

# Superior SURFACE FINISH

## Chemical Purity

ppm	Li	Na	K	Mg	Ca	Fe	Cu	Ti	Al
OM <sup>®</sup> 100	0.1	0.1	0.2	<0.03	0.4	0.1	<0.01	1.1	15
Synthetic OM <sup>®</sup>	<0.005	0.01	0.02	<0.01	0.1	0.02	<0.005	<0.01	<0.1

## Surface Finish

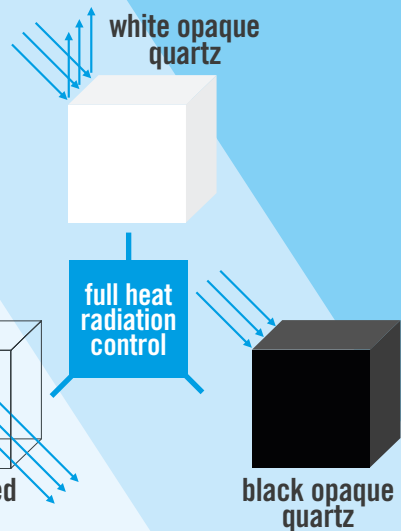
OM<sup>®</sup> 100



Competitor material



## Complete Thermal Management



Heraeus

RETAIN THE HEAT  
OF YOUR WORLD

HCA-SemtUG\_14.0/E/07.2019

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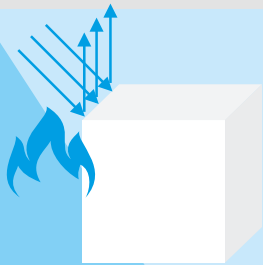


### CONTACT

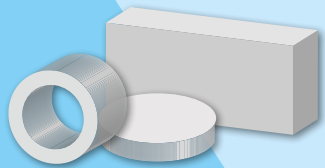
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**Heraeus Opaque Quartz OM<sup>®</sup>**  
the unique thermal management solution

# Unique MATERIAL PROPERTIES



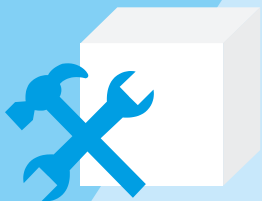
**Heat blocking properties**



**Near net shape manufacturing**



**Superior surface finish**



**Clear fused quartz compatibility**



**Ultra high purity**

The uniquely high hemispheric reflection of OM<sup>®</sup>100 enables this to be the ideal heat blocking material. In such applications as adiabatic plates OM<sup>®</sup>100 will improve your total cost of ownership. By reducing heat loss you can benefit from improved process control, reduced energy needs and improved lifetime of your heating components. The heat blocking properties of OM<sup>®</sup>100 out-perform any comparable material available on the market today.

The patented manufacturing method of OM<sup>®</sup>100 allows it to be manufactured close to the dimensions of the finished component. This reduces excess material and lowers machining steps. This improved efficiency in manufacturing contributes to a lower cost for the finished part.

White opaque quartz is often used as flanges or chamber seals to thermally protect the O-ring material. To ensure an optimal seal at the O-ring, the smoothest surface possible is critical. The unique physical properties of OM<sup>®</sup>100 allow for a greatly improved surface finish after manufacturing and multiple refurbishment cycles, giving you the best seal possible every time and an extended lifetime of use for when compared to parts made from other opaque quartz materials.

One of the key features of our OM<sup>®</sup>100 material is its comparable processing properties to clear fused quartz (e.g. HSQ<sup>®</sup>300) for both hot and cold processes. OM<sup>®</sup>100 is 100% compatible to the hot working and cold machining of clear fused quartz and as required can be welded, fire polished or thermally reformed. In addition if using OM<sup>®</sup>100 for demanding applications it can be CNC ground and optically polished to the highest precision.

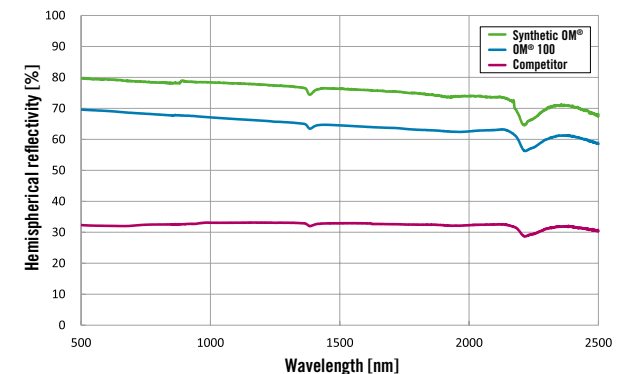
OM<sup>®</sup>100 offers you a total level of impurities of <50ppm and is both suitable and qualified for even the most challenging semiconductor processes of today. A synthetic version of Heraeus OM<sup>®</sup> is now developed to support the next generation of semiconductor processes where impurities are one of the biggest challenges. Utilizing a synthetic opaque material from Heraeus will offer you a total level of impurities of <1ppm to support your advanced processes, with all the other advantages of OM<sup>®</sup>100.

# Superior HEAT BLOCKING

## Near Net Shape Manufacturing



## Reflectivity



## OM<sup>®</sup> – Physical Properties

Density g/cm <sup>3</sup>	2.15 – 2.18
Porosity	< 2,3%
Pore size	< 20 μm
CTE (0...900°C)	0.47 × 10 <sup>-6</sup>
Max. working temp. – continuous	1100°C
Max. working temp. – short term	1300°C
Specific heat [J/(gK)], RT	0.70
Heat conductivity [W/(mK)], RT	1.24
Dielectric constant (ε), RT, 13.56 MHz	3.7
Dielectric loss angle (tan δ), RT, 13.56 MHz	1 x 10 <sup>-4</sup>