [1]	10000 mg/l Source: ECHA

Silica (7631-86-9)	
EC50 - Crustacea [1]	> 5000 mg/l Source: ECHA
LOEC (chronic)	149.2 mg/l Test organisms (species): Daphnia magna Duration: '21 d'

Diiron trioxide (1309-37-1)	
LC50 - Fish [1]	≥ 50000 mg/l Source: ECHA
EC50 - Crustacea [1]	> 100 mg/l Test organisms (species): Daphnia magna
EC50 - Other aquatic organisms [1]	> 100 mg/l Test organisms (species):

Titanium dioxide (13463-67-7)	
LC50 - Fish [1]	> 100 mg/l
EC50 - Other aquatic organisms [1]	> 100 mg/l Test organisms (species):
LOEC (chronic)	5 mg/l Test organisms (species): Daphnia magna Duration: '21 d'

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

Regional waste regulation : Disposal must be done according to official regulations.
Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.
Sewage disposal recommendations : Disposal must be done according to official regulations.
Product/Packaging disposal recommendations : Comply with applicable regulations for solid waste disposal. Disposal must be done according to official regulations.
Additional information : Do not re-use empty containers.

SECTION 14: Transport information

In accordance with DOT / IMDG / IATA

14.1. UN number

Not regulated for transport

14.2. UN proper shipping name

Proper Shipping Name (DOT) : Not applicable
Proper Shipping Name (IMDG) : Not applicable
Proper Shipping Name (IATA) : Not applicable

14.3. Transport hazard class(es)

DOT
Transport hazard class(es) (DOT) : Not applicable

IMDG
Transport hazard class(es) (IMDG) : Not applicable

IATA
Transport hazard class(es) (IATA) : Not applicable

14.4. Packing group

Packing group (DOT) : Not applicable
Packing group (IMDG) : Not applicable
Packing group (IATA) : Not applicable

14.5. Environmental hazards

Other information : No supplementary information available.

14.6. Special precautions for user

DOT
No data available

IMDG
No data available

IATA
No data available

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

All components of this product are present and listed as Active on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

This product or mixture is not known to contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

15.2. International regulations

Titanium dioxide (13463-67-7)
Listed on IARC (International Agency for Research on Cancer)

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

Component	State or local regulations
Aluminum oxides(1344-28-1)	U.S. - Massachusetts - Right To Know List; U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - New York City - Right to Know Hazardous Substances List; U.S. - Pennsylvania - RTK (Right to Know) List
Silica(7631-86-9)	U.S. - Massachusetts - Right To Know List; U.S. - Pennsylvania - RTK (Right to Know) List

Component	State or local regulations
Diiron trioxide(1309-37-1)	U.S. - Massachusetts - Right To Know List; U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - New York City - Right to Know Hazardous Substances List; U.S. - Pennsylvania - RTK (Right to Know) List
Titanium dioxide(13463-67-7)	U.S. - Massachusetts - Right To Know List; U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - New York City - Right to Know Hazardous Substances List; U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: Other information

US-SDS according to the federal final rule of hazard communication revised on 2024 (HazCom 2024)

Revision date : 05/14/2025

Other information : None of Washington Mills products contains minerals and inorganic components in its whiskers forms. All hazards are derived based on the chemical properties of the corresponding elements.

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This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.