

KERAMAB CERAMIC FIBRE TEXTILES

1. IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY

Identification of the products

Common name: Ceramic Fibre Textiles

Identification of the company

INSULCON B.V.

P.O. Box 134

4650 AC STEENBERGEN, The Netherlands

Zilverhoek 4, 4651 SP STEENBERGEN

Tel. : +31 (0)167-565750

Fax : +31 (0)167-566263

KERAMAB N.V.

Belgium

Tel. : + 32 (0)3 711.02.78

INSULCON GMBH

Germany

Tel.: + 49 (0) 2162 249 60-0

2. COMPOSITION / INFORMATION OF INGREDIENTS

Chemical composition of Keramab Ceramic Fibre Textiles:

SiO₂ 45-60 %, Al₂O₃ 40-55 %

CAS Number 142 844-00-6

T (Toxic)

R49

R 38

Other components

Maximum of 20% viscose

3. HAZARDS IDENTIFICATION

RCF dust which has been classified under Directive 97/69/EC among category 2 carcinogens. (In October 2001 the International Agency for Research on Cancer (IARC) re-affirmed that category 2B (possibly carcinogenic to humans) remains the appropriate IARC classification for RCF. Mild mechanical irritation to skin, eyes and upper respiratory system may result from exposure.

Form: MSDS.A1-111/A1-116

Effective: 11022003.es

Supersedes: 18111997.WvdS.mvo

All Rights Reserved

Page 1 of 8

The information, recommendations and opinions set forth herein are offered solely for your consideration, inquiry and verification, and are not, in part or total, to be construed as constituting a warranty or representation for which we assume legal responsibility. Nothing contained herein is to be interpreted as authorization to practice a patented invention without a license.

The Netherlands – Insulcon B.V.

Tel: +31(0)167-565750

Fax: +31(0)167-566263



Belgium – Keramab N.V.

Tel: +32(0)3 711 02 78

Fax: +32(0)3 711 08 56



Germany – Insulcon GmbH

Tel: +49(0)2162/ 24960-0

Fax: +49(0)2162/24960-29



Member of the
INSULCON group

Material Safety Datasheet

4. FIRST AID MEASURES

In case of skin irritation, rinse affected areas with water and wash gently. In case of serious eye contact, flush abundantly with water; have an eye bath available.

5. FIRE-FIGHTING MEASURES

These materials are non-combustible. Use extinguishing agent suitable for type of surrounding combustible materials.

6. ACCIDENTAL RELEASE MEASURES

Personal protection in case of accidental release or spillage likely to result in an abnormally high dust concentration

Provide the workers with appropriate personal protective equipment as detailed in section 8. Restrict access to the area to a minimum number of workers. Restore the situation to normal as quickly as possible. Prevent further dust dispersion for example by damping the materials.

Methods for cleaning up

Pick up large pieces first and finish with a vacuum cleaner fitted with high efficiency filter (HEPA). If sweeping 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 to be wind blown. Do not flush spillage to drain and prevent from entering natural water courses. Check for local regulations which may apply.

7. HANDLING AND STORAGE

Handling

Handling can be a source of dust exposure. Process should be designed to limit the amount of handling. Whenever possible, handling should be carried out under controlled conditions (i.e.,

Form: MSDS.A1-111/A1-116
Effective: 11022003.es
Supersedes: 18111997.WvdS.mvo
All Rights Reserved

Page 2 of 8

The information, recommendations and opinions set forth herein are offered solely for your consideration, inquiry and verification, and are not, in part or total, to be construed as constituting a warranty or representation for which we assume legal responsibility. Nothing contained herein is to be interpreted as authorization to practice a patented invention without a license.

The Netherlands – Insulcon B.V.

Tel: +31(0)167-565750

Fax: +31(0)167-566263



Belgium – Keramab N.V.

Tel: +32(0)3 711 02 78

Fax: +32(0)3 711 08 56



Germany – Insulcon GmbH

Tel: +49(0)2162/ 24960-0

Fax: +49(0)2162/24960-29



Material Safety Datasheet

use dust exhaust system). Using specially treated or packaged products will minimise dust release. Regular good housekeeping will minimise secondary dust dispersal. See next action 8 for personal protection.

