

Safety Data Sheet for Chemical Products

PRODUCT: WHITE FUSED ALUMINUM OXIDE

1. Identification of the substance and the company

1.1. Identification of the substance or preparation

Product Name: AL, ALSD, ALHD, ALLD, ALZD and ALC.

Molecular formula: Al_2O_3 (α – Alumina)

CAS: 1344-28-1 / EINECS: 215-691-6

Registration Number: 01-2119529248-35-0141

1.2. Use of the substance or preparation - Abrasives, Ceramics, Flooring, Surface Treatment and Refractory.

1.3. Company Identification

Elfusa Geral de Eletrofusão Ltda.

501, Julio Michelazzo,

São João da Boa Vista, São Paulo – Brazil

Telephone: +55.19.3634.2300

Fax: +55.19.3634.2329

Personal responsible for the MSDS:

qualidade@elfusa.com.br

Commercial: comercial@elfusa.com.br

Homepage: www.elfusa.com.br

Personal Responsible for commercial introduction of the substance within European Community:

Elfusa Trading SL.

Town: Mijas

State: Malaga – Spain

Contact: Mr. Ruben Sinato

Telephone: +55.11.9973.8421

E-mail: E-mail: ruben.sinato@grupocurimbaba.com.br

1.4. Emergency Telephone

Elfusa Geral de Eletrofusão Ltda

Telephone: +55.19.3634.2300

2. Hazard identification

2.1. Classification of the substance / preparation

Aluminum Oxide is not classified as dangerous substance or preparation according to directive 67/548/CEE or directive 1999/45/CE.

2.2. Information concerning particular hazards for human and environment:

Does not pose any health hazard under normal conditions of use and as delivered.

High dust concentration may cause mechanical irritation of the eyes, skin and respiratory tract.

2.3. Other adverse effects: Avoid dust generation.

3. Composition/Information on ingredients

Chemical Name	CAS	EINECS	% by Weight	Classification	R-phrase
Aluminum Oxide ¹	1344-28-1	215-691-6	≥ 99.0	----	----
Impurities	SiO ₂ +Fe ₂ O ₃ +Na ₂ O+CaO+MgO+TiO ₂		≤ 1.0	----	----

¹Non fibrous

4. First aid measures

4.1. General information:

First aid personnel: pay attention to self-protection!

- **After Inhalation:** In case of dust inhalation remove to ventilated area and keep calm. In case of ongoing discomfort consult a physician.

- **After skin contact:** In case of large exposures wash with soap and water.

- **After Eye contact:** If particles come into contact with eyes treatment for mechanical irritation or injury may be required; flush thoroughly with water, in case of ongoing discomfort consult a physician.

- **After swallowing:** Wash mouth with water.

4.2. Note to physician: None.

5. Fire fighting measures

Not flammable.

5.1. Suitable extinguishing agents: Use extinguishing agents appropriate for surrounding materials.

5.2. For safety reasons unsuitable extinguishing agents: None .

5.3. Special hazards caused by the substance, its products of combustion or resulting gases: None.

5.4. Protective equipment: Fire fighters should wear approved personal protective equipment for the surrounding fired material.

6. Accidental release measure

6.1. Person-related Safety Precautions: See protection measures listed in section 8.

6.2. Environmental Precautions: Avoid dispersal of spilled material and runoff. Avoid creating dusty conditions and prevent wind dispersal. Collect material for recycling if possible.

6.3. Measure for cleaning: Use vacuum cleaner if possible.

6.4. Additional hints: See section 13.

7. Handling and storage

7.1. Handling: Ensure good ventilation / local exhaust at the workplace in the case of operations generating dust. Avoid creating dusty conditions.

Avoid inhalation and skin and eye contact.

Wear appropriate personal protective equipment. Do not add wet alumina to electrolysis cells.

7.2. Storage:

Requirements to be met by storerooms and receptacles: Store in dry area.

Additional hints: None.

8. Exposure controls/personal protection

8.1. Exposure limits:

Occupational exposure limits (air): generally same as for nuisance dust.

- Germany

10*/3** mg/m³ (*inhalable dust; ** respirable dust)

- Great Britain

10*/4** mg/m³ (*inhalable dust; ** respirable dust)

- United States

OSHA 15 mg/m³ (total dust); 5 mg/m³ TWA (respirable fraction)

- Some additional EU countries: 10 mg/m³ (include national OEL if this exists)

8.2. Exposure controls:

Ensure good ventilation / local exhaust at the workplace in the case of operations generating dust. Avoid work practises which generate dust. Avoid inhalation and particles entering the eyes.

8.3. Personal Protective Equipment:

Respiratory equipment: not required under recommended conditions of use. In case dust is generated, use personal protective equipment, dust filter P2 or if fine particles P3.

Use protective goggles and gloves when handling the substance and appropriate work clothes.

8.4. Environmental exposure control:

Avoid creating dusty conditions and prevent wind dispersal and dust emissions.

9. Physical and chemical properties

9.1. General Information

Appearance	Powder	Colour	White
Physical State	Solid	Odour	Odourless
Melting Point/ Melting range	Approx. 2.040 °C	Density at 20°C	~3.97 g/cm ³
Boiling Point/ Boiling range	Not relevant	Bulk Density	Not applicable
Flashpoint	Not relevant	Solubility	Not applicable
Flammability	Not relevant	Solubility in water	Insoluble
Ignition temperature	Not applicable	Partition coefficient: n-octanol/ water	Not applicable
Auto flammability	Not relevant	Viscosity	Not applicable
Oxidizing properties	Not applicable	pH Value	Not relevant
Vapour pressure	Not applicable	Evaporation rate	Not applicable
Relative density	Not applicable	Explosive properties	Not relevant

9.2. Important information on health and safety and environmental protection:

Safety related basic data, methods, and comments.

