

## SAFETY DATA SHEET

(Following Regulations (EC) No 1907/2006 & (EC) No 1272/2008)

SDS Number: 2704 Date of first issue: 01 December 2002 Date of last revision: 21 February 2022

### 1 - Identification of product

#### 1.1 - Identification of Product

**Tradenames:** Zal/J, Zalcap, Zalsil, Zirconia Backing Mix,

The above-mentioned products are dry refractory powders.

#### 1.2 - Use of Product

These products are monolithic refractories used in lining industrial furnaces, high temperature processing, kilns and metal melting applications

#### 1.3 - Identification of Company

##### IDENTIFICATION OF THE MANUFACTURER/SUPPLIER

Murugappa Morgan Thermal Ceramics Ltd.,  
Plot No: 26 & 27, SIPCOT Industrial complex,  
Ranipet, Vellore District, Tamil Nadu, India  
Pin: 632403

Murugappa Morgan Thermal Ceramics Ltd.,  
Plot No: 681, Motibhoyan Village,  
Sanand-Kalol state Highway, Kalol Taluk,  
Gandhi Nagar District, Gujarat, India

#### Website

www.morganthermalceramics.com  
sds.tc@morganplc.com

#### 1.4 - Emergency information

##### EMERGENCY CONTACT NUMBER

Tel 1: +91 (4172) 244 313 extn no. 215 or 201  
Language: English

Opening hours: Only available during office hours

### 2 - Hazard Identification

#### 2.1 - Classification of the substance/ mixture

##### 2.1.1 CLASSIFICATION ACCORDING TO REGULATION (EC) NO 1272/2008

Not classified as hazardous according to Classification, Labelling and Packaging regulations (CLP) 1272/2008 EEC

#### 2.2 - Labelling Elements

Not applicable

#### 2.3 - Other hazards which do not result in classification

Mild mechanical irritation to skin, eyes and upper respiratory system may result from exposure.  
These effects are usually temporary

### 3 - Composition / Information On Ingredients

#### 3.2 Mixture

The above-mentioned products are dry refractory powders.

COMPONENT	% by weight	CAS No.	REACH Registration Number	Hazard Classification according to CLP
Lime stabilised Zirconia	0-98	68937-53-1	Not yet available	Not classified as hazardous
Magnesia stabilised Zirconia	0-98	1314-23-4	01-2119486976-14	Not classified as hazardous
Zirconium silicate	0-70	14940-68-2	Not yet available	Not classified as hazardous
Alumina	0-70	1344-28-1	01-2119817795-27	Not classified as hazardous
Other inorganic material	0-10	Not Applicable	Not yet available	Not classified as hazardous

None of the components are radioactive under the terms of European Directive Euratom 96/29.

## 4 - First-Aid measures

### Skin

In case of skin irritation rinse affected areas with water and wash gently. Do not rub or scratch exposed skin.

### Eyes

In case of eye contact flush abundantly with water; have eye bath available. Do not rub eyes. Seek medical attention if irritation persists.

### Nose and Throat

If these become irritated move to a dust free area, drink water and blow nose. Seek medical attention if irritation persists.

If symptoms persist, seek medical advice.

### 4.2 - Most Important symptoms and effects, both acute and delayed

### 4.3 - Indication of any immediate medical attention and special treatment required

## 5 - Fire-fighting measures

### 5.1 - Extinguishing media

Use extinguishing agent suitable for surrounding combustible materials.

### 5.2 - Special hazards arising from the substance or mixture

Non-combustible products,

### 5.3 - Advice for firefighters

Packaging and surrounding materials may be combustible.

## 6 - Accidental Release Measures

### 6.1 - Personal precautions, protective equipment and emergency procedures

Provide the workers with appropriate protective equipment until the situation is restored to normal (see section 8).

### 6.2 - Environmental precautions

Prevent further dust dispersion for example by damping the materials.  
Do not flush spillage to drain and prevent from entering natural watercourses.  
Check for local regulations, which may apply

### 6.3 - Methods and materials for containment and clean up

Pick up large pieces and use a vacuum cleaner.  
If brushes are used, ensure that the area is wetted down first.  
Do not use compressed air for clean up.  
Do not allow to become windblown.

### 6.4 - Reference to other sections

For further information, please refer to sections 7 and 8

## 7 - Handling and storage

### 7.1 - Precautions for safe handling

Handling can be a source of dust emission and therefore the processes should be designed to limit the amount of handling. Whenever possible, handling should be carried out under controlled conditions (i.e., using dust exhaust system).  
Regular good housekeeping will minimise secondary dust dispersal.

### 7.2 - Conditions for safe storage

These products should be kept dry and cool, and containers should be re-sealed after use.  
Avoid damaging the packaging.

### 7.3 - Specific end use

Please refer to your local Morgan Thermal Ceramics' supplier.