Storage

Always use sealed and visibly labelled containers. Avoid damaging containers. Reduce dust emission during unpacking. Emptied containers which may contain debris should be cleaned before disposal or recycling. Recyclable cardboards and/or plastic films are recommended for packaging.

8. EXPOSURE CONTROL / PERSONAL PROTECTION

How to reduce dust exposure to a minimum

Review your RCF application(s) and assess situations with the potential for dust release. Where practical enclose dust sources and provide dust extraction. Designate RCF work areas and restrict access to informed and trained workers. Use operating procedures, which will limit dust production and exposure of workers. Keep the workplace clean. Use a vacuum cleaner fitted with an HEPA filter; avoid using brooms and compressed air. If necessary consult an industrial hygienist to design workplace controls properly. Using 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 treated or packaged to minimise or avoid dust release during handling. Consult your supplier for further details.

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 (in January 2000) are given below:

Country	Exposure limits*	Source
Germany	0.5 f/ml	TRGS 900
France	0.6 f/ml	Circulaire DRT N° 95-4 du 12/01/95
UK	2.0 f/ml	HSE - EH40 - Maximum Exposure Limit (proposal to reduce to 1.0 f/ml)

* 8-hr time-weighted average concentrations of airborne respirable fibres measured using the conventional membrane filter method.

Skin and eye protection

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

Form: MSDS.A1-111/A1-116
Effective: 11022003.es
Supersedes: 18111997.WvdS.mvo
All Rights Reserved

Page 3 of 8

The information, recommendations and opinions set forth herein are offered solely for your consideration, inquiry and verification, and are not, in part or total, to be construed as constituting a warranty or representation for which we assume legal responsibility. Nothing contained herein is to be interpreted as authorization to practice a patented invention without a license.

The Netherlands – Insulcon B.V.

Tel: +31(0)167-565750
Fax: +31(0)167-566263



Belgium – Keramab N.V.

Tel: +32(0)3 711 02 78
Fax: +32(0)3 711 08 56



Germany – Insulcon GmbH

Tel: +49(0)2162/ 24960-0
Fax: +49(0)2162/24960-29



Member of the
INSULCON group

Material Safety Datasheet

Respiratory protection

Use appropriate respiratory protective equipment (RPE) against excessive concentrations of fibrous dust or other possible contaminant which could have been introduced. For dust concentrations significantly below the exposure limit, RPE is not required but FFP2 masks may be used on a voluntary basis. For short term operations where excursions above the exposure limit value are less than a factor of ten, use FFP3 respirators. In case of higher concentrations, please contact your supplier for advice.

Information and training of workers

Workers shall be informed on:

- The applications involving RCF-containing products;
- The potential risks to health resulting from the exposure to fibrous dust;
- The requirements regarding smoking, eating and drinking at the workplace;
- The requirements for protective equipment and clothing.

Workers shall be trained on:

- The good working practices to limit dust release;
- The proper use of protective equipment.

Further recommendation

Please refer to the code of practice and industrial hygiene guide issued by the European Ceramic Fibres Industry Association (ECFIA).

9. PHYSICAL AND CHEMICAL PROPERTIES

Oxidising properties	: None
Odour	: None
Melting point	: > 1650°C
Flammability	: None
Explosive properties	: None
Length weighted geometric diameter	: 2.5 - 3 µm

10. STABILITY AND REACTIVITY

Conditions to avoid	N.A.
Materials to avoid	N.A.

Form: MSDS.A1-111/A1-116
Effective: 11022003.es
Supersedes: 18111997.Wvds.mvo
All Rights Reserved

Page 4 of 8

The information, recommendations and opinions set forth herein are offered solely for your consideration, inquiry and verification, and are not, in part or total, to be construed as constituting a warranty or representation for which we assume legal responsibility. Nothing contained herein is to be interpreted as authorization to practice a patented invention without a license.

The Netherlands – Insulcon B.V.

Tel: +31(0)167-565750

Fax: +31(0)167-566263



Belgium – Keramab N.V.

Tel: +32(0)3 711 02 78

Fax: +32(0)3 711 08 56



Germany – Insulcon GmbH

Tel: +49(0)2162/ 24960-0

Fax: +49(0)2162/24960-29



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 pulmonary effects

Pulmonary morbidity studies were carried out among production workers in Europe and the USA. The only noticeable finding was an incidence of 2.9 % pleural plaques among the American workers examined. The relationship between RCF exposure and pleural plaques was not found in the two European studies.

