Heraeus

OFM
Opaque Fused Materials

The standard for new applications

Heraeus Quarzglas

Acids

○ H_2SO_4	
○ HNO_3	
○ HCl	
● HF	however, more sluggish than with normal gas
● H_3PO_4	however, more sluggish than with normal gas
○ Organic acids	

Gases and vapors

○ HCl	
○ H_2; N_2; O_2	
○ NO_2; SO_2	
○ CO	

Oxides

◔ Al_2O_3	only above 1.200 °C
◔ BaO	only above 900 °C
◔ CaO	only above 1.000 °C
◔ CuO	only above 950 °C
◔ Fe-oxides	only above 950 °C
◔ Mgo	only above 950 °C
◑ PbO	
◔ ZnO	only above 800 °C
◔ Basic oxides	only above 800 °C
	increase in devitrification

Salts

◑ $BaCl_2$	
◔ $BaSO_4$	only above 700 °C
◑ Borates	
◔ BCl_3	only above 900 °C
◑ KCl	devitrification
◑ KF	
◑ NaCl	
● Na-metaphosphate	
● Na-polyphosphate	
○ Na_2SO_4	
● Na-tungstate	devitrification
◑ Nitrates	
◔ Pt-ammonium chloride	only above 900 °C
◑ $ZnCl_2$	
◔ Zn-phosphate	slightly at 200 °C
	considerably at 1.000 °C
◔ Zn-Silicate	only above 1.000 °C

OFM 70 flange
OD x ID: 300 x 250 (mm)

OFM 70 flange
OD x ID x L: 500 x 460 x 500 (mm)

OFM 70 bell jar
D x W x H: 1000 x 20 x 2200 (mm)

OFM 370 crucible
D x W x H: 400 x 10 x 600 (mm)

OFM 370 crucible
D x W x H: 500 x 15 x 800 (mm)

OFM 970 plate
Length x width x thickness: 400 x 200 x 20 (mm)

OFM 970 plate
D x W: 200 x 20 (mm)

OFM 970 flange
OD x ID: 180 x 140 (mm)

OFM 970 flange
OD x ID x L: 340 x 300 x 100 (mm)

OFM 970 tube
OD x W x L: 240 x 6 x 300 (mm)

OFM 970 tube
OD x W x L: 270 x 6 x 500 (mm)

OFM 970 tube
OD x W x L: 180 x 20 x 6100 (mm) acids

An innovative material for high-quality applications

OFM

Opaque Fused Materials

OFM is an opaque quartz glass produced using an arc melting process.

The production process produces primarily rotationally symmetrical products such as tubes and crucibles.

Plates, dishes, blocks and thin-walled tubes can be also manufactured using additional hot re-forming processes.

Light scattering on fine bubbles causes parts made of OFM to be opaque-white or translucent, depending on raw material used.

OFM – grades and applications

OFM 70 – Rotosil®

is used primarily in processes requiring high temperatures and / or in processes which require a high resistance to corrosion. Moreover, its specific electrical and thermal characteristics can be of use in a wide range of applications.

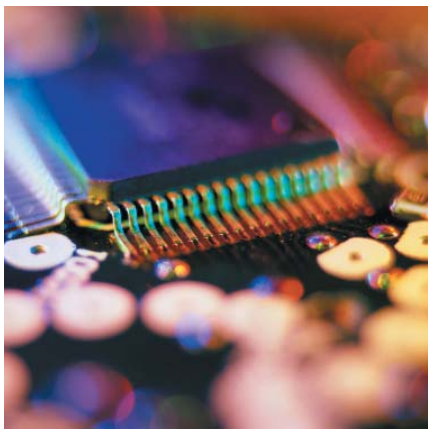
OFM 370

Applications:

- Precious metals recycling
- Lighting industry
- High-temperature processes
- Electrostatic filter production
- Chemical process engineering (containers, tubes, dishes, etc.)
- Calcination and annealing processes.

OFM has a number of characteristics that are not found in combination in any other material:

- extremely low thermal expansion
- high resistance to thermal shock
- high deformation point
- low thermal conductivity
- high resistance to corrosive media
- high resistance to corrosive melts (e.g., Au, Ag)
- low spectral transmission

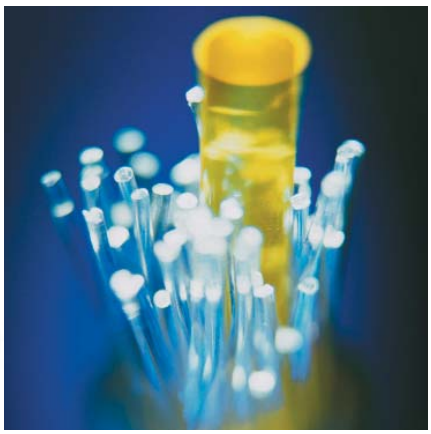


is primarily used in processes in which high temperature and high thermal shock resistance are needed. The high purity of the raw material combined with additional in-house purification enable this material to meet all the stringent requirements of the semi-conductor industry.

Applications:

- Photo voltaic industry
- Semiconductor industry
- Fibre optics industry
- Special glass applications

OFM 970



was specially developed for high-temperature processes requiring high thermal insulation and high purity. It is the preferred material for use at extremely high temperatures in low impurity environments.

Applications:

- Manufacture of optical glasses for microlithography
- Semiconductor industry
- Fibre optics industry

- In the non-machined state, all OFM grades are distinguished by a glazed, non-porous and smooth inside surface. The outside surface is not glazed. It is polished during machining.
- An advanced welding technology makes it possible to combine different grades, including combinations with transparent quartz glass.

Technical Specifications: Additional technical information is available from the product data sheets on our website at http://www.heraeus-quarzglas.com/ofm

OFM 70 – chemical properties

Key to the symbols in the table:

○ Neither the element nor the component reacts with OFM 70

◔ A reaction takes place only above the specified temperature

◑ Only the melt of the components reacts with OFM 70

● Either the element or the component reacts with OFM 70.

Elements	
○ Ag	
◔ Al	immediate reaction 700 - 800 °C
○ Au	
○ Br	
◔ C	only above 1.500 °C
◔ Ca	only above 600 °C
○ Cd	
◔ Ce	only above 800 °C
○ Cl	also no reaction with heat and moisture
● F	only in moist condition
○ Hg	
○ J	
● Li	only above 250 °C
◔ Mg	immediate reaction 700 - 800 °C
○ Mn	
○ Mo	
○ Na	reacts only in vaporized state
● P	
○ Pb	
○ Pt	
◔ S	very sluggish reaction above 700 - 800 °C
◑ Si	
○ Sn	
○ Ti	
○ W	
○ Zn	

Heraeus Quarzglas GmbH & Co. KG
Division Industrial Technologies
Postfach 15 54
63450 Hanau, Germany

Phone + 49 (0) 61 81 / 35-62 91
Fax + 49 (0) 61 81 / 35-63 11
e-Mail: sales.git-plr
@heraeus-quarzglas.com