

## SAFETY DATASHEET

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

SDS Number: 219

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### 1 - Identification of product

#### 1.1 - Identification of Product

**Tradenames:** Alphawool 1600 VF Board,

The above-mentioned products contain polycrystalline wools.

#### 1.2 - Use of Product

Application as thermal insulation, heat shields, heat containment, gaskets and expansion joints at temperatures up to 1600°C in industrial furnaces, ovens, kilns, and other process equipment and in the aerospace, automotive industries.

#### 1.3 - Identification of Company

**U.K.** THERMAL CERAMICS LIMITED  
Tebay Road, Bromborough  
Wirral, Merseyside CH62 3PH  
Tel. : +44 (0) 151 334 4030  
Fax : +44 (0) 151 334 1684

#### 1.4 - Emergency information

Tel: + 44 (0) 7931 963 973

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

#### Description

This product is a board or a form made of organic and inorganic materials bound with polycrystalline fibres.

#### Composition

| COMPONENT             | % by weight | CAS No.     | REACH Registration Number | Hazard Classification according to CLP |
|-----------------------|-------------|-------------|---------------------------|--|
| Polycrystalline Fibre | 70-100      | 675106-31-7 | 01-2119456884-25          | Not classified as hazardous            |
| Colloidal Silica      | 5-15        | 7631-86-9   | 01-2119379499-16          | Not classified as hazardous            |
| Starch                | 2-10        | 9005-25-8   | Not yet available         | Not classified as hazardous            |

#### composition additional information

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

### 4 - First-Aid measures

#### 4.1 - Description of First Aid Measures.

##### Skin

Handling of this material may generate mild mechanical temporary skin irritation. If this occurs, 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.

#### first aid additional information

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. However, virgin product binder may burn and produce gases and/or fumes.

#### 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

The main application of these products is as thermal insulation. 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      | 1                               | 5                              | 1               | Institut National de Recherche et de Sécurité   |
| Germany     | 10                              | 1.25                           | No Limit        | TRGS 900  |
| Hungary     | No limit                        | No limit                       | 1               | 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

|  |                             |
|--|-----------------------------|
| <b>Information on basic physical and chemical properties</b> | Not applicable              |
| <b>Appearance</b>  | White board or form         |
| <b>Odour</b>   | Slight                      |
| <b>Odour threshold</b>                                       | Not Applicable              |
| <b>pH</b>  | Not applicable              |
| <b>Melting point/freezing point</b>                          | > 1900°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>                                      | 160 - 180 kg/m <sup>3</sup> |
| <b>Solubility(ies)</b>                                       | Less than 1 mg/l            |
| <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>Explosive properties</b>                                  | Not applicable              |
| <b>Oxidising properties</b>                                  | Not applicable              |

## 10 - Stability and Reactivity

### 10.1 - Reactivity

AES is stable and non reactive

### 10.2 - Chemical Stability

The product 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

None

## 11 - Toxicological information

### Toxicokinetics, metabolism and distribution

#### 11.1 Basic toxicokinetics

Exposure is predominantly by inhalation or ingestion. Polycrystalline fibres have not been shown to migrate from the lung and/or gut and do not become located in other organs of the body. Available toxicological information is as follows:

#### 11.1 - Information on toxicological effects

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.

### Irritant properties

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

### a - Ecotoxicity (aquatic and terrestrial, where available)

#### 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 - Other adverse effects

No additional information available

## 13 - Disposal Considerations

### 13.1 - Waste treatment methods

Waste from these materials may be generally disposed off at a landfill, which has been licensed for this purpose. Please refer to the European list (Decision N° 2000/532/CE as modified) to identify your appropriate waste number, and insure national and/or regional regulations are complied with.

Unless wetted, such a waste is normally dusty and so should be properly sealed in containers for disposal. At some authorised disposal sites, dusty waste may be treated differently in order to ensure they are dealt with promptly to avoid them being windblown. Check for any national and/or regional regulations, which may apply.

## 14 - Transport information

### Transport

#### 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 - Safety health and environment regulations/legislation specific for the substances or mixtures

EU regulations:

- Regulation (EC) No 1907/2006 dated 18th December 2006 on Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)
- Regulation (EC) No 1272/2008 dated 20th January 2009 on classification, labelling and packaging of substances and mixtures (OJ L 353)
- Commission regulation (EC) No 790/2009 of 10 August 2009 amending, for the purposes of its adaptation to technical and scientific progress, Regulation (EC) No 1272/2008 of the European Parliament and of the Council on classification, labelling and packaging of substances and mixtures.
- The 1st Adaptation to Technical Progress (ATP) to Regulation (EC) No 1272/2008 enters into force on 25 September 2009. It transfers the 30th and 31st ATPs of Directive 67/548/EEC to the Regulation (EC) No 1272/2008.

#### POLYCRYSTALLINE FIBRE

In Germany and in accordance with Technical Rules for Hazardous Substances TRGS905 (2.3. para. 6) inorganic fibrous dust is classified in category 3.

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.

### 15.2 - Chemical Safety Assessment

Chemical Safety Reports have been requested from suppliers, as soon as this information is available it will be shared with downstream users.



## 16 - Other Information

### Useful references

(the directives which are cited must be considered in their amended version)

- Council Directive 89/391/EEC dated 12 June 1989 "on the introduction of measures to encourage improvements in the safety and health of workers at work" (OJEC L 183 of 29 June 1989, p.1).
- Regulation (EC) No 1907/2006 dated 18th December 2006 on registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)
- Regulation (EC) No 1272/2008 dated 20th January 2009 on classification, labelling and packaging of substances and mixtures (OJ L 353)
- Commission Directive 97/69/EC of 5 December 1997 adapting to technical progress for the 23rd time Council Directive 67/548/EEC (OJEC of 13 December 1997, L 343).
- Council Directive 98/24/EC of 7 April 1998 "on the protection of the health and safety of workers from the risks related to chemical agents at work" (OJEC L 131 of 5 May 1998, p11).

### Precautionary measures

High concentrations of fibres and other dusts may be generated when after-service products are mechanically disturbed during operations such as wrecking. Therefore Morgan Thermal Ceramics recommends:

- a) control measures are taken to reduce dust emissions;
- b) all personnel directly involved wear an appropriate respirator to minimise exposure; and
- c) Compliance with local regulatory limits.

### CARE Program

The trade association representing the European high temperature insulation wool industry (ECFIA) has undertaken an extensive hygiene programme for High Temperature Insulation Wool (HTIW). The objectives are twofold: (i) to monitor workplace dust concentrations at both manufacturers' and customers' premises, and (ii) to document manufacturing and use of HTIW products from an industrial hygiene perspective in order to establish appropriate recommendations to reduce exposures. The initial results of the programme have been published. If you wish to participate in the CARE programme, contact ECFIA or your Thermal Ceramics' supplier.

### Uses advised against

#### Website

For more information connect to:

The Morgan Thermal Ceramics' website: (<http://www.morganthermalceramics.com/>)

Or ECFIA's website: (<http://www.ecfia.eu>)

### Revision Summary

Update to Section 8

### Technical data sheets

For more information on individual products please see the relevant technical data sheet available from <http://www.morganthermalceramics.com/downloads/datasheets>

### Other Information

#### NOTICE:

The information presented herein is based on data considered to be accurate as of the date of preparation of this Material Safety Data Sheet. However safe as provided by law, 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 authorisation given or implied to practice any patented invention without a licence. 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 (however, this shall not act to restrict the vendor's potential liability for negligence or under statute).