



## Material Safety Data Sheet

Product : **Ceramic Fibre Spoons**

Date : April 2001

### 1. Identification of Substances / Preparation and Company

#### Identification of the product

The above mentioned products contain REFRACTORY CERAMIC FIBRES (Aluminosilicate Glass for High Temperature Use).

#### Supplier Address

Minco Sampling Techniques ( UK ) Ltd  
Tofts Farm Ind Est ( East )  
Brenda Rd  
Hartlepool  
TS25 2BS  
Phone 01429 273252  
Fax 01429 232611

### 2. Composition / Information on Ingredients

#### Description

These products in the form of pre formed shapes are made with refractory ceramic fibres as the main ingredient.

#### Composition

Component	%	CAS Number	Symbol	R Phrases
Refractory Ceramic Fibre	15-95	142 844-00-6	T	R49, R38
Starch	0-10	(EINECS 232-679-6)	N.A.	N.A.
Inert inorganic material	1-75	N.A.	N.A.	N.A.

Chemical composition of refractory ceramic fibres : SiO<sub>2</sub> : 48-60%, Al<sub>2</sub>O<sub>3</sub> : 40-52%.

### 3. Hazards Identification

**Eyes and Skin** : Mild mechanical irritant.

**Inhalation** : May release fibrous dust. Reduce dust exposure as far as technically possible.

**Irritant Effects** : Mechanical irritant to skin, eyes and upper respiratory system may result from exposure.

#### Chronic Respiratory Health Effects

This fibre belongs to a group of fibres classified under Directive 97/69/EC as a category 2 carcinogen ("substances which should be regarded as if they are carcinogenic to human"). Based on results of some animals studies there is a concern that excessive dust exposure may cause fibrosis and cancer of the lung or the pleura. **This has not been confirmed by human data.**

### 4. First Aid Measures

Skin – in case of irritation, rinse affected areas with water and wash gently

Eyes – in case of eye contact flush abundantly with water, have eye bath available.

## 5. Fire Fighting Measures

Non combustible products.  
 Packaging and surrounding materials may be combustible.  
 Use extinguishing agent suitable for type of surrounding combustible materials.  
 Wear self contained breathing apparatus when entering in oxygen deficient areas.

## 6. Accidental Release Measures

### Personal Protection

In case of accidental release or spillage likely to result in an abnormally high dust exposure, provide the workers with appropriate protective equipment as detailed in section 8. Restrict access to the areas to a minimum number of workers. Prevent further dust dispersion for example by damping the materials.

### Methods for cleaning up

Spillage – pick up large pieces and use a vacuum cleaner fitted with high efficiency filter. If brushing is used, ensure that the area is wetted down first. Do not use compressed air for clean up. For waste disposal refer to section 13.

### Environmental Protection

Do not allow wind to be blown. Do not flush spillage to drain and prevent from entering natural water courses. Check for local regulations that may apply.

## 7. Storage

### Storage

Store in dry conditions.

## 8. Exposure Controls and Personal Protection

### Techniques to reduce dust exposure to a minimum

Review your RCF applications and assess situations for dust release.  
 Where practical enclose dust sources and provide dust extraction at source.  
 Delimit RCF work areas and restrict access to informed and trained workers.  
 Use operating procedures which will limit dust protection and exposure of workers.  
 Keep the workplace clean.  
 Use a vacuum cleaner fitted with a HEPA filter ; avoid using brooms and compressed air.

If necessary consult an industrial hygienist to design proper workplace controls.  
 Using products especially tailored to your application(s) will help controlling dust.

### Hygiene standards and exposure limits

Hygiene standards and exposure limits may differ from country to country.  
 Check those currently applying in your country and comply with regulations.  
 Examples of exposure limits are given below :

Country	Exposure Limit*	Source
Germany	0.5 F/ml	TRGS 900
France	0.6 F/ml	Circulaire DRT No 954 du 12.01.95
U.K.	2.0 F/ml	HSE – EH40 – Maximum Exposure Limit

\* Time Weighted Average concentrations of airborne respirable ceramic fibres measured by the conventional membrane filter method.



### **Skin and Eye Protection**

Wear gloves and overalls which are loose fitting at the neck and wrist.  
Wash work clothing separately.  
Wear goggles or safety glasses with side shields in case of overhead working.  
After handling rinse exposed skin with water.

### **Respiratory Protection**

Use appropriate respiratory protective equipment (RPE) against excessive concentrations of fibrous dust or other possible contaminant which could have been introduced.

### **Information/Training of Workers**

Workers shall be informed on :  
The applications involving fibre containing products.  
The potential risks to health resulting from the exposure to fibrous dust.  
The requirements regarding smoking, eating and drinking at the workplace.  
Workers shall be trained on :  
The good working practices to limit dust emissions.  
The proper use of protective equipment.

