

## SAFETY DATA SHEET

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

SDS Number: 443 Date of first issue: 13 February 2020 Date of last revision: 21 February 2022

### 1 - Identification of product

#### 1.1 - Identification of Product

**Tradenames:** EST Block,

The above-mentioned product contains Alkaline-earth silicate wools (AES wools)

Index Number: 650-016-00-2 Annex VI

CAS number: 436083-99-7

Registration number: 01-2119457644-32-0000

#### 1.2 - Use of Product

Fire retardant, passive fire protection, thermal insulation and electric insulation for lithium ion battery

#### 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, Motibhojan 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

This board is a board made of AES wool bound with organic and inorganic materials, combining insulation, resistance to fire, mechanical properties and dimensional stability.

COMPONENT	% by weight	CAS No.	REACH Registration Number	Hazard Classification according to CLP
Alkaline-earth silicate wools	<85	436083-99-7	01-2119457644-32	Note Q exonerated
Inert Inorganic binder	0-65	Not Applicable	Not yet available	Not classified as hazardous
Amorphous Silica	10-50	Not Applicable	Not yet available	Not classified as hazardous
Starch	2-10	9005-25-8	Not yet available	Not classified as hazardous

Composition:

\* CAS definition: Alkaline earth silicate (AES) consisting of silica (50-82 wt%), calcia and magnesia (18-43 wt%), alumina, titania and zirconia (less than 6 wt%), and trace oxides.

IT IS STATED that these fibres comply with the TERMS of the "NOTE Q" of EUROPEAN COMMISSION regulation EC1272/2008 of 16 December 2008

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

No symptoms or effects expected either acute or delayed

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

## 5 - Fire-fighting measures

### 5.1 - Extinguishing media

Non-combustible products. Fire protection class: 0  
Packaging and surrounding materials could be combustible.  
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

Where abnormally high dust concentrations occur, provide the workers with appropriate protective equipment as detailed in section 8.  
Restore the situation to normal as quickly as possible.

### 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

Avoid damaging packaging.  
Always use sealed and visibly labelled containers  
Emptied containers, which may contain debris, should be cleaned (see 6.3) before disposal or recycling.  
Recyclable cardboard and/or plastic films are recommended for packaging.

### 7.3 - Specific end use

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

### 8.1 - Control parameters

#### Information on monitoring procedures

United Kingdom

MDHS 59 specific for MMVF: "Man-made mineral fibre - Airborne number concentration by phase-contrast light microscopy" and MDHS 14/4 "General methods for sampling and gravimetric analysis of respirable and inhalable dust"

NIOSH

NIOSH 0500 "Particulates not otherwise regulate, total"  
NIOSH 0600 "Particulates not otherwise regulate, respirable"  
NIOSH 7400 "Asbestos and other fibres by PCM"

### 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:

Wear gloves and work clothes, which are loose fitting at the neck and wrists. Soiled clothes should be cleaned to remove excess fibres before being taken off (e.g. use vacuum cleaner, not compressed air). Wash work clothes separately from other clothing.

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

## 9 - Physical and chemical properties

### Information on basic physical and chemical properties

State	Not Applicable
Colour	Dark brown solid surface with a white wool appearance core
Odour	Not applicable
Odour threshold	None
pH	Not Applicable
Melting point/freezing point	Not applicable
Initial boiling point and boiling point range	1275 - 1300°C (2327 - 2372°F)
Flash point	Not applicable
Evaporation rate	Not applicable
Flammability (solid, gas)	Not Applicable
Upper/lower flammability or explosive limits	Not applicable
Vapour pressure	Not applicable
Vapour density	Not Applicable
Relative density	2.5 - 3.0
Solubility(ies)	Less than 1 mg/l
Partition co-efficient: n-octanol/water	Not applicable
Auto-ignition temperature	Not applicable
Decomposition temperature	Not Applicable
Viscosity	Not Applicable
Other safety information	No further relevant information available.
Particle Characteristics	Not applicable
Explosive properties	Not applicable
Oxidising properties	Not applicable

## 10 - Stability and Reactivity

### 10.1 - Reactivity

AES is stable and non reactive

### 10.2 - Chemical Stability

AES is inorganic, stable and inert

### 10.3 - Possibility of Hazardous Reactions

During first heating, oxidation products from the organic binder might be emitted in a temperature range from 180°C to 600°C. It is recommended to ventilate the room until gases and fumes have disappeared. Avoid exposure to high concentrations of gas or fumes.

### 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

Upon heating above 900°C for sustained periods, this amorphous material begins to transform to mixtures of crystalline phases. For further information please refer to Section 16.

## 11 - Toxicological information

### Toxicokinetics, metabolism and distribution

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

In lifetime chronic studies there was no exposure-related effect more than would be seen with any "inert" dust. Subchronic studies at the highest doses achievable produced at worst a transient mild inflammatory response. Fibres with the same ability to persist in tissue do not produce tumours when injected into the peritoneal cavity of rats.

## 12 - Ecological information

### 12.1 - Toxicity

These products are insoluble materials that remain stable overtime and are chemically identical to inorganic compounds found in the soil and sediment; they remain inert in the natural environment.

No adverse effects of this material on the environment are anticipated.

### 12.2 - Persistence and degradability

Not established

### 12.3 - Bioaccumulative potential

Not established

### 12.4 - Mobility in soil

No information available

### 12.5 - Results of PBT and vPvB assessment

This substance is not considered to be persistent, bioaccumulating nor toxic (PBT).

This substance is not considered to be very persistent and very bioaccumulative (vPvB).

### 12.6 - Endocrine Disrupting Properties

No additional information available

### 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

The fibres contained in this product have been tested for bio persistence according to Note Q requirements under European Classification, Labelling and Packaging Regulations (EC/1272/2008) and it's subsequent amendments.

Based on these results they are exonerated from classification as carcinogens in Europe and Australia.

## 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

New Safety Data Sheet

#### 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.