CORNING

EAGLE XG® Slim Glass

Product Information Sheet

Glass Type:
Alkaline earth boro-aluminosilicate

Forms Available:
Fusion-drawn sheet

Principle Uses:
Substrates for active-matrix flat panel displays

Properties

Where applicable, units are stated in Metric and English

Mechanical

	Metric	English
Density (20°C, 68°F)	2.38 g/cc	148.5 lb/ft^3
Young's Modulus	73.6 GPa	10.7 x 10^6 psi
Shear Modulus	30.1 GPa	4.4 x 10^6 psi
Poisson's Ratio	0.23	
Vicker's Hardness (200 gm load, 25 sec dwell)	640	

Thermal Expansion

0 - 300°C	31.7 x 10^{-7} / °C (0 - 300°C)	17.7 x 10^{-7} / °F (32 - 572°F)
Room Temperature	35.5 x 10^{-7} / °C	19.7 x 10^{-7} / °F
To Setting Point	(25 - 675°C)	(77 - 1247°F)

Thermal Conductivity

Thermal conductivity is a calculated value, and is equal to the product of the thermal diffusivity multiplied by specific heat multiplied by the density of the glass.

Temp (°C)	Specific Heat (J/gm-°K)	Thermal Diffusivity (cm^2/sec)	Thermal Conductivity (W/cm-°K)
23	0.768	0.00601	0.0109
100	0.896	0.00572	0.0122
200	0.998	0.00546	0.0129
300	1.067	0.00530	0.0134
400	1.110	0.00522	0.0137
500	1.154	0.00518	0.0142

Viscosity

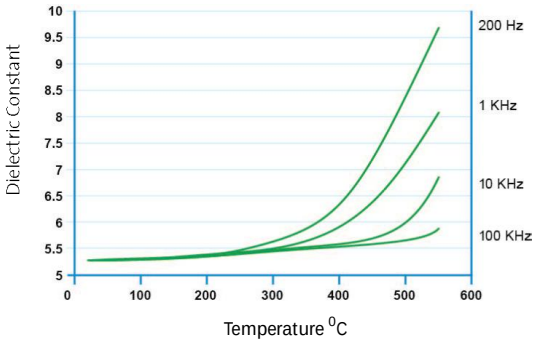
Working Point (10^4 poises)	1293
Softening Point (10$^{7.6}$ poises)	971
Annealing Point (10^{13} poises)	722
Strain Point (10$^{14.5}$ poises)	669

Electrical

Log$_{10}$ Volume Resistivity (ohm-cm)

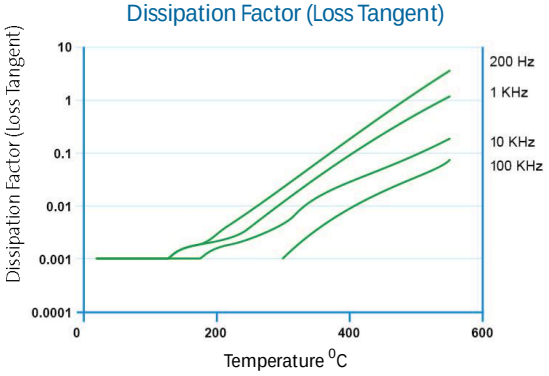
12.9	(250°C, 482°F)
8.8	(500°C, 932°F)

Dielectric Constant



Dielectric Constant: 5.27
(20°C/68°F - 1 kHz)

Dissipation Factor (Loss Tangent)



Loss Tangent: 0.30%
(20°C/68°F - 1 kHz)

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Chemical

Weathering: 1
Weathering is defined as corrosion by atmospheric-borne gases and vapor such as water and carbon dioxide. Glasses rated 1 will almost never show weathering effects; those rated 2 will occasionally be troublesome, particularly if weathering products cannot be removed; those rated 3 require more careful consideration.

Durability:
Durability is measured via weight loss per surface area after immersion. Values are highly dependent upon actual testing conditions. Unless otherwise noted, concentrations refer to weight percent.

Reagent	Time	Temperature	Weight Loss (mg/cm^2)
HCl – 5%	24 hrs	95°C	0.79
HNO_3 – 1M	24 hrs	95°C	0.49
HF – 10%	20 min	20°C	5.18
NH_4 F: HF – 10%	20 min	20°C	0.84
1HF: 10HNO_3	3 min	20°C	1.48
1HF: 100HNO_3	3 min	20°C	0.16
DI H2O	24 hrs	95°C	0.00
Na_2 CO_3 – 0.02N	6 hrs	95°C	0.16
NaOH – 5%	6 hrs	95°C	1.83

Total alkali content is approximately: 0.1 wt%
(Typical < 0.05 wt%)

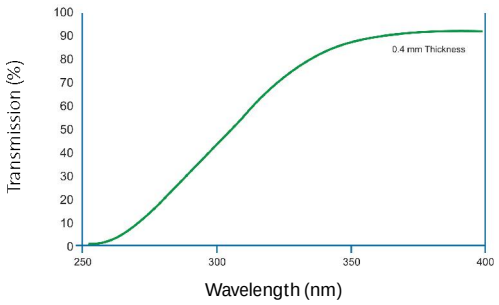
Optical Wavelength	Refractive Index
435.8 nm	1.5198
467.8 nm	1.5169
480 nm	1.5160
508.6 nm	1.5141
546.1 nm	1.5119
589.3 nm	1.5099
643.8 nm	1.5078

Birefringence Constant

