

Schott Nextrema® 712-6 Glass Ceramic

Category : Ceramic , Glass , Glass Ceramic

Material Notes:

The NEXTREMA® family of glass-ceramics combines the glossy appearance of glass with exceptional thermal, chemical, optical and mechanical properties such as: Very low coefficient of linear thermal expansion Excellent temperature and thermal shock resistance High transmission in infrared range and unique visible light transmission profiles with different specific grades Excellent chemical resistance High mechanical strength technical data presented herein are typical averages. Manufacturer Data Sheet

Order this product through the following link:

http://www.lookpolymers.com/polymer_Schott-Nextrema-712-6-Glass-Ceramic.php

Physical Properties	Metric	English	Comments
Density	2.51 g/cc	0.0907 lb/in ³	
Porosity	0.000 %	0.000 %	ISO 9385

Mechanical Properties	Metric	English	Comments
Knoop Microhardness	590	590	HK _{0.1 / 20}; ISO 9385
Modulus of Elasticity	86.0 GPa	12500 ksi	ASTM C-1259
Flexural Strength	150 MPa	21800 psi	Bending s_{bB}; DIN EN 1288, Part 5, R45
Poissons Ratio	0.260	0.260	ASTM C-1259

Thermal Properties	Metric	English	Comments
CTE, linear	0.840 Åµm/m-Å°C	0.467 Åµin/in-Å°F	
	@Temperature 20.0 - 300 Å°C	@Temperature 68.0 - 572 Å°F	
	1.60 Åµm/m-Å°C	0.889 Åµin/in-Å°F	
	@Temperature 300 - 700 Å°C	@Temperature 572 - 1290 Å°F	
Specific Heat Capacity	0.800 J/g-Å°C	0.191 BTU/lb-Å°F	
	@Temperature 20.0 - 100 Å°C	@Temperature 68.0 - 212 Å°F	
Thermal Conductivity	1.50 W/m-K	10.4 BTU-in/hr-ftÅ²-Å°F	DIN 51936, ASTM E 1461-01
	@Temperature 90.0 Å°C	@Temperature 194 Å°F	
Maximum Service Temperature, Air	400 Å°C	752 Å°F	Inhomogeneous Heating
	@Time 1.80e+7 sec	@Time 5000 hour	

Thermal Properties	Metric	English	Comments
	@Time 3600 sec	@Time 1.00 hour	Inhomogeneous Heating
	780 Å°C	1440 Å°F	Homogeneous Heating
	@Time 1.80e+7 sec	@Time 5000 hour	
	950 Å°C	1740 Å°F	Homogeneous Heating
	@Time 3600 sec	@Time 1.00 hour	

Optical Properties	Metric	English	Comments
Transmission, Visible	0.000 %	0.000 %	
	@Thickness 4.00 mm, Wavelength 600 nm	@Thickness 0.157 in, Wavelength 600 nm	
	8.00 %	8.00 %	
	@Thickness 4.00 mm, Wavelength 700 nm	@Thickness 0.157 in, Wavelength 700 nm	
IR Transmittance	64.0 %	64.0 %	
	@Thickness 4.00 mm, Wavelength 1000 nm	@Thickness 0.157 in, Wavelength 1000 nm	
	74.0 %	74.0 %	
	@Thickness 4.00 mm, Wavelength 1600 nm	@Thickness 0.157 in, Wavelength 1600 nm	
	80.0 %	80.0 %	
	@Thickness 4.00 mm, Wavelength 2500 nm	@Thickness 0.157 in, Wavelength 2500 nm	
UV Transmittance	0.000 %	0.000 %	
	@Thickness 4.00 mm	@Thickness 0.157 in	

Electrical Properties	Metric	English	Comments
Volume Resistivity	500000 ohm-cm	500000 ohm-cm	DIN 52326
	@Temperature 350 Å°C	@Temperature 662 Å°F	
	1.60e+7 ohm-cm	1.60e+7 ohm-cm	DIN 52326
	@Temperature 250 Å°C	@Temperature 482 Å°F	
Dielectric Constant	7.00	7.00	
	@Frequency 1.00e+6 Hz, Temperature 25.0 Å°C	@Frequency 1.00e+6 Hz, Temperature 77.0 Å°F	
	0.00300	0.00300	

Electrical Properties	Metric	English	Comments
	@1 Frequency 1.00e+6 Hz, Temperature 25.0 Â°C	@1 Frequency 1.00e+6 Hz, Temperature 77.0 Â°F	

Chemical Properties	Metric	English	Comments
Acid Class, SR	2.00	2.00	DIN 12116
Alkali Class, AR	2.00	2.00	ISO 695

Descriptive Properties	Value	Comments
Acoustical Characteristic, vlong.	6500 m/s	
Appearance	Translucent	
Color	Dark Grey	
Hydrolytic Resistance HGB	1	DIN ISO 719
tk100(Â°C)	207	specific electric volume resistivity of $10^{>8}</sup> \text{O}\hat{\text{A}}\cdot\text{cm}$
Thermal Shock Resistance (TSR)	600Â°C	Resists cold water without cracking

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