

SAFETY DATA SHEET

1. Identification

Product identifier	WHITE FUSED ALUMINUM OXIDE
Other means of identification	
Synonyms	AL, ALSD, ALHD, ALLD, ALZD, ALC
Recommended use	Abrasives, Ceramics, Flooring, Surface Treatment and Refractory.
Recommended restrictions	-
Manufacturer/Importer/Supplier/Distributor information	
Company Identification	ELFUSA GERAL DE ELETROFUSÃO LTDA Julio Michelazzo, 501 - São João da Boa Vista, São Paulo - Brasil – ZIP CODE 13872-900
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2. Hazard(s) identification

Physical hazards	Not classified.
Health hazards	Not classified.
OSHA defined hazards	Not classified.
Label elements	
Hazard symbol	None.
Signal word	None.
Hazard statement	The product does not meet the criteria for classification.
Precautionary statement	
Prevention	Observe good industrial hygiene practices.
Response	Wash hands after handling.
Storage	Store away from incompatible materials.
Disposal	Dispose of waste and residues in accordance with local authority requirements.
Hazard(s) not otherwise classified (HNOC)	None known.
Supplemental information	None.

3. Composition/information on ingredients

Substances

Chemical name	Common name and synonyms	CAS number	%
Aluminum oxide	-	1344-28-1	≥ 98
Impurities: SiO ₂ +Fe ₂ O ₃ +Na ₂ O+CaO+MgO+TiO ₂	-	N/A	≤ 2

Composition comments All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume. For more detailed chemical composition, refer to the certificate of analysis.

4. First-aid measures

Inhalation	Move to fresh air. Get medical attention if any discomfort continues.
Skin contact	Wash with soap and water. Get medical attention if irritation develops or persists.
Eye contact	Flush eyes thoroughly with water for at least 15 minutes. Get medical attention if irritation develops or persists.
Ingestion	Immediately rinse mouth and drink plenty of water. Get medical attention if irritation develops and persists.
Most important symptoms/effects, acute and delayed	Irritation of eyes and mucous membranes. Irritation of nose and throat.
Indication of immediate medical attention and special treatment needed.	Treat symptomatically.
General information	Get medical attention if any discomfort develops.

5. Fire-fighting measures

Suitable extinguishing media	Use fire-extinguishing media appropriate for surrounding materials.
Unsuitable extinguishing media	No restrictions known.
Specific hazards arising from the chemical	None known.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus, operated in positive pressure mode and full protective clothing must be worn in case of fire.
Firefighting equipment/instructions	Move containers from fire area if you can do it without risk.
General fire hazards	The product is not flammable.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Ensure adequate ventilation. Avoid inhalation of dust and contact with skin and eyes. Wear protective clothing as described in Section 8 of this safety data sheet.
Methods and materials for containment and cleaning up	Recover and recycle, if practical. Sweep up or vacuum up spillage and collect in suitable container for disposal. Do not vacuum clean unless vacuum cleaners are equipped with HEPA filter.
Environmental precautions	Avoid release to the environment. Prevent further leakage or spillage if safe to do so.

7. Handling and storage

Precautions for safe handling	Provide adequate ventilation. Use work methods which minimize dust production. Avoid inhalation of dust and contact with skin and eyes. Wear appropriate personal protective equipment. Do not add wet alumina to electrolysis cells. Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities	Store in a dry place.

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Material	Type	Value	Form
White Fused Aluminum Oxide	PEL	5 mg/m ³	Respirable fraction.
		15 mg/m ³	Total dust.

US. ACGIH Threshold Limit Values

Material	Type	Value	Form
White Fused Aluminum Oxide	TWA	1 mg/m ³	Respirable fraction.

Biological limit values	No biological exposure limits noted for the ingredient(s).
Exposure guidelines	No exposure standards allocated
Appropriate engineering controls	Provide sufficient ventilation for operations causing dust formation. If engineering measures are not sufficient to maintain concentrations of dust particulates below the Occupational Exposure Limit (OEL), suitable respiratory protection must be worn.
Individual protection measures, such as personal protective equipment	
Eye/face protection	Wear goggles/face shield.
Skin protection	
Hand protection	Wear protective gloves. Suitable gloves can be recommended by the glove supplier.
Skin protection	
Others	Wear suitable protective clothing.
Respiratory protection	In case of inadequate ventilation or risk of inhalation of dust, use suitable respiratory equipment with particle filter. Seek advice from local supervisor.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	Wash hands after handling. Routinely wash work clothing and protective equipment to remove contaminants. Handle in accordance with good industrial hygiene and safety practice. Follow up on any medical surveillance requirements.

