Provetro®

Safety data sheet/ EG-Sicherheitsdatenblatt
Date of establishment: 15/01/02
Revision date:

Product/ Product group: **Fibre paper**

1.1 Substance/Preparation and Company Name
1.2 Information on the product

1.2 Information on manufacturer/Supplier

Supplier: **Tiffany Glaskunst GmbH**
Street: **Helleforthstr. 18-20**
UIP Code/town: **D-33758 Schloß Holte Stukenbrock**
Tel.: **+49 5207 91280**
Fax.: **+49 5207 912840**
e-mail: **tgk@tgk.de**
Internet: **http://www.tgk.de**

Telephone number in emergency cases: 05207-9128-0

2. Composition/Information on Ingredients

The articles are made of acrylic binded refractory ceramic fibres.

Component	%	CAS Number	Symbol	R Phrases
Refractory ceramic fibre	85-95	142 844-00-6	T	R 49, R 38
Acrylic binder	5-15	N.A.	N.A.	N.A.

Chemical composition of refractory ceramic fibres:
$Si0_2$: 48-60 %, Al_20_3: 25-52 %, $Zr0_2$<15%

3. Possible hazards

Eyes and skin:
Mild mechanical irritant

Inhalation:
May release fibrous dust

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 clasified 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 animal studies there is a concern that excessive dust

exposure may cause fibrosis and cancer of the lung or the pleura. This has not been confirned 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 :

These materials are not combustible once in use. However, virgin product binder may burn and produce gas and/or flames.
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 abnormally high dust exposure, provide the workers with appropriate protective equipment as detailed in section 8. Restrict access 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 and use a vacuum cleaner filled 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 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:

Techniques to reduce dust emissions during handling:
Handling is a source of dust emission. Process should be designed to limit the amount of handling. Wherever possible regular good housekeeping will minimise secondary dust dispersal (see section 6). Handling should be carried out under ventilation. Using special treated or packaged products will minimes dust emission.

Storage:
Always use sealed and visibly labelled containers. Avoid damaging containers. Reduce dust emission during packing out. Emptied containers which may contain debris should be cleaned. Recyclable cardboard and/or plastic films are recommended for packaging.

8. Expose controls and personal protection:

Techniques to reduce dust exposure to a minimum:
Review your RCF applications and assess situation with the potential for dust release.
Where practical enclose dust sources and provide dust extraction at source.
Delimit RCF work areas and restric 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 a HEPA filter; avoid using brooms and compressed air.

If necessary, consult an industrial hygienist to design proper workplace controls.
Using products specially tailored to your application(s) will help controlling dust.
Some products can be delivered ready for use without further cutting or machining.
Some could be treated or packaged to minimise or avoid dust emission during handling.

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 1998) are given below:

Country	**Exposure limit ***	**Source**
Germany	0,5 F/ml	TRGS 900
France	0,6 F/ml	Circulaire DRT No 95-4 du 12.1.95
UK	2,0 F/ml	HSE EII40 – Maximum Exposu Limit

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

Skin and eye Protection:
Wear gloves and overalls which alre loose fitting at the neck and wrist in case.
Wash work clothing separately.
Wear goggles or safetey glasses with side shields in case of over head working.

After handling rinse exposed skin with water.

Respiratory protection:
Use appropriate respiratory protective equiptment (RPE) agains excessive concentrations of fibrous dust or other possible contaminant which could have been introduced.

Airborne fibre concentration	**FFP2**	**FFP3**
Below the limit value	Recommended	
For short term operations where excursions above the limit value are less than a factor of 10		Required

In case of higher concentrations please contact your supplier for advice.

Information and 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
The requirements for protective equipment and clothing

Workers shall be trained on:
The good working practice to limit dust emissions
The proper use of protective equipment.

9. Physical and chemical properties:

Appearance:	White tan paper
Boiling point	n.a.
Flash point:	n.a.
Autoflammability:	n.a.
Oxiding properties:	n.a.
Specific gravity:	0,3
Partition coefficient:	n.a.
Odour:	None
Melting point:	> 1650° C
Flammability:	n.a.
Explosive Properties:	n.a.
Vapour pressure:	n.a.
Solubility:	Slight
Length weighted geometric mean diameter:	1,5 µm

10. Stability and reactivity

Conditions and materials to avoid:
None

Fumes:
During first heatings oxydation 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 all gases and fumes have disappeared. Avoid exposure in hight concentration of gas or fumes.

Decomposition products:
Continous use of these products at temperature above 900° C may lead to the formation of several crystalline phases.
If crystalline silica is present, follow corresponding hygiene standards and national regulations.

11. Toxicological information:

Irritant properties
When tested using approved methods (Directive 67/548/EC, Annex 5, Method 134) this material gives negative results. All man-made 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 healt 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 amoung the production workers in Europe and USA. In the American study pleurial 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 70's and 80's tumours were produced in animals after intrapleural or intraperitoneal injection but the several inhalation experiments conducted were inconclusive. In 1990 inhalation studies known as the "RCC experiments" were conducted with size selected fibres. Fibrosis, lung tumours and mesolheliomas were produced in animals exposed in very high concentrations. It was then discovered that the size selection process led to a serious contamination of the test samples by non-fiborus 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 fibres samples have proved to be largely less biologically active.

12. Ecological information:

These products are inert materials which remain stable over the time.

13. Disposal considerations:

Waste from these materials is not classified as hazardous waste under EU regulation 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 dusty 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 96/69/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_20, K_20, Ca0+Mg0+Ha0) content less or equal to 18 % by weight".

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

Carcinogen Category 2	T (Toxic)
R 19	May cause cancer by inhalation
Irritant	Xi
R 38	Irritating to skin

Protection of workers
Protection measures shall be in accordance with Council Directive 90/394/EEC "on the protection of workers from the risk related to exposure to carcinogen at work."
Protection measures shall be in accordance with Council Directive 89/391/EEC "on the introduction of measure 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.

15. Other information

Labelling
Substances are labelled in accordance with the above classification (see section 15).

In addition, manufacturers have decided that all other RCF containing products will also be labelled on the basis of their estimated potential to release dust.

Useful references
Hazards from the use of Refractory Ceramic Fibre.
Health and Safety Executive: Information document IISE 267 (1998)

ECFIA: Working Safely With Refractory Ceramic Fibre Products: Code of Practice (February 1998)

TRGS 521: Faserstäube

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. 13th December, 1997 and its national adaptations.

Maxim I.D. 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

CARE Programme („Controlled and reduced Exposure“)
The European Ceramic Fibres Industry Association (ECFIA) has undertaken an extensive hygiene programme for refractory ceramic fibres (RCF). The objectives are twofold: (i) to monitor workplace dust concentrations at both manufacturer and customers' premises. And (ii) to document manufacturing and use of RCF products from an industrial hygiene perspective in order ot establish appropriate recommendations to reduce exposures. The initial resutls of the programme have been published (see Maxim et al referenced above). If you wish to participate in the CARE programme, contact ECFIA or your supplier.

The information contained herein is based on the present state of our knowledge and does not therefore guarantee certain properties. Recipients of our product must take responsibility for observing existing laws and regulations.