

Safety Data Sheet for Chemical Products

PRODUCT: WHITE FUSED MULLITE

1. Identification of the substance and the company

1.1. Identification of the substance or preparation

Product Name: MUB, MUW, MUBS
Molecular formula: $3Al_2O_3 \cdot 2SiO_2$
CAS: 1302-93-8 / EINECS: 215-113-2
REACH Registration N^o: 01-2119517522-47-0010

1.2. Use of the substance or preparation – Ceramics 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-Costa

State: Malaga – Spain

Contact: Mr. Ruben Sinato

Telephone: +55.11.99973.8421

E-mail: sinato@elfusa.com.br

1.4. Emergency information

Emergency phone

Telephone: +1-866-519-4752

Telephone: +1-760-476-3962

Access Code: 333691

2. Hazard identification

Emergency overview

Critical hazards to man an environment – None

Mullite is not classified as dangerous substance or preparation according to directive 67/548 or directive 1999/45/EC.

No specify toxicity described for $3Al_2O_3 \cdot 2SiO_2$ (Crude and Grains).

$3Al_2O_3 \cdot 2SiO_2$ is not officially listed hazardous substance.

2.1. Classification of the substance or preparation

GHS Classification – Not classified. No H-phrases

CLP Classification – Not classified as hazardous goods

EC Classification – Not classified. No R-phrases

2.2. Label Elements

Symbol – None

Signal word – None

Precautionary Statements - P261 – Avoid breathing dust.

P280 – Wear eye protection.

P285 – In case of inadequate ventilation wear respiratory protection.

P305+P351+P338 – IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P302+P352 – IF ON SKIN: Wash with soap and water.

2.3. Other Hazards

Additional information – None.

3. Composition/Information on ingredients

Chemical Name	CAS	EINECS	% by Weight	
Mullite ¹	1302-93-8	215-113-2	≥ 99.0	
Individual Elements	Aluminum Oxide	1344-28-1	215-691-6	70.0 – 76.0
	Silicon Dioxide	7631-86-9	213-545-4	23.0 – 29.0
Impurities	TiO ₂ +Fe ₂ O ₃ +CaO+MgO+Na ₂ O		0.5 – 1.0	
¹ Non Fibrous				

4. First aid measures

4.1. Description of first aid measures

Inhalation - Move to fresh air. Consult a physician if necessary.

Skin contact - Mechanical (dry) removal. Subsequent rinsing with water.

Eye contact – Intensive rinsing with water. Consult a physician if necessary.

Ingestion – Rinse out mouth and give plenty of water to drink. Seek medical advice.

4.2. Most important symptoms and effects, both acute and delayed – None

4.3. Indication of any immediate medical attention and special treatment needed - None

5. Fire fight measures

5.1. Extinguishing media

Suitable extinguishing media - Product itself is non-combustible. Use extinguishing measures appropriate to the source of the fire.

5.2. Special hazards arising from the substance or mixture

Unsafe extinguishing media - None

5.3. Advice for firefighters

Special protective equipment – None

5.4. Further information - None

6. Accidental release measure

- 6.1. **Personal precautions** - Avoid dust generation and contact with skin and eyes. Limit dust formation, use disposal dust protection mask (P2 as a minimum), and see also section 7 and 8.
- 6.2. **Environmental Precautions** – No special measures necessary. Ensure material is properly disposed of.
- 6.3. **Methods for cleaning up** - Collect spilled material mechanically and place in a suitable, compatible, properly labeled container. Avoid dust generation. Ensure adequate ventilation and dispose of material in accordance with all applicable local, state and national legislation.

7. Handling and storage

- 7.1. **Advice on safe handling** - Avoid dust generation. Wash hands before eating, drinking or smoking. Precautions against fire and explosion: no danger of fire and dust explosion.
- 7.2. **Advice on protection against fire and explosion** – No special measures necessary.
- 7.3. **Storage** - No especial precautionary measures.

8. Exposure controls and personal protection

8.1. Exposure limit values

Chemical Name	CAS	EINECS	% by Weight	OSHA PEL (Exposure Guidelines)	
				Total (TWA)	Respirable (TWA)
Mullite	1302-93-8	215-113-2	≥ 99.0	15 mg/m ³	5 mg/m ³

8.2. Exposure control

- 8.2.1. **Occupational exposure control** - Production facilities should be provided with running drinking water, local and general aspiration system. In facilities, where Mullite is handled, eating and food storage are not permitted.
- 8.2.2. **Environmental exposure control** - In air and wastewater the product does not form any toxic compounds in the presence of other substance or factors.
- 8.3. **Personal Protection**
 - 8.3.1. **Respiratory protection** - Avoid breathing dust. Assess exposure concentrations of all materials involved in the workplace. If concentrations exceed the exposure limits listed in Exposure Guidelines or irritation or other symptoms experienced, follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149.
 - 8.3.2. **Hand protection** - Wear protective gloves. Avoid skin contact.
 - 8.3.3. **Eye protection** - Avoid eye contact, always wear appropriate protective glasses or chemical safety goggles.
 - 8.3.4. **Skin protection** - Wear appropriate protective clothing. Avoid skin contact.