## 8 - Risk Management Measures / Exposures Controls / Personal Protection

### 8.1 - Control parameters

Industrial hygiene standards and occupational exposure limits vary between countries and local jurisdictions. Check which exposure levels apply to your facility. If no regulatory dust or other standards apply, a qualified industrial hygienist can assist with a specific workplace evaluation including recommendations for respiratory protection. Examples of exposure limits for respirable dust (in November 2014) are given below:

COUNTRY	Total Dust (mg/m <sup>3</sup> )	Resp Dust (mg/m <sup>3</sup> )	Quartz (mg/m <sup>3</sup> )	Cristobalite (mg/m <sup>3</sup> )	Source
EU BOELV			0.1	0.1	Carcinogens and Mutagens Directive (Directive 2004/37/EC)
Belgium	10	3	0.1	0.05	Ministerie van Sociale Zaken en Werkgelegenheid
Denmark	10	5	0.10	0.05	Direktoratet for Arbejdstilsynet
Finland	10	No limit	0.05	0.05	National Board of Labour Protection
France	10	5	0.10	0.05	Ministère du Travail
Germany	10	0.5 <sup>^</sup>	0.05 <sup>^</sup>	0.05 <sup>^</sup>	Bundesministerium für Arbeit und Soziales
Italy	10	3	0.1	0.1	Decreto Legislativo 1 giugno 2020 n. 44
Netherlands	10	5	0.075	0.075	Ministerie van Sociale Zaken en Werkgelegenheid
Norway	10	5	0.10	0.05	Direktoratet for Arbejdstilsynet
Poland	10	No limit	0.1	0.1	Regulation of the Minister of Labour and Social
Romania		10	0.10	0.05	Government Decision regarding carcinogenic agents (in Annex 3: Quartz, Cristobalite, Tridymite).
Spain	10	3	0.05	0.05	Instrucciones de Técnicas Complementarias (ITC)
Sweden		5	0.10	0.05	National Board of Occupational Safety and Health
UK	10	4	0.10	0.10	Health & Safety Executive

<sup>^</sup> Defined for a density of 1 g/cm<sup>3</sup>, i.e. for minerals with a common density of 2,5 g/cm<sup>3</sup>, a calculated OEL of 1,25 mg/m<sup>3</sup> applies.

\*Assessment Criterion (reference value)

#### Information on monitoring procedures

United Kingdom

MDHS 14/4 - "General methods for sampling and gravimetric analysis of respirable, thoracic and inhalable aerosols"  
MDHS 101 - "Crystalline silica in respirable airborne dusts"

NIOSH

NIOSH 0500 "Particulates not otherwise regulated, total"  
NIOSH 0600 "Particulates not otherwise regulated, respirable"  
NIOSH 7500 "Silica, Crystalline, by XRD (filter redeposition)"

### 8.2 - Exposure controls

#### 8.2.1 APPROPRIATE ENGINEERING CONTROLS

Review your applications in order to identify potential sources of dust exposure. Local exhaust ventilation, which collects dust at source, can be used. For example down draft tables, emission controlling tools and materials handling equipment. Keep the workplace clean. Use a vacuum cleaner. Avoid brushing and compressed air.

If necessary, consult an industrial hygienist to design workplace controls and practices.

The use of products specially tailored to your application(s) will help to control dust. Some products can be delivered ready for use to avoid further cutting or machining. Some could be pre-treated or packaged to minimise or avoid dust release during handling.

Consult your supplier for further details

#### 8.2.2 - Personal Protective Equipment

Skin protection:

Use of gloves and work clothes is recommended.

Soiled clothes should be cleaned before being taken off (e.g. use vacuum cleaning, not compressed air).

Eye protection:

As necessary wear goggles or safety glasses with side shields.

Respiratory protection:

For dust concentrations below the exposure limit value, RPE is not required but FFP2 respirators may be used on a voluntary basis.

For short-term operations where excursions are less than ten times the limit value use FFP2 respirators.

In case of higher concentrations or where the concentration is not known, please seek advice from your company and/or local Thermal Ceramics' supplier.

#### INFORMATION AND TRAINING OF WORKERS

Workers should be trained on good working practices and informed on applicable local regulations

#### 8.2.3 - Environmental Exposure Controls

Refer to local, national or European applicable environmental standards for release to air water and soil.

For waste, refer to section13

## 9 - Physical and chemical properties

<b>Information on basic physical and chemical properties</b>	Not Applicable
<b>State</b>	Yellow powder
<b>Colour</b>	Not applicable
<b>Odour</b>	None
<b>Odour threshold</b>	Not Applicable
<b>pH</b>	Not applicable
<b>Melting point/freezing point</b>	> 2000°C
<b>Initial boiling point and boiling point range</b>	Not applicable
<b>Flash point</b>	Not applicable
<b>Evaporation rate</b>	Not Applicable
<b>Flammability (solid, gas)</b>	Not applicable
<b>Upper/lower flammability or explosive limits</b>	Not applicable
<b>Vapour pressure</b>	Not applicable
<b>Vapour density</b>	Not Applicable
<b>Relative density</b>	-
<b>Solubility(ies)</b>	Not applicable
<b>Partition co-efficient: n-octanol/water</b>	Not applicable
<b>Auto-ignition temperature</b>	Not applicable
<b>Decomposition temperature</b>	Not Applicable
<b>Viscosity</b>	Not Applicable
<b>Other safety information</b>	No further relevant information available.
<b>Particle Characteristics</b>	Not applicable
<b>Explosive properties</b>	Not applicable
<b>Oxidising properties</b>	Not applicable

## 10 - Stability and Reactivity

### 10.1 - Reactivity

The material is stable and non reactive.

