



## 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:** Pyrotek Sivex Biojoint ISW 15,

These products are available with and without Aluminium Foil and/or Self adhesive backing, please contact your Morgan Thermal Ceramics Supplier for more information

The above-mentioned products contain 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

Application as seal in molten aluminium casting

#### 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](http://www.morganthermalceramics.com)  
[sds.tc@morganplc.com](mailto: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 according to Classification, Labelling and Packaging regulations (CLP) 1272/2008 EEC

##### 2.1.2 Additional information:

This product is considered an article under REACH regulation 1907/2006. The materials do not contain any substances of very high concern or substances intended to be released under normal foreseeable conditions of use, these products are therefore not classified under the CLP regulations 1272/2008 which classifies substances and mixtures.

#### 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.

#### CHRONIC EFFECTS FOR CRYSTALLINE SILICA

These products may contain minimal amounts of crystalline silica. Prolonged/repeated inhalation of respirable crystalline silica dust may cause delayed lung injury (silicosis). IARC (International Agency for Research on Cancer) states that there is "sufficient evidence in humans for the carcinogenicity of inhaled crystalline silica in the form of quartz or cristobalite from occupational sources to classify crystalline silica as carcinogenic to humans (Group 1)". (Monograph V 68)  
In making the overall evaluation the Working Group noted however that carcinogenicity in humans was not detected in all industrial circumstances studied.

### 3 - Composition / Information On Ingredients

These products are expanding intumescent paper, available with and without self adhesive backing paper

COMPONENT	%	CAS/EC Number	Classification according to EC 1272/2008	REACH Registration Number
AES wool (synthetic fibres, alk. earth silicate)	59-65.5	436083-99-7*	Not Classified - Note Q	01-2119457644-32-0000
Chopped strand borosilicate glass fibre <sup>1</sup>	1.7-2.0	65997-17-3	Article - Not Classified	Not yet available
Vermiculite <sup>2</sup>	29-32	1318-00-9	Not Classified	Not yet available
Crystalline Silica <sup>3</sup>	0.2 - 3.2	014808-60-7	STOT RE 2 (H373)	Not yet available
Exfoliating Graphite	3.0-3.5	7782-42-5/ 231-999-5	Not applicable	Not yet available
Polymeric Binder and Self adhesive coating	6.0-7.1	Not applicable - Polymer	Not applicable	Not applicable

\* 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.

1) The chopped strand continuous filament glass fibres contained in this product do not fall within the scope of Directive 97/69/E as they are not "fibres with random orientation". Chopped strand continuous glass fibres are not classified as carcinogenic according to directive 97/69/CE

2) Granulated Mangesium alumino silicate mineral

3) Present in the Vermiculite as mined and appears in the granulated vermiculite at concentrations of 1.0-10% by weight

Self adhesive products are supplied faced on one side with a Kraft release paper

### 4 - 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 is 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. 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 workers with appropriate protective equipment as detailed in section 8.

Restrict access to the area to a minimum number of workers required.  
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 exposure limits applying (in November 2014) in different countries are given below:

COUNTRY	Total Dust (mg/m3)	Resp Dust (mg/m3)	Quartz (mg/m3)	Cristobalite (mg/m3)	MMVF (f/ml)	Fine Carbon Dust <sup>^</sup> (mg/m3)	Source
EU BOELV			0.10	0.10			Carcinogens and Mutagens Directive (Directive 2004/37/EC)
Austria	10	6	0.10	0.10	1	No limit	Grenzwerteverordnung
Belgium	10	3	0.10	0.05	1	3.5	Valeurs limites d'exposition professionnelle – VLEP/ Grenswaarden voor beroepsmatige blootstelling – GWBB
Denmark	10	5	0.10	0.05	1	3.5	Grænseværdier for stoffer og materialer
Finland	10	No limit	0.05	0.05	1	3.5	Finnish Ministry of Social Affairs and Health
France	10	5	0.10	0.05	1	3.5	Institut National de Recherche et de Sécurité
Germany*	10	0.5*	0.05*	0.05*	No limit	No limit	TRGS 900
Hungary	10	No limit	0.10	0.10	1	No limit	EüM-SZCSM <i>rendelet</i>
Ireland	10	4	0.05	0.05	1	3.5	HAS – Ireland
Italy	10	3	0.1	0.1	1	No limit	Uses EU values
Luxembourg	10	6	0.10	0.10	1	No limit	Agents Chimiques, Cancérigènes Ou Mutagènes Au Travail
Netherlands	10	5	0.075	0.075	1	No limit	SER
Norway	10	5	0.10	0.05	0.5	3.5	Veiledning om administrative normer for forurensning i arbeidsatmosfære
Poland	10	No limit	0.10	0.10	2	No limit	Dziennik Ustaw 2010
Spain	10	3	0.05	0.05	1	3.5	INSHT
Sweden	10	5	0.10	0.05	1	3	AFS 2005:17
Switzerland	10	6	0.10	0.10	1	No limit	SUVA - <i>Valeurs limites d'exposition aux postes de travail</i>
UK	10	4	0.10	0.10	2	3.5	EH40/2005

