

# THE TECHNICAL GLASS COMPANY

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## 1) IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY

**TRADE NAME(S)** **Microtherm**  
**Grades - G, Super G, Super G Hydrophobic.**  
**Forms - MPS, Panel, Block, Moulded, Quilted, Slatted.**

### MANUFACTURER(S):

**Micropore International Limited**  
Hadzor Hall, Droitwich, Worcestershire  
WR9 7DJ, England  
Phone: (01905) 793333 Fax: (01905) 795193

**Micropore Insulation Limited**  
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**Microtherm Europa NV.**  
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Belgium  
Phone: (03) 760 1980 Fax: (03) 777 68 20

**Nippon Microtherm Ltd.**  
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Shinjuku-Monolith 13F,  
3-1, Nishi-Shinjuku 2-chome, Shinjuku-ku,  
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**Microtherm Inc.**  
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**Ceramaspeed Limited**  
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## 2) COMPOSITION/INFORMATION ON INGREDIENTS

Amorphous silica	50 to 90%
Titanium dioxide	10 to 50%
Glass filaments, nominal diameter greater than 9 microns	0 to 12%
Aluminium oxide	0 to 25%

Microtherm G and Microtherm Super G insulation may be supplied encapsulated in borosilicate glass cloth.

## 3) HAZARDS IDENTIFICATION

The filament reinforcement components can cause irritation of the skin, eyes, and upper respiratory tract. Amorphous silica has a drying action on skin.

Dust produced from Microtherm G or Microtherm Super G insulation products may, like any other dust, aggravate pre-existing upper respiratory and lung diseases.

## 4) FIRST AID MEASURES

**INHALATION** **Signs / Symptoms** Irritation or soreness in throat and nose. In extreme exposures, some congestion may occur.

**First Aid** Remove affected person to fresh air. Seek medical attention if symptoms persist.

**SKIN CONTACT** **Signs / Symptoms** Temporary irritation or rash.

**First Aid** Rinse affected areas with water, taking care not to scratch or rub. Seek medical attention if irritation persists.

**EYE CONTACT** **Signs / Symptoms** Temporary irritation or inflammation.

**First Aid** Flush immediately with copious amounts of water. Do not rub eyes. Seek medical attention if irritation persists.

**INGESTION** **Signs / Symptoms** None known.

**First Aid** In the event of suspected problems, seek medical attention.

## 5) FIRE FIGHTING MEASURES

Microtherm insulations are classified as “non-combustible” by tests to BS 476 Part 4: 1970(1984) Fire Tests on Building Materials and Structures: Non-combustibility test for materials [=ISO /R1182]. Use extinguishing agents suitable for the type of surrounding combustible materials.

## 6) ACCIDENTAL RELEASE MEASURES

**PERSONAL PRECAUTIONS** - In the event of high dust levels use approved respiratory protective equipment (see Section 8).

**METHODS FOR CLEANING UP** - Powder and fragments should be cleaned up using a method that will avoid the creation of dust in the workplace atmosphere. Use of a vacuum cleaner fitted with an exhaust air filter fine enough to trap the dust is recommended. Airborne dust is, also, unlikely to be generated if used Microtherm G or Microtherm Super G insulation is thoroughly wetted prior to its removal.

## 7) HANDLING AND STORAGE

The handling or installation of Microtherm G or Microtherm Super G insulation, especially a form encapsulated in glass cloth, is unlikely to generate significant quantities of airborne dust.

Dust is likely to be generated, however, if Microtherm G or Microtherm Super G insulation products have to be machined, cut to size, broken up, or removed from equipment after prolonged exposure to high temperature. In such circumstances, adequate control of personal exposure can usually be achieved by the use of engineering measures, such as local exhaust ventilation (see Section 8).

Microtherm G and Microtherm Super G insulation products should be stored in dry conditions.

## 8) EXPOSURE CONTROLS / PERSONAL PROTECTION

**ENGINEERING MEASURES** - Engineering controls such as dust extraction at the point of work may be required to keep dust levels to a minimum.

### OCCUPATIONAL EXPOSURE LIMITS

UK “EH 40/97 Occupational Exposure Limits 1997” published by the Health and Safety Executive:-

TOTAL INHALABLE DUST	RESPIRABLE DUST
(8-hour time weighted average reference period)	
Silica 6 mg/m <sup>3</sup> [OES <sup>A</sup> ]	Silica 2.4 mg/m <sup>3</sup> [OES]
Titanium dioxide 10 mg/m <sup>3</sup> [OES]	Titanium dioxide 4 mg/m <sup>3</sup> [OES]
Glass filament 5 mg/m <sup>3</sup> [MEL <sup>B</sup> ]	Glass filament 2 fibres/ml [MEL]
Aluminium oxide 10 mg/m <sup>3</sup> [OES]	Aluminium oxide 4 mg/m <sup>3</sup> [OES]

A) OES Occupational Exposure Standard

B) MEL Maximum Exposure Limit

German “List of MAK and BAT Values 1996” for maximum concentrations at the workplace:-

Amorphous silica	4 mg/m <sup>3</sup> (total dust)
Titanium dioxide	6 mg/m <sup>3</sup> (fine dust)
Aluminium oxide	6 mg/m <sup>3</sup> (fine dust)