9. Physical and chemical properties

Appearance	White powder.
Physical state	Solid.
Form	Powder.
Color	White.
Odor	Odorless.
Odor threshold	Not available.
pH	Not applicable
Melting point/freezing point	3704°F (2040 °C)

Initial boiling point and boiling range	Not available
Flash point	Not applicable
Evaporation rate	Not applicable
Flammability (solid, gas)	Non flammable
Upper/lower flammability or explosive limits	
Flammability limit-lower (%)	Not available
Flammability limits-upper (%)	Not available
Explosive limit-lower (%)	Not available
Explosive limit-upper (%)	Not available
Vapor pressure	Not applicable
Vapor density	Not applicable
Relative density	3.97 at 20°C
Solubility (ies)	
Solubility (water)	Insoluble
Partition coefficient (n-octanol/water)	Not applicable
Auto-ignition temperature	Not applicable
Decomposition temperature	Not available
Viscosity	Not applicable
Other information	
Bulk density	Not applicable
Explosive limit	Not applicable
Explosive properties	Not explosive
Oxidizing properties	Not oxidizing
Percent volatile	Not available

10. Stability and reactivity

Reactivity	The product is stable and non reactive under normal conditions of storage and transport.
Chemical stability	Stable at normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur. Hazardous reactions do not occur.
Conditions to avoid	Moisture. Contact with incompatible materials.
Incompatible materials	None known.
Hazardous decomposition products	No hazardous decomposition products are know.

11. Toxicological information

Information on likely routes of exposure	
Inhalation	Dust may irritate respiratory system.
Skin contact	Dust may irritate skin.
Eye contact	Dust may irritate the eyes.
Ingestion	Ingestion may cause irritation and malaise.
Symptoms related to the physical, chemical and toxicological characteristics	Irritation of eyes and mucous membranes. Irritation of nose and throat.
Information on toxicological effects	

Acute toxicity Ingestion may cause irritation and malaise.

Product	Species	Test Results
White Fused Aluminum Oxide		
Acute		
<i>Inhalation</i>		
LC50	Rat	> 2.3 mg/l, 4 hours
<i>Oral</i>		
LD50	Rat	> 5000 mg/kg

Components

Aluminum oxide (CAS 1344-28-1)		
Acute		
<i>Inhalation</i>		
LC50	Rat	>2.3 mg/l, 4 hours
<i>Oral</i>		
LD50	Rat	> 5000 mg/kg
Skin corrosion/irritation		May cause irritation through mechanical abrasion.

Serious eye damage/eye irritation	May cause irritation through mechanical abrasion.
Respiratory or skin sensitization	
Respiratory sensitization	Not classified.
Skin sensitization	Not a skin sensitizer.
Germ cell mutagenicity	Test data conclusive but not sufficient for classification.
Carcinogenicity	Test data conclusive but not sufficient for classification.

IARC Monographs. Overall Evaluation of Carcinogenicity

Not listed.

NTP Report on Carcinogens

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

Reproductive toxicity Test data conclusive but not sufficient for classification.

Specific target organ toxicity-single exposure Test data conclusive but not sufficient for classification.

Specific target organ toxicity-repeated exposure Test data conclusive but not sufficient for classification.

Aspiration hazard Not classified.

Further information Prolonged and repeated overexposure to dust can lead to pneumoconiosis.

12. Ecological information

Ecotoxicity The product is not expected to be hazardous to the environment.

Product	Species	Test Results
White Fused Aluminum Oxide		
Aquatic		
Algae	EC50 Green algae (<i>Selenastrum capricornutum</i>)	> 100 mg/l 72 hours
Crustacea	EC50 <i>Daphnia magna</i>	> 100 mg/l, 48 hours
Fish	LC50 <i>Salmo trutta</i>	> 100 mg/l, 96 hours
Persistence and degradability	The product is not biodegradable.	
Bioaccumulative potential	The product is not bioaccumulating.	
Mobility in soil	Aluminum oxide is not mobile in the environment, unless it comes into contact with a n aqueous environment with a pH below 5.5 or above 8.5.	
Mobility in general	The product is insoluble in water.	
Other adverse effects	Not expected to be harmful to aquatic organisms.	

13. Disposal considerations

Disposal instructions Dispose in accordance with all applicable regulations.

Hazardous waste code Not regulated.

Waste from residues / unused products Recover and recycle, if practical. Dispose of in accordance with local regulations.

Contaminated packaging Offer rinsed packaging material to local recycling facilities. Dispose of in accordance with local regulations.

14. Transport information

DOT

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

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

Not available.

15. Regulatory information

US federal regulations

This product is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. All components are on the U.S. EPA TSCA Inventory List.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - No
 Delayed Hazard - No
 Fire Hazard - No
 Pressure Hazard - No
 Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical - Yes

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Aluminum oxide	1344-28-1	≥ 98

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA)

Not regulated.

US state regulations

US. Massachusetts RTK - Substance List

Aluminum oxide (CAS 1344-28-1)

US. New Jersey Worker and Community Right-to-Know Act

Aluminum oxide (CAS 1344-28-1)

US. Pennsylvania Worker and Community Right-to-Know Law

Aluminum oxide (CAS 1344-28-1)

US. Rhode Island RTK

Aluminum oxide (CAS 1344-28-1)

US. California Proposition 65

This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country (s).

16. Other information, including date of preparation or last revision

Issue date 10-January-2012

Revision date 12-September-2017

Version 3

Disclaimer The information in the sheet was written based on the best knowledge and experience currently available.

HMIS ratings

Health = 1

Flammability = 0

Physical Hazard = 0

NFPA ratings



References

IUCLID

Chemical safety report.

List of Abbreviations

LD50: Lethal Dose, 50%.

LC50: Lethal Concentration, 50%.