<sup>^</sup> Where "No limit" is displayed, use the dust limits

#### 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>State</b>	Grey/white specked fibrous mat
<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>	> 1250°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>	The material will burn for a short period only until the polymeric binder is burnt out or the resulting expansion self-extinguishes
<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>	200-280 g/m <sup>3</sup>
<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 product is stable

### 10.2 - Chemical Stability

The product is inorganic, stable and inert

### 10.3 - Possibility of Hazardous Reactions

### 10.4 - Conditions to Avoid

Please refer to handling and storage advice in Section 7

### 10.5 - Incompatible Materials

Strong oxidising agents, strong alkalis and hydrofluoric acid

### 10.6 - Hazardous decomposition products

Decomposition of the polymeric binder will occur at temperatures above 200°C releasing smoke, H<sub>2</sub>O, CO, CO<sub>2</sub> and hydrocarbons. When heated above 250°C the graphite will expand resulting in a thermally insulating char.

Hazardous Polymerisation: Will not occur.

## 11 - Toxicological information

### Toxicokinetics, metabolism and distribution

#### 11.1.1 BASIC TOXICOKINETICS

Exposure is predominantly by inhalation or ingestion. Man made vitreous fibres of a similar size to AES have not been shown to migrate from the lung and/or gut and do not become located in other organs of the body  
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

##### Epidemiology for crystalline silica

Prolonged/repeated inhalation of respirable crystalline silica dust may cause delayed lung injury (silicosis).

In evaluating crystalline silica as a cancer risk, the International Agency for Research on Cancer (IARC) reviewed several studies from different industries and concluded that crystalline silica from occupational sources inhaled in the form of quartz or cristobalite is carcinogenic to humans (Group 1) [IARC Monograph; vol.68; June 1997]. However, in reaching its conclusion, IARC stated that the carcinogenicity in humans could not be found in all industries reviewed and that carcinogenicity might be dependent on inherent characteristics of crystalline silica or on external factors affecting biological activity (e.g., cigarette smoking) or distribution of its polymorphs.

##### RESPIRATORY TOXICITY FOR GRAPHITE

Cases of pneumoconiosis, pulmonary fibrosis and emphysema have been reported in workers following prolonged exposures to high levels of airborne graphite dust

#### 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.

##### Experimental Studies for Crystalline Silica

Animals exposed to very high concentrations of crystalline silica, artificially or by inhalation, have reported fibrosis and tumours (IARC Monographs 42 and 68).

Inhalation and intratracheal installation of crystalline silica in rats caused lung cancer. However, studies in other species such as mice and hamsters caused no lung cancer. Crystalline silica also caused fibrosis in rats and hamsters in several inhalation and intratracheal installation studies.

##### Experimental Studies for Vermiculite

Acute toxicity is not known but LD50/LC50 values are expected to be high. Vermiculite is used as an inert carrier material for acute toxicity animals tests and as a carrier for additives used in animal feed stuffs. Contains trace amounts of respirable crystalline silica as mined.

Negative results have been obtained in animal studies (EU method B 4) for skin irritation. Inhalation exposures using the nose only route produce simultaneous heavy exposures to the eyes, but no reports of excess eye irritation exist. Animals exposed by inhalation similarly show no evidence of respiratory tract irritation. Human data confirms that only mechanical irritation, resulting in itching, occurs in humans following exposure to mineral wools

Skin contact with graphite dusts may cause temporary irritation due to mechanical effects: Repeated prolonged exposures may lead to dermatitis.

## 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 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

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

Waste from these materials (even after use above 900°C) is not generally classified as hazardous waste and may 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

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.