

## Schott Nextrema® 712-3 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-712-3-Glass-Ceramic.php](http://www.lookpolymers.com/polymer_Schott-Nextrema-712-3-Glass-Ceramic.php)

Physical Properties	Metric	English	Comments
Density	2.55 g/cc	0.0921 lb/in <sup>3</sup>	
Porosity	0.000 %	0.000 %	ISO 9385

Mechanical Properties	Metric	English	Comments
Knoop Microhardness	600	600	HK <sub>0.1 / 20</sub>; ISO 9385
Modulus of Elasticity	92.0 GPa	13300 ksi	ASTM C-1259
Flexural Strength	168 MPa	24400 psi	Bending s<sub>b</sub>; DIN EN 1288, Part 5, R45
Poissons Ratio	0.250	0.250	ASTM C-1259

Thermal Properties	Metric	English	Comments
CTE, linear	-0.160 $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$	-0.0889 $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$	
	@Temperature 20.0 - 300 $\text{Å}^\circ\text{C}$	@Temperature 68.0 - 572 $\text{Å}^\circ\text{F}$	
	0.380 $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$	0.211 $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$	
	@Temperature 300 - 700 $\text{Å}^\circ\text{C}$	@Temperature 572 - 1290 $\text{Å}^\circ\text{F}$	
Specific Heat Capacity	0.830 J/g- $\text{Å}^\circ\text{C}$	0.198 BTU/lb- $\text{Å}^\circ\text{F}$	
	@Temperature 20.0 - 100 $\text{Å}^\circ\text{C}$	@Temperature 68.0 - 212 $\text{Å}^\circ\text{F}$	
Thermal Conductivity	1.70 W/m-K	11.8 BTU-in/hr-ft $\text{Å}^2$ - $\text{Å}^\circ\text{F}$	DIN 51936, ASTM E 1461-01
	@Temperature 90.0 $\text{Å}^\circ\text{C}$	@Temperature 194 $\text{Å}^\circ\text{F}$	
Maximum Service Temperature, Air	560 $\text{Å}^\circ\text{C}$	1040 $\text{Å}^\circ\text{F}$	Inhomogeneous Heating
	@Time 1.80e+7 sec	@Time 5000 hour	

Thermal Properties	Metric	English	Comments
	@Time 1.80e+7 sec	@Time 5000 hour	Homogeneous Heating
	750 Å°C	1380 Å°F	Inhomogeneous Heating
	@Time 3600 sec	@Time 1.00 hour	
	885 Å°C	1630 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 500 nm	@Thickness 0.157 in, Wavelength 500 nm	
	3.00 %	3.00 %	
	@Thickness 4.00 mm, Wavelength 600 nm	@Thickness 0.157 in, Wavelength 600 nm	
	18.0 %	18.0 %	
	@Thickness 4.00 mm, Wavelength 700 nm	@Thickness 0.157 in, Wavelength 700 nm	
IR Transmittance	71.0 %	71.0 %	
	@Thickness 4.00 mm, Wavelength 1000 nm	@Thickness 0.157 in, Wavelength 1000 nm	
	75.0 %	75.0 %	
	@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	300000 ohm-cm	300000 ohm-cm	DIN 52326
	@Temperature 350 Å°C	@Temperature 662 Å°F	
	1.00e+7 ohm-cm	1.00e+7 ohm-cm	DIN 52326
	@Temperature 250 Å°C	@Temperature 482 Å°F	
	7.80	7.80	

Dielectric Constant Electrical Properties	@Frequency 1.00e+6 Metric Hz, Temperature 25.0 Å°C	@Frequency 1.00e+6 English Hz, Temperature 77.0 Å°F	Comments
	0.0200	0.0200	
Dielectric Loss Index	@Frequency 1.00e+6 Hz, Temperature 25.0 Å°C	@Frequency 1.00e+6 Hz, Temperature 77.0 Å°F	

Chemical Properties	Metric	English	Comments
Acid Class, SR	2.00	2.00	DIN 12116
Alkali Class, AR	1.00	1.00	ISO 695

Descriptive Properties	Value	Comments
Appearance	Transparent	
Color	Dark Brown	
Hydrolytic Resistance HGB	1	DIN ISO 719
tk100(Å°C)	196	specific electric volume resistivity of $10^{8}$ OÅ-cm
Thermal Shock Resistance (TSR)	800Å°C	Resists cold water without cracking

## Contact Songhan Plastic Technology Co.,Ltd.

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