10. Stability and reactivity

10.1. General Information: The material is stable under normal conditions of use, storage, and transport.

10.2. Conditions to be avoided: Avoid dust generation.

10.3. Materials to be avoided: Not applicable.

10.4. Hazardous decomposition products: None.

11. Toxicological information

11.1. Toxicokinetics, metabolism and distribution:

Oral uptake < 0.1%, nearly insoluble in lung fluids, most absorbed aluminium oxide is rapidly excreted through urine, main deposit in body is in bone structure.

11.2. Acute effects (acute toxicity, irritation and corrosivity): No acute effects.

11.2.1. Acute toxicity:

LD50 (oral): > 5000mg/kg bwt (rats).

LD50 (dermal): No effect.

LD50 (inhalation): > 2,3 mg/l (rats).

11.2.2. Specific symptoms in animal tests:

After swallowing: None.

After skin contact: None.

After inhalation: None.

11.2.3. Irritation and Corrosive effects:

Irritant effects on skin: No effects.

Irritant effect on eyes: No effects apart from mechanical irritation.

11.3. Sensitisation:

After skin contact: None

After inhalation: None

11.4. Toxicity after repeated intake (sub acute, sub chronic, chronic):

Sub acute oral Toxicity: None, calculated DNEL 6,2 mg/kg bwt/day.

Sub acute inhalation Toxicity: None, see occupational exposure limits, calculated DNEL: 15,6 mg/m³ respirable.

11.5. CMR-effects (carcinogenic, mutagenic and reproductive effects)

Carcinogenicity: None.

Mutagenicity: None.

Reproductive toxicity: None.

Assessment of CMR properties: Not classified for CMR. Product components not listed under IARC/NTP/ACGIH (ingredient carcinogenicity).

11.6. Practical experience:

Observations relevant for classification: None.

Other observations: none.

12. Ecological Information

12.1. Ecotoxicity:

Product/Ingredient name	Test	Result	Species	Exposure
Aluminium oxide	Fish - OECD TG 203	>100 mg/l	Salmo trutta	pH 8
Aluminium oxide	Daphnia - OECD TG 202	>100mg/l	Daphnia Magna	pH 8
Aluminium oxide	Algae - OECD TG 201	>100mg/l	Selenastrum Capricornutum	pH 8

12.2. Mobility:

Not mobile under normal environmental conditions may be leached from the ground at low pH (< 5.5) or high pH (> 8.5).

12.3. Persistence and degradability:

12.3.1. Persistence: Not relevant for metals.

12.3.2. Biological degradability: Not degradable.

12.4. Bioaccumulative potential: Not bio accumulative

12.5. Long term ecotoxicity: Not classified for ecotoxicity.

12.6. Results of PBT assessment: Not relevant for metals.

12.7. Other adverse effects: No

12.8. Final assessment: No acute or chronic classification is appropriate for Al metal massive based on non toxic results below the Ecotoxicity Reference Value (ERV) of tests with aluminium metal, oxide and hydroxide at loadings of 100 mg/L at pH 8-8.5 (maximum solubility of Al expected).

All aluminium in soil or the aquatic environment comes from natural sources. Local sources have an insignificant contribution and impact on environment.

13. Disposal Consideration

13.1. Waste from Residues - Not classified as hazardous waste, disposal should be in accordance with local, state and national legislation.

13.2. Packing - Packaging has to be emptied entirely, recycling of used packaging is recommended in accordance with local, state and national legislation.

13.3. End Use: Recycle all aluminum oxide articles and components where possible. Dispose in accordance with local, state and national legislation.

14. Transport information

14.1. Land transport

GGVS/ADR: Not classified as dangerous for transportation.

GGVE/RID: Not classified as dangerous for transportation.

14.2. Inland waterways - GGVBisch/ADNR: Not classified as dangerous for transportation.

14.3. Maritime transport - GGVSee/IMDG: Not classified as dangerous for transportation.

14.4. Airtransport - ICAO-TI/I AT: Not classified as dangerous for transportation.

15. Regulatory information

No classification or special regulations. Follow general rules for handling, transport and waste management. Chemical Safety Assessment carried out.

16. Further information

In dealing with chemicals the national laws and regulation must be observed and applied. This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship. Recommended limitations of use by manufacturer. For industrial use and as component in consumer products.

Version history:

Original: 01/11/2011

Revision: -

Doc-ID: WFAOMSDS

Department issuing MSDS:

qualidade@elfusa.com.br

Abbreviations:

ACGIH: American Conference of Governmental Industrial Hygienists

OSHA: Occupational Safety and Health Administration (US)

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations concerning the International Transport of Dangerous Goods by Rail)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organization

ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

Bwt: bodyweight

PNEC: Potential No Effect Concentration

DNEL: Derived No Effect Level

DOC: Dissolved Organic Compounds

Disclaimer

The information provided in this Safety Data Sheet is believed to be the best of our knowledge at the date of this publication. This information is given in good faith and it can be used as guidance for safe, handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information is related to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.