

Heraeus



**Opaque Fused Materials
OFM 370**

Heraeus Quarzglas

Opaque Fused Materials - OFM 370

Description

OFM 370 is a translucent quartz glass, which like all other OFM grades is produced by an arc melting process.

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

OFM 370 is translucent and this is caused by the scattering of light on fine bubbles in the material.

In the non-machined state, crucibles and tubes have a glazed, smooth and non-porous inner surface. Normally, this surface is not machined since it is especially wear resistant. The outer surface is slightly rough and not glazed as a result of the production process. This surface can be ground.

The high purity of the starting material combined with additional in-house purification helps OFM 370 meet all the stringent requirements of the semiconductor industry.

Crucibles are used for pulling silicon monocrystals and in photovoltaic silicon melting processes.

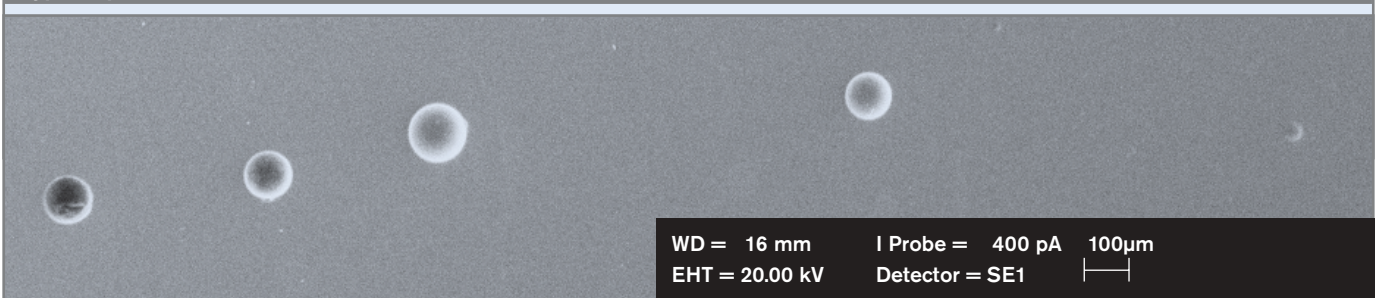
Applications

OFM 370 is used primarily in processes requiring high temperatures and / or high purity levels.

Using Heraeus welding technology, it is possible to meet highly specific customer demands. For this reason, OFM 370 has a large number of possible technical applications.

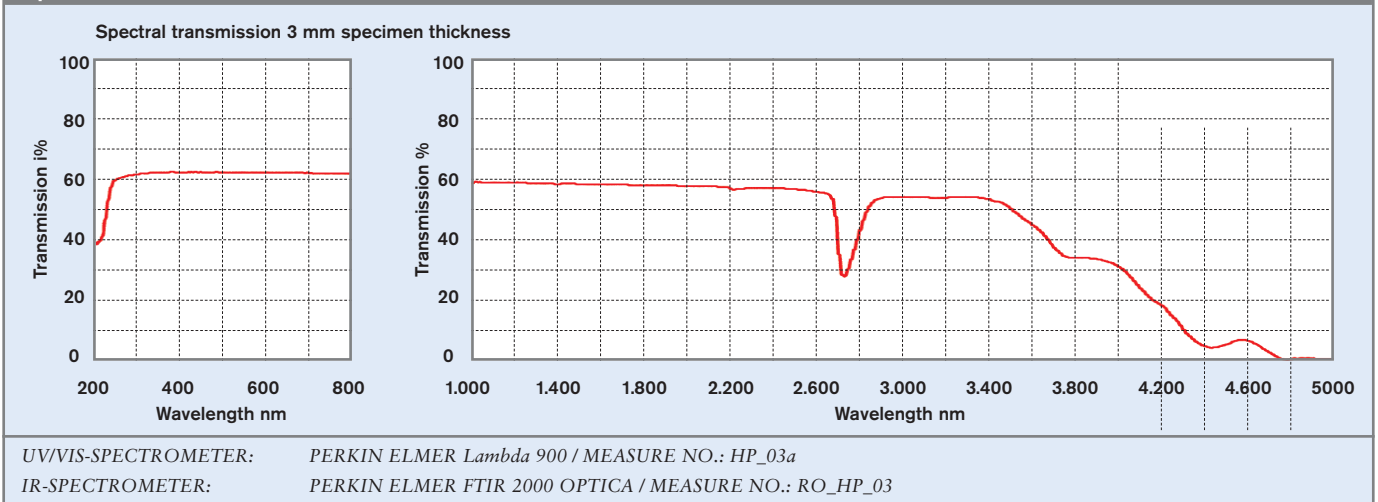
Technical Specifications

Typical pore distribution



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Spectral transmission



Characteristics

High temperature stability and a high resistance to corrosion make OFM 370 an indispensable material for demanding processes.

- high purity
- extremely low thermal expansion
- high resistance to thermal shock
- high deformation point
- high resistance to corrosive media
- high resistance to corrosive melts (e.g., Si)



OFM 370
crucible

Characteristics	
External appearance	translucent
Inner surface	fire-glazed
Outer surface	ground
Physical properties	
Density	~ 2.15 g / cm ³
Modulus of elasticity	~ 6 x 10 ⁴ N / mm ²
Mechanical properties	
Mechanical machining	good
Welding	good
Electrical properties	
Specific resistivity [Ωcm]	~ 3.2 x 10 ¹⁵
Dielectric strength [KV / mm]	~ 15 ... 20
Thermal properties	
Mean linear coefficient of thermal expansion 0 ... 300°C [1 / K]	~ 0,6 x 10 ⁻⁶
Deformation point [°C]	~ 1.730
Max. service temperature [°C]	~ 1.000 / 1.500 (depending on operating conditions)
Optical Transmission (see previous page)	
SiO ₂ Content	> 99,99 %

Typical dimensions	
Crucible	
Diameter	200 – ~ 750 mm
Height	200 – ~ 800 mm
Wall thickness	6 – 20 mm
Tubes	
Diameter	100 – ~ 300 mm
Length	100 – ~ 2.000 mm
Wall thickness	8 – 20 mm
<i>Products are usually made to customer specifications. Other sizes are available on request.</i>	

Chemical purity - typical values – [ppbw]					
Li	Na	K	Mg	Ca	Fe
580	850	750	< 50	450	200
Cu	Cr	Mn	Ti	Al	Zr
< 50	< 50	< 50	1130	15500	100
<i>Testing method: ICP - MS</i>					

Viscosity (typical values)	
Temperature [°C]	Log [poise]
1.150	13,2
1.200	12,8
1.250	12,2