A mortality study has not been conducted among RCF workers. No case report of disease attributed to RCF was ever published in the medical literature.

Inhalation toxicology data in animals

In earlier studies, RCF together with other man-made fibres were regarded as inert. In the 70's and 80's tumours were produced in animals after intrapleural or intraperitoneal injections but the several inhalation experiments conducted were inconclusive.

In 1990 chronic inhalation studies known as the «RCC studies» were conducted with size-selected fibres. Fibrosis, lung tumours and mesotheliomas were produced in animals exposed to very high concentrations for 24 months. It was then discovered that the size selection process led to a serious contamination of the test samples by non-fibrous particles.

These particles may have modified the behaviour of fibres leading to a condition sometimes referred to as pulmonary overload. Experts are still analysing the significance of the RCC results. In further tests, uncontaminated RCF samples have proved to be largely less biologically active.

IARC review

In October 2001 a scientific working group of 19 experts from 11 countries convened by the International Agency for Research on Cancer (IARC) concluded on re-evaluation of the carcinogenic risk of airborne Man Made Vitreous Fibres. After detailed examination of all available data of the IARC working party confirmed that category 2b (possible carcinogen to humans) remains the appropriate IARC classification for RCF.

Form: MSDS.A1-111/A1-116
Effective: 11022003.es
Supersedes: 18111997.WvdS.mvo
All Rights Reserved

Page 5 of 8

The information, recommendations and opinions set forth herein are offered solely for your consideration, inquiry and verification, and are not, in part or total, to be construed as constituting a warranty or representation for which we assume legal responsibility. Nothing contained herein is to be interpreted as authorization to practice a patented invention without a license.

The Netherlands – Insulcon B.V.

Tel: +31(0)167-565750
Fax: +31(0)167-566263



Belgium – Keramab N.V.

Tel: +32(0)3 711 02 78
Fax: +32(0)3 711 08 56



Germany – Insulcon GmbH

Tel: +49(0)2162/ 24960-0
Fax: +49(0)2162/24960-29



Member of the
INSULCON group

Material Safety Datasheet

12. ECOLOGICAL INFORMATION

These products are inert materials, which remain stable over a considerable time.

13. DISPOSAL CONSIDERATIONS

In the UK, Some types RFC waste are considered as «special». Check with local authorities if the «special» waste classification applies to you and follow «special» rules for disposal. Unless wetted, such a waste is normally dusty and so should be properly sealed in clearly and visibly labelled containers for disposal. Special precautions should be taken to avoid damaging the containers during transportation, storage and field disposal. In case of contamination by products classified as hazardous waste, expert guidance should be sought. Always check for local regulations which may apply.

14. TRANSPORT INFORMATION

Not classified as dangerous goods under relevant international transport regulations. Ensure that dust is not wind blown during transportation.

15. REGULATORY INFORMATION

Regulatory status comes from European Directive 97/69/CE and its implementation by the Member States.

Hazard classification

According to Directive, these fibres belong to the group of «man-made vitreous (silicate) fibres with random orientation with alkaline oxide and alkali earth oxide ($\text{Na}_2\text{O} + \text{K}_2\text{O} + \text{CaO} + \text{MgO} + \text{BaO}$) content less or equal to 18 % by weight». Fibres in this group are classified as:

Carc. Cat. 2

T

R49

Xi

R38

Form: MSDS.A1-111/A1-116
Effective: 11022003.es
Supersedes: 18111997.WVdS.mvo
All Rights Reserved

Page 6 of 8

The information, recommendations and opinions set forth herein are offered solely for your consideration, inquiry and verification, and are not, in part or total, to be construed as constituting a warranty or representation for which we assume legal responsibility. Nothing contained herein is to be interpreted as authorization to practice a patented invention without a license.

Labelling

The attention-label depicted below will on ceramic fibre textile products:

The Netherlands – Insulcon B.V.

Tel: +31(0)167-565750

Fax: +31(0)167-566263



Belgium – Keramab N.V.