### 10.2 - Chemical Stability

The product is inorganic, stable and inert

### 10.3 - Possibility of Hazardous Reactions

None

### 10.4 - Conditions to Avoid

Please refer to handling and storage advice in Section 7

### 10.5 - Incompatible Materials

None

### 10.6 - Hazardous decomposition products

None

## 11 - Toxicological information

### Toxicokinetics, metabolism and distribution

#### 11.1.1 BASIC TOXICOKINETICS

Exposure is predominantly by inhalation or ingestion, available toxicological information is as follows:

#### 11.1.2 Human Toxicological data

No clear evidence of lung problems is attributable to exposure to alumina particles in spite of widespread and, in some cases, substantial exposure in various sectors of industry.

#### 11.1 - Information on hazard classes as defined in Regulation (EC) No 1272/2008

##### ACUTE TOXICITY

Lethal dose 50 % (LD50) >5000 mg/kg Rat OECD 401 (acute oral toxicity)

Lethal concentration 50% (LC50): 7.6 mg/l/1h Rat OECD 403 (acute inhalation toxicity)

##### EXPERIMENTAL STUDIES

In animal studies, no fibrosis or other lung effects was observed following repeated inhalation exposure levels of 20 mg/m<sup>3</sup> and above. Although some absorption may occur from inhaled particles, there is no evidence that this is sufficient to cause systemic effects and any link with Alzheimer's disease is considered to be remote.

## 12 - Ecological information

### 12.1 - Toxicity

These products are inert materials that remain stable overtime.  
No adverse effects of this material on the environment are anticipated.

### 12.2 - Persistence and degradability

### 12.3 - Bioaccumulative potential

### 12.4 - Mobility in soil

### 12.5 - Results of PBT and vPvB assessment

### 12.6 - Endocrine Disrupting Properties

### 12.7 - Other adverse effects

### 13 - Disposal Considerations

#### 13.1 - Disposal Considerations

To prevent waste materials from becoming airborne during waste storage, transportation and disposal, a covered container or plastic bagging is recommended.

For Australia, waste from these materials should be considered as hazardous waste and local waste authorities should be contacted for correct disposal methods.

For other countries, waste from these materials (even after use above 900°C) is not classified as hazardous waste and may generally be disposed of at a normal tipping site which has been licensed for the disposal of industrial waste. Taking into account any possible contamination during use, which may be classified as hazardous, expert guidance should be sought.

Such a waste is normally dusty (unless wetted) and so should be properly bagged and clearly labelled for disposal. At some tip sites dusty waste may be treated differently in order to ensure they are dealt with promptly and to avoid them being windblown. Check for national and /or regional regulations to identify all applicable disposal requirements.

### 14 - Transport information

#### 14.1 - Transport information

##### 14.1. UN number

Not Applicable

##### 14.2. UN proper shipping name

Not Applicable

##### 14.3. Transport hazard class(es)

Not Applicable

##### 14.4. Packing group

Not Applicable

##### 14.5. Environmental hazards

Not Applicable

##### 14.6. Special precautions for user

Not Applicable

##### 14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not Applicable

### 15 - Regulatory information

#### 15.1 - Regulatory information

This SDS has been prepared in accordance with WHO GHS rev. 6 requirements. Where applicable, local regulations have been followed.

### 16 - Other Information

#### 16.1 - ADDITIONAL INFORMATION AND PRECAUTIONS TO BE CONSIDERED UPON REMOVAL OF AFTER SERVICE MATERIAL

#### 16.2 - uses advised against

#### 16.3 - NOTE

This Safety Data Sheet was originally produced in English and has subsequently been translated in to other languages; whilst every effort has been made to make this an accurate translation, please be aware that technical terms do not always translate correctly. The English version should always be considered as the reference version.

#### 16.4 - Further Information

##### FURTHER INFORMATION

Further information can be found on

<http://www.morganthermalceramics.com/>

<http://www.ecfia.eu/>

<http://www.safeworkaustralia.gov.au/sites/swa/about/publications/pages/workplace-exposure-standards-airborne-contaminants>

#### 16.5 - Technical Datasheets

##### TECHNICAL DATA SHEETS

For more information on individual products please see the technical data sheet section at [www.morganthermalceramics.com](http://www.morganthermalceramics.com)

#### 16.6 - Revision Summary

Update to section 8.

#### 16.7 - NOTICE

The information presented herein is based on data considered to be accurate as of the date of preparation of this Safety Data Sheet. However, no warranty or representation, express or implied, is made as to the accuracy or completeness of the foregoing data and safety information, nor is any authorization given or implied to practice any patented invention without a license. In addition, no responsibility can be assumed by the vendor for any damage or injury resulting from abnormal use, from any failure to adhere to recommended practices, or from any hazards inherent in the nature of the product.