



## SAFETY DATA SHEET

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

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### 1 - Identification of product

#### 1.1 - Identification of Product

**Tradenames:** FireMaster Ul-T-Wrap, Min-K Data Recorder Insulation, Min-K FDR, Min-K Moulded Shapes,

The above-mentioned products are articles containing various forms of mineral wools and other substances.

Index Number: None assigned

CAS number: None assigned

Registration number: None assigned

#### 1.2 - Use of Product

Min-K® is a family of microporous insulation designed for use in high temperature 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, 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

No labelling required as product is considered an article under REACH and CLP regulations.

#### 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.

Titanium dioxide powder is classified under REACH as a category 2 carcinogen. IARC has classified titanium dioxide as possibly carcinogenic in humans (Group 2B).

Polycrystalline wools are not classified under REACH. In 1988 IARC classified man-made mineral fibres as possible human carcinogens (2B) and, at that time PCWs were included in this broad category of materials. Current information on carcinogenicity is given in Section 11.

### 3 - Composition / Information On Ingredients

#### 3.2 Mixture

These products are quilted flexible composites combining high temperature insulating properties and very low thermal conductivity and can be used particularly where conditions impose low weight and space constraints at high temperature

Component	% by weight	CAS No.	REACH Registration Number	Hazard Classification according to CLP
Amorphous silica	< 90	112945-52-5	01-2119379499-16	Not classified as hazardous
E-glass filament	1 - 10	65997-17-3	01-2119488048-29	Not classified as hazardous
Amorphous silica fibres(1)	0 - 10	65997-17-3	01-2119488048-29	Carcinogen Cat 1b.
Titanium dioxide (2)	0 - 20	1317-80-2	01-2119489379-17	Not classified as hazardous
AES fibres	0 - 10	436083-99-7	01-2119457644-32	Not classified as hazardous
Alumina	0 - 30	1344-28-1	01-2119817795-27	Not classified as hazardous
Hydrated alumina	0 - 50	21645-51-2	01-2119529246-39	Not classified as hazardous
Cured phenol formaldehyde resin	0 - 10	9003-35-4	Not yet available	Not classified as hazardous
Polycrystalline Wool (3)	0 - 20	675106-31-7	01-2119456884-25	Not classified as hazardous

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

(1) Contained in product mixes: TE 1400; TE1800;

(2) Contained in product mixes: TE1400; TE1800; 2000; FireMaster UI-T Wrap

(3) Contained in product mixes: 2000; 1303; 1304

\* 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

### 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

No special treatment required, if exposure occurs wash exposed areas to avoid irritation.

### 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

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**

Store in original packaging in a dry area.  
Always use sealed and clearly labelled containers.  
Avoid damaging containers.  
Reduce dust emission during unpacking.

### **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 and comply with local regulations. 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 national OELs (November 2014) are given in the table below.

COUNTRY	Total Dust (mg/m <sup>3</sup> )	Resp Dust (mg/m <sup>3</sup> )	MMMF (fibre/ml)	Source
Austria	10	6	1	Grenzwerteverordnung
Belgium	10	3	1	Valeurs limites d'exposition professionnelle – VLEP/ Grenswaarden voor beroepsmatige blootstelling – GWBB
Denmark	10	5	1	Grænseværdier for stoffer og materialer
Finland	No limit	No limit	1	Finnish Ministry of Social Affairs and Health
France	10	5	1	Institut National de Recherche et de Sécurité
Germany	10	1.25	No Limit	TRGS 900
Hungary	No limit	No limit	7	EüM-SZCSM rendelet
Ireland	10	4	1	HAS – Ireland
Italy	10	3	1	Uses EU values
Luxembourg	10	6	1	Agents Chimiques, Cancérigènes Ou Mutagènes Au Travail
Netherlands	10	5	1	SER
Norway	10	5	0.5	Veiledning om administrative normer for forurensning i arbeidsatmosfære
Poland	No limit	No limit	2	Dziennik Ustaw 2010
Spain	10	3	1	INSHT
Sweden	10	5	1	AFS 2005:17
Switzerland	10	6	1	SUVA - Valeurs limites d'exposition aux postes de travail
UK	10	4	2	EH40/2005

#### 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

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

### Information on basic physical and chemical properties

State	Not applicable
Colour	Quilted blanket, moulded board or shapes
Odour	Not applicable
Odour threshold	Slight
pH	Not Applicable
Melting point/freezing point	Not applicable
Initial boiling point and boiling point range	Not determined
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	Not applicable
Solubility(ies)	Not soluble in water
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

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

This product may produce carbon dioxide, carbon monoxide and traces of ammonia, formaldehyde and phenol at initial heating.

## 11 - Toxicological information

### Toxicokinetics, metabolism and distribution

#### 11.1.1 BASIC TOXICOKINETICS

Exposure is predominantly by inhalation or ingestion.

AES fibres contained in the products listed in the title have been designed to be rapidly cleared from lung tissue. This low biopersistence has been confirmed in many studies on AES using EU protocol ECB/TM/27(rev 7). When inhaled, even at very high doses, they do not accumulate to any level capable of producing a serious adverse biological effect.

#### 11.1.2 Human Toxicological data

#### E GLASS CONTINUOUS FILAMENT

Due to its large diameter, continuous glass filament is not respirable.

No specific information on human toxicology available at this time.

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

#### EXPERIMENTAL STUDIES FOR AES WOOL

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.

#### POLYCRYSTALLINE WOOLS (Only in mixes 2000, 1304)

Lifetime rat inhalation studies in the rat on PCW fibres at the maximum levels achievable have shown no evidence of lung cancer, lung fibrosis or any other adverse effect, apart from a minimal pulmonary response typical of that of a 'low toxicity dust'.

Also, a lifetime feeding study in rats has produced no evidence of any adverse effects at levels up to 2.5 % in the diet.

Intraperitoneal, intratracheal and intrapleural studies in rats, together with two in vitro tests, all showed negative results whereas asbestos and crystalline silica which were used as positive controls (where relevant) produced positive responses.

The results of these extensive testing programmes indicate that PCW materials lack one or more of the fundamental characteristics necessary for mesothelioma induction, as well as not possessing fibrogenic potential..

#### Experimental Studies for Titanium Dioxide (Contained in product mixes TE1400; TE1800; 2000; FireMaster UI-T Wrap)

Titanium dioxide was reclassified by the IARC in 2006 as a "possibly carcinogenic to humans (Group 2B)". The classification was based on sufficient evidence in experimental animals but inadequate evidence in humans for the carcinogenicity of titanium dioxide. IARC indicated in the monograph that "the studies do not suggest an association between occupational exposure to titanium dioxide as it occurred in recent decades in Western Europe and North America and risk for cancer." (IARC Monograph volume 93.)

When tested using approved methods (as listed in Regulation (EC) 1907/2006, Annex 8, Section 8.1), fibres contained in this material give negative results. All man-made mineral fibres, like some natural fibres, can produce a mild irritation resulting in itching or rarely, in some sensitive individuals, in a slight reddening. Unlike other irritant reactions this is not the result of allergy or chemical skin damage but is caused by mechanical effects.

## 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

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 mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).

This mixture contains no substance 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

## 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

### 16.6 - Revision Summary

Content checked and revision date updated

### 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.