## **9. Physical and Chemical Properties**

Appearance	: White Fibre	Partition Coefficient	: N.A.
Boiling Point	: N.A.	Odour	: None
Flash Point	: N.A.	Melting Point	: > 1650 C
Autoflammability	: N.A.	Flammability	: N.A.
Oxidising Properties	: N.A.	Explosive Properties	: N.A.
Bulk Density	: 0.25 – 0.35g/cm <sup>3</sup>	Vapour Pressure	: N.A.
Solubility	: Slight		
Length Weighted Geometric Mean Diameter	: >1.5 microns		

## **10. Stability and Reactivity**

Stable under normal conditions.

When first heated above 200 C, the starch binder will start to decompose and oxidise. The decomposition products are mainly carbon dioxide, carbon monoxide, carbon particles, water and trace gases ( eg. Nitrogen dioxide, sulphur dioxide ).

Product which has been in continuous use at elevated temperatures (greater than 900 C) may undergo partial conversion to cristobalite, a form of crystalline silica which can cause severe respiratory disease. The amount of cristobalite present will depend on the temperature and time in service.

However, in most foundry applications the time for which the material is exposed to high temperatures is far too short for detectable amounts of cristobalite to be formed.

## **11. Toxicological Information**

### **Irritant Properties**

When tested using approved methods (Directive 67/548/EC, Annex 5, Method B4), this material gives 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.

### **Human Data on Chronic Respiratory Health Effects**

No known disease associated with exposure to refractory ceramic fibre even though these fibres have been used for nearly 40 years. Pulmonary morbidity studies were carried out among the production workers in Europe and USA. In the American study pleural plaques were reported in 2.9% of workers examined. Plaques do not cause any symptoms and do not develop into disease.



### **Inhalation Toxicology data in Animals**

In earlier studies RCF together with other man-made mineral fibres were regarded as inert. In the 70s and 80s tumours were produced in animals after interpleural or interperitoneal injection but the several inhalation experiments conducted were inconclusive. In 1990 inhalation studies known as the “RCF experiments” were conducted with size selected fibres. Fibrosis, lung tumours and mesotheliomas were produced in animals exposed to very high concentrations. It was then discovered that the size selection process led to a serious contamination of the test samples by non-fibrous particles. The inhaled particles may have decreased the rate of fibre clearance leading to a condition sometimes referred to as pulmonary overload. Experts are still analysing the significance of the RCC results. In further tests, uncontaminated fibre samples have proved to be largely less biologically active.

## **12. Ecological Information**

The product are inert materials and will remain stable over time.

## **13. Disposal Considerations**

Waste from this product is not classified as hazardous waste under EU regulations and may generally be disposed of at a normal tipping site which has been licensed for the disposal of industrial waste. In case of contamination by products classified as hazardous expert guidance should be sought. Unless wetted, such a waste is normally dusty and so should be properly sealed in clearly and visibly labelled containers for disposal. At some tip sites industry waste may be treated differently in order to ensure they are dealt with promptly to avoid them being wind blown. Check for local regulations which may apply.

## **14. Transport Information**

Ensure that dust is not wind blown during transportation.

## **15. Regulatory Information**

### **Fibre Type Definition According to Directive 97/69/CE**

According to directive 97/69/CE fibres contained in this product belong to the group of “man-made vitreous (silicate) fibres with random orientation with alkaline oxide and alkali earth oxide (Na<sub>2</sub>O+K<sub>2</sub>O+CaO+MgO+BaO) content less or equal to 18% by weight”.

### **Fibres included in this product are classified according to directive 97/69/EC.**

Carcinogen category 2  
R49

T (toxic)  
may cause cancer by inhalation

Irritant  
R38

Xi  
irritating to skin

### **Protection of Workers**

Shall be in accordance with Council Directive 90/394/EEC “on protection of workers from the risk related to exposure to carcinogens at work”.

Shall be in accordance with Council Directive 89/391/EEC “on the introduction of measures to encourage improvements in the safety and health of workers at work.

Comply with hygiene standards and any applicable regulation.

### **Other Possible Regulations**

Member states are in charge of implementing European Directives into their own national regulation within a period of time normally given in the Directive. Member States may impose more stringent requirements. Please always refer to national member states regulations.

## 16. Other Information

### Labelling

These vacuum formed products are “articles” and as such, labelling is not mandatory. However, we are complying with the ECFIA recommended labelling.

### Useful References

Hazards from the use of Refractory Ceramic Fibre.

Health and Safety Executive : Information document, HSE 267/(1998)

ECFIA – Working Safely With Refractory Ceramic Fibre Products; code of practice (February 1998).

TRGS521 : Faserstaube.

Commission Directive 97/69/EC of 5 December 1997 adapting to technical progress for the 23<sup>rd</sup> time Council Directive 67/548/EEC on the approximation of the laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substances. Official Journal of the European Communities, 13 December 1997, and its national adaptations.

Maxim LD et al (1998).

CARE – A european programme for monitoring and reducing refractory ceramic fibre dust at the workplace, initial results.

Gefahrstoffe – Reinhaltung der Luft, 58 : 3 , 97 – 103.

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**It is the users responsibility to satisfy itself as to the suitability and completeness of such information for their own particular use.**