- 8.3.5. **General safety and hygienic measure** - Observe personal hygienic regulations. Do not eat, drink and smoke during work. Wash thoroughly hands and uncovered body parts with soap and water after handling and before eating or drinking. Treatment with skin lotion can be used.

9. Physical and chemical properties

9.1. General Information

Appearance	Powder	Colour	White or Gray
Physical State	Solid	Odour	Odourless

9.2. Physical-Chemical properties

Melting Point	1900°C	Partition coefficient n-octanol/water	Not applicable
Flashpoint	Not applicable	Specific Gravity	~3.10 g/cm ³
Flammability	Not applicable	Bulk Density	Not applicable
Ignition temperature	Not applicable	Solubility in water	Insoluble
Auto flammability	Not applicable	Ph Value	7.5
Oxidizing properties	Not applicable	Explosive limits	Not applicable

9.3. Other Information

Viscosity: Not applicable
Volatile Organic Chemical (VOC): not applicable.

10. Stability and reactivity

- 10.1. **General Information** - The material is stable, no hazardous reactions known.
- 10.2. **Conditions to avoid** – Avoid dust generation.
- 10.3. **Materials to avoid** - Not applicable.
- 10.4. **Hazardous decomposition products** – There are no restriction in the regular use of this material.

11. Toxicological information

- 11.1. **Toxicokinetics** - No bioaccumulation potential
- 11.2. **Acute effects/toxicity tests**
 - Oral** - Not applicable. Not a relevant exposure route.
 - Dermal** - Not applicable.
 - Inhalation** - Not applicable.
 - Skin corrosion** - Not corrosive
 - Skin irritation** - Not irritating
 - Eye irritation** - Not irritating
 - Sensitisation** - Non sensitising
- 11.3. **Repeated dose toxicity**
 - Oral** - Not applicable. Not a relevant exposure route
- 11.4. **CMR effects** - There is no evidence of any CMR effects

12. Ecological Information

- 12.1. **Ecotoxicity** - No harmful effects on water organisms anticipated. Study scientifically unjustified. The substance is highly insoluble in

water. The dissolved metal ions from the test substance do not exceed the concentration of metal ions in natural surface waters. As such, it is clear that the Mullite mineral is not entering the environment in a quantity or concentration or under conditions that have or may have an immediate or long-term harmful effect on the environment.

- 12.2. **Toxicity to terrestrial compartment** - Not applicable.
- 12.3. **Persistence and degradability** - Not applicable for inorganic substances.
- 12.4. **Bioaccumulative potential** - Not applicable.
- 12.5. **Results of PBT assessment** - Mullite is not a PBT substance.
- 12.6. **Other adverse effects** - No environmental problems expected, if handled and treated in accordance with standard industrial practice.

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 Mullite articles and components where possible. Dispose in accordance with local, state and national legislation.

14. Transport information

- 14.1. **Land transport**
ADR, RID, GGVS, GGVE: Not classified as hazardous goods.
- 14.2. **Inland waterways – GGVBisch, ADNR:** Not classified as hazardous goods.
- 14.3. **Sea transport – GGVSee, IMDG:** Not classified as hazardous goods.
- 14.4. **Air transport - ICAO-TI, IATA-DGR:** Not classified as hazardous goods.

15. Regulatory information

- TSCA** – Mullite is listed on the TSCA inventory under CAS# 1302-93-8.
- RCRA** – Mullite is not classified as a hazardous material under RCRA or its regulations, 40 CFR 261.
- CERCLA** – Mullite is not classified as a hazardous substance under CERCLA regulations, 40 CFR 302.
- SARA** - Mullite is not an extremely hazardous substance is Section 302 and is not a toxic chemical subject to the requirements of 313.
- 15.1. Classification according to EC guidelines:
Labelling EC No 1272/2008: The product is not classified. No hazard symbol is necessary.

Labelling (67/548/EEC or 1999/45/EC): None

Hazard symbols: None

Signal word: None

Hazard statements: None

Precautionary statements: None

15.2 National regulations

Classification according VbF (Germany): Not subjected to VbF

Water pollution class: Not classified

15.3 Other information

Authorisation, TITEL VII: Not applicable

Restrictions, TITEL VII: Not applicable

VOC (1999/13/CE): 0%

Water pollution class: Not classified.

Relevant R-and H-Phrases: None

16. Further information

It is not required any special procedure to collect the material. This electrofused material is not recommended for using in food, medicine and cosmetic products. The improper use of our products exempts Elfusa of any responsibility. All data showed in this document are typical, small variations may occur. To obtain the most recent version of this document, please visit the company website.

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.