SOLCERA
Advanced Materials

Transparent Ceramic

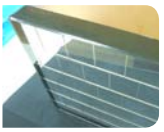
Transparency at the heart of our business

Transparent Ceramic

SOLCERA offers a wide range of transparent ceramics for seekers with infrared and electromagnetic guidance. Furthermore they open up new opportunities for protection windows of helicopters and land vehicles. These materials also meet market requirements related to Industrial Optics, Space and High-Energy Laser applications.





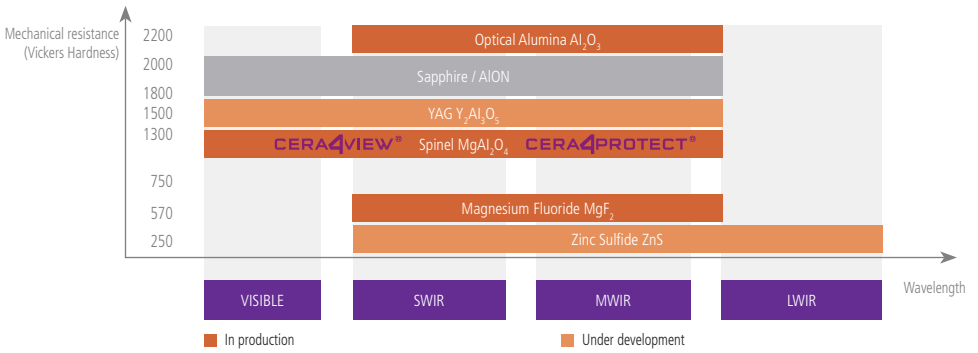
Why choosing SOLCERA

- Expert for military programs over 50 years
- Made in France, member of LA FRENCH FAB
- Independent SME with international scope
- ITAR-free
- Development of its own ceramic grades and vertically integrated manufacturing process
- Expertise in ceramic-to-metal and glass-to-metal seals

Table of characteristics

		Optical Grade				RF Grade	
Properties	**Units**	Magnesium Fluoride	Alumina	Spinel	Zinc Sulfide	Fused Silica	Silicon Nitride
Composition (mass %)		>99,8 % MgF_2	min.99,99% Al_2O_3	100% $MgAl_2O_4$	100% ZnS	99% SiO_2	100% Si_3N_4
Density	g/cm³	3,18	3,98	3,58	4,09	1,9-2,1	2,1
Hardness - Vickers	GPa	6	22	14	2,8	5	2,9
Flexural Strength	MPa	130	700	350	97	>40	95
Elastic Modulus	GPa	115	384	270	94	40	90
Coefficient of Thermal Expansion	1/K x10-⁶	10	8,3	7,8	6,8	0,6	7,3
Thermal Conductivity	W/mK	16	39	15,3	16	0,9	12
Maximum use temperature	°C	600 [1]	1200 [1]	1500 [1]	200 [1]	1200	1200
Refractive Index / Dielectric Constant		$n = 1,35$	$n = 1,67$	$n = 1,64$	$n = 2,25$	$\varepsilon = 3,6$	$\varepsilon = 4,8$
Rain Erosion Damage Threshold	m/s	300 [2]	600 [2]	500 [2]	200 [2]	Poor [3]	Very good [3]
Wavelength		SWIR to MWIR	SWIR to MWIR	visible to MWIR	SWIR to LWIR	RF MHz to GHz	RF MHz to GHz

[1] without optical properties degradation
[2] DTV mono impact 0,8 mm (cavendish lab)
[3] 2 mm - 25 mm/h @ 300m/s SAAB Lab
This chart is intended to illustrate typical properties of a selection of SOLCERA.



Membre de

Z.I. n°1 - rue de l'Industrie - 27000 ÉVREUX - FRANCE
Tél. : +33 2 32 29 42 00 - info@solcera.com

10 / 2021 Design Heliôservice +33 1 64 70 50 20