**PERSONAL PROTECTIVE EQUIPMENT** - Where sufficient control of exposure to airborne dust cannot be achieved by engineering measures alone, or irritation problems may arise, the following protective equipment may be necessary:

**Respiratory Protection:** Approved, properly fitting, respirators with the appropriate nominal protection factor.

**Hand Protection:** Gloves. Moisturising cream may prevent the drying of the skin in contact with silica dust.

**Eye Protection:** Goggles or safety glasses with side eye shields.

**Skin Protection:** Overalls that are loose fitting at the neck and the wrist.

## (9) PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Beige solid often encapsulated in glass cloth	Odour:	None
pH Value:	ca. 4 - 5 (suspension; 40 g/l water)	Boiling Point:	Not applicable
Melting Point:	>1700°C (silica)	Flash Point:	Not applicable.
Flammability:	Not applicable.	Autoflammability:	Not applicable.
Explosive Properties:	Not applicable.	Oxidising Properties:	Not applicable.
Vapour Pressure:	Not applicable.	Relative Density:	0.2 - 0.4
Solubility:	ca. 0.1 g/l (water, 25°C)	Partition Coefficient:	Not applicable.

## (10) STABILITY AND REACTIVITY

Prolonged use of Microtherm G at temperatures in excess of 900°C, or Microtherm Super G above 1000°C, may lead to the formation of cristobalite (a type of crystalline silica). The presence of compounds of alkali metals may lower the temperature at which cristobalite is formed.

Repeated exposure to cristobalite may cause silicosis, and the International Agency for Research on Cancer has classified crystalline silica as "probably carcinogenic to humans" (2A).

**UK "EH 40/97 Occupational Exposure Limits 1997":** Cristobalite, MEL = 0.3 mg/m<sup>3</sup>, 8-hour time weighted average, respirable dust.

**German "List of MAK and BAT Values 1996":** Cristobalite = 0.15 mg/m<sup>3</sup> (fine dust).

Note: Experimental work (undertaken within the Zortech Group) in which Microtherm Super G block was subjected to temperatures up to 1100°C in a furnace, for periods up to 28 days, provided no evidence of the presence of cristobalite. Similar tests conducted using Microtherm G insulation block, however, showed that cristobalite is generated at 1000°C after only 1 day.

The small amounts of organic components applied to the filaments, and some coatings and adhesives used with Microtherm G and Microtherm Super G insulation, will decompose, and may emit toxic products when heated. If sufficiently concentrated, these products can be dangerous to breathe.

## (11) TOXICOLOGICAL INFORMATION

**Amorphous silica:** Drying action on the skin.

**Glass filament:** Can cause irritation of the skin, eyes, and upper respiratory tract. Diameter 9 - 11 microns. Does not generate fibres which fall within the WHO (World Health Organisation) definition of respirable fibres.

## (12) ECOLOGICAL INFORMATION

Microtherm G and Microtherm Super G insulations are inert materials which remain stable over a considerable time.

## **(13) DISPOSAL CONSIDERATIONS**

Waste Microtherm G or Microtherm Super G insulations (even after use above 1000°C) are not classified as hazardous waste, and may generally be disposed of at a normal landfill site that has been licensed for the disposal of industrial waste. If there is a substantial dust content in the waste then some waste disposal operators may consider it to be difficult to handle and it may require special treatment.

Where Microtherm G or Microtherm Super G waste has been contaminated by products that may be classified as hazardous, expert guidance should be sought.

## **(14) TRANSPORT INFORMATION**

No special precautions are required.

## **(15) REGULATORY INFORMATION**

Relevant legislation and guidance includes:

### **United Kingdom**

The Health and Safety at Work etc. Act 1974

The Chemicals (Hazard Information and Packaging) Regulations

The Control of Substances Hazardous to Health Regulations

HSE EH40 Occupational Exposure Limits

HSE EH46 Man-made mineral fibres

HSE EH64 Summary Criteria for Occupational Exposure Limits

MDHS 14 General methods for the gravimetric determination of respirable and total inhalable dust

MDHS 59 Man-made mineral fibre. Airborne number concentration by phase-contrast light microscopy.

### **Germany**

Deutsche Forschungsgemeinschaft: MAK und BAT Werte Liste - Maximale Arbeitsplatzkonzentrationen und biologische Arbeitsstofftoleranzwerte (List of MAK and BAT Values - Maximum Concentrations and Biological Tolerance Values at the Workplace).

*This Safety Data Sheet must not be construed to be a risk assessment for operations involving this range of products. As with any other material, the user is advised to carry out a risk assessment when working with any Microtherm G and Microtherm Super G insulation product, particularly when dust is being generated.*

## **(16) OTHER INFORMATION**

Further information and advice on Microtherm G and Microtherm Super G insulation products can be obtained (in the first instance) from the Manufacturer's Technical Service Department.

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NOTICE: The information presented herein gives a hazard profile of the products named and is based on data considered to be accurate as of the date of preparation of this Safety Data Sheet. It should be read and used in conjunction with the company's relevant literature. No responsibility can be assumed by vendor for any damage or injury resulting from abnormal use or from any failure to adhere to recommended practices. The information given here does not constitute a product specification and should not be used as such. No authorisation is given or implied to practice any patented invention without license. MICROTHERM is a registered Trade Mark of Micropore International Ltd. All goods are supplied subject to our Standard Conditions of Sale, copies of which are available upon request.

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