Tel: +32(0)3 711 02 78

Fax: +32(0)3 711 08 56



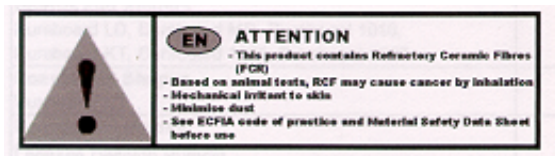
Germany – Insulcon GmbH

Tel: +49(0)2162/ 24960-0

Fax: +49(0)2162/24960-29



Material Safety Datasheet



16. OTHER INFORMATION

The European Ceramic Fibres Industry Association (ECFIA):
3, Rue du Colonel Moll, 75017 Paris; Tel. +33 (0)1 44 05 54 84 - Fax . +33 (0)1 44 05 54 94.
Web site: www.ecfia.org

Useful references

- Working with Refractory Ceramic Fibres; ECFIA Code of Practice (February 1998).
- Recognition and control of exposure to Refractory Ceramic Fibres (RCF): ECFIA Industrial hygiene guide (November 1999)
- Hazard from the use of Refractory Ceramic Fibres.
- Health and Safety Executive; information document HSE 267/(1998).
- Requirements of COSHH, control of substances hazardous to health.
- COSHH essentials; easy steps to control chemicals, HSE books, HSG 193.
- Requirements of CHIP; Chemical hazard information and packaging of substances and preparations dangerous for supply.
- Council Directive 90/394/EC <<on the protection of workers from risks related to exposure to carcinogens at work>> Official Journal of the European Communities, 26/07/90.
- Commission Directive 97/69/EC of 5 December 1997 <<adapting to technical progress for the 23rd 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, 13/12/97.
- Maxime LD et al (1998). CARE - A European programme for monitoring and reducing refractory ceramic fibres dust at the workplace Initial results. Gefahrstoffe – Reinhaltung der Luft, 58-3, 97-103.
- Refractory ceramic fibers: a substitute study. RCFC document, March 1996.

Form: MSDS.A1-111/A1-116
Effective: 11022003.es
Supersedes: 18111997.WvdS.mvo
All Rights Reserved

Page 7 of 8

The information, recommendations and opinions set forth herein are offered solely for your consideration, inquiry and verification, and are not, in part or total, to be construed as constituting a warranty or representation for which we assume legal responsibility. Nothing contained herein is to be interpreted as authorization to practice a patented invention without a license.

CARE programme

The Netherlands – Insulcon B.V.

Tel: +31(0)167-565750
Fax: +31(0)167-566263



Belgium – Keramab N.V.

Tel: +32(0)3 711 02 78
Fax: +32(0)3 711 08 56



Germany – Insulcon GmbH

Tel: +49(0)2162/ 24960-0
Fax: +49(0)2162/24960-29



Member of the
INSULCON group

Material Safety Datasheet

The European Ceramic Fibres Industry Association (ECFIA) has undertaken an extensive industrial hygiene programme to provide assistance to the users of RCF products.

The objectives are twofold:

- 1) to monitor workplace dust concentrations at both manufacturers' and customers' premises
- 2) to document manufacturing and use of RCF products from an industrial hygiene perspective in order to establish appropriate recommendations to reduce exposures. If you wish to participate in the CARE programme, contact ECFIA or your supplier.

If you wish to participate in the CARE programme, contact ECFIA or your supplier.

Spraying

ECFIA recommends that this fibre is not used for spraying.

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, 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 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.

Form: MSDS.A1-111/A1-116
Effective: 11022003.es
Supersedes: 18111997.Wvds.mvo
All Rights Reserved

Page 8 of 8

The information, recommendations and opinions set forth herein are offered solely for your consideration, inquiry and verification, and are not, in part or total, to be construed as constituting a warranty or representation for which we assume legal responsibility. Nothing contained herein is to be interpreted as authorization to practice a patented invention without a license.

The Netherlands – Insulcon B.V.

Tel: +31(0)167-565750

Fax: +31(0)167-566263



Belgium – Keramab N.V.

Tel: +32(0)3 711 02 78

Fax: +32(0)3 711 08 56



Germany – Insulcon GmbH

Tel: +49(0)2162/ 24960-0

Fax: +49(0)2162/24960-29

