

Schott Nextrema® 724-3 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-724-3-Glass-Ceramic.php

Physical Properties	Metric	English	Comments
Density	2.54 g/cc	0.0918 lb/in ³	
Porosity	0.000 %	0.000 %	ISO 9385

Mechanical Properties	Metric	English	Comments
Knoop Microhardness	570	570	HK _{0.1 / 20}; ISO 9385
Modulus of Elasticity	93.0 GPa	13500 ksi	ASTM C-1259
Flexural Strength	135 MPa	19600 psi	Bending s_b; DIN EN 1288, Part 5, R45
Poissons Ratio	0.250	0.250	ASTM C-1259

Thermal Properties	Metric	English	Comments
CTE, linear	-0.560 $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$	-0.311 $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$	
	@Temperature -50.0 - 100 $\text{Å}^\circ\text{C}$	@Temperature -58.0 - 212 $\text{Å}^\circ\text{F}$	
	-0.540 $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$	-0.300 $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$	
	@Temperature 0.000 - 50.0 $\text{Å}^\circ\text{C}$	@Temperature 32.0 - 122 $\text{Å}^\circ\text{F}$	
	-0.280 $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$	-0.156 $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$	
	@Temperature 20.0 - 300 $\text{Å}^\circ\text{C}$	@Temperature 68.0 - 572 $\text{Å}^\circ\text{F}$	
	0.130 $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$	0.0722 $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$	
	@Temperature 300 - 700 $\text{Å}^\circ\text{C}$	@Temperature 572 - 1290 $\text{Å}^\circ\text{F}$	
Specific Heat Capacity	0.800 J/g- $\text{Å}^\circ\text{C}$	0.191 BTU/lb- $\text{Å}^\circ\text{F}$	
	@Temperature 20.0 -	@Temperature 68.0 -	

Thermal Properties	100 °C Metric	212 °F English	Comments
Thermal Conductivity	1.60 W/m-K @Temperature 90.0 °C	11.1 BTU-in/hr-ft ² -°F @Temperature 194 °F	DIN 51936, ASTM E 1461-01
Maximum Service Temperature, Air	560 °C @Time 1.80e+7 sec	1040 °F @Time 5000 hour	Inhomogeneous Heating
	710 °C @Time 1.80e+7 sec	1310 °F @Time 5000 hour	Homogeneous Heating
	750 °C @Time 3600 sec	1380 °F @Time 1.00 hour	Inhomogeneous Heating
	925 °C @Time 3600 sec	1700 °F @Time 1.00 hour	Homogeneous Heating

Optical Properties	Metric	English	Comments
Refractive Index	1.5415 @Wavelength 656.3 nm	1.5415 @Wavelength 656.3 nm	
	1.542 @Wavelength 643.8 nm	1.542 @Wavelength 643.8 nm	
	1.5445 @Wavelength 587.6 nm	1.5445 @Wavelength 587.6 nm	
	1.5468 @Wavelength 546.1 nm	1.5468 @Wavelength 546.1 nm	
	1.5513 @Wavelength 486.1 nm	1.5513 @Wavelength 486.1 nm	
	1.5518 @Wavelength 180 nm	1.5518 @Wavelength 180 nm	
	1.5566 @Wavelength 435.8 nm	1.5566 @Wavelength 435.8 nm	
	Transmission, Visible	68.0 % @Thickness 4.00 mm, Wavelength 400 nm	68.0 % @Thickness 0.157 in, Wavelength 400 nm
87.0 % @Thickness 4.00 mm,		87.0 % @Thickness 0.157 in,	

Optical Properties	Wavelength 600 nm Metric	Wavelength 600 nm English	Comments
	90.0 %	90.0 %	
	@Thickness 4.00 mm, Wavelength 700 nm	@Thickness 0.157 in, Wavelength 700 nm	
IR Transmittance	85.0 %	85.0 %	
	@Thickness 4.00 mm, Wavelength 2500 nm	@Thickness 0.157 in, Wavelength 2500 nm	
	88.0 %	88.0 %	
	@Thickness 4.00 mm, Wavelength 1600 nm	@Thickness 0.157 in, Wavelength 1600 nm	
	89.0 %	89.0 %	
	@Thickness 4.00 mm, Wavelength 1000 nm	@Thickness 0.157 in, Wavelength 1000 nm	
UV Transmittance	0.000 %	0.000 %	
	@Wavelength <=350 nm, Thickness 4.00 mm	@Wavelength <=350 nm, Thickness 0.157 in	

Electrical Properties	Metric	English	Comments
Volume Resistivity	200000 ohm-cm	200000 ohm-cm	DIN 52326
	@Temperature 350 Â°C	@Temperature 662 Â°F	
	4.00e+6 ohm-cm	4.00e+6 ohm-cm	DIN 52326
	@Temperature 250 Â°C	@Temperature 482 Â°F	
Dielectric Constant	7.80	7.80	
	@Frequency 1.00e+6 Hz, Temperature 25.0 Â°C	@Frequency 1.00e+6 Hz, Temperature 77.0 Â°F	
Dielectric Loss Index	0.0190	0.0190	
	@Frequency 1.00e+6 Hz, Temperature 25.0 Â°C	@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	1.00	1.00	ISO 695

Descriptive Properties	Value	Comments
Abb© Value	55.64	546.1 nm

Descriptive Properties	Value	Comments
Acoustical Characteristic, vlong.	6600 m/s	
Appearance	Transparent	
Color	Slight Amber Hue	
Hydrolytic Resistance HGB	1	DIN ISO 719
tk100(°C)	175	specific electric volume resistivity of 10^{10} Ω·cm
Thermal Shock Resistance (TSR)	820°C	Resists cold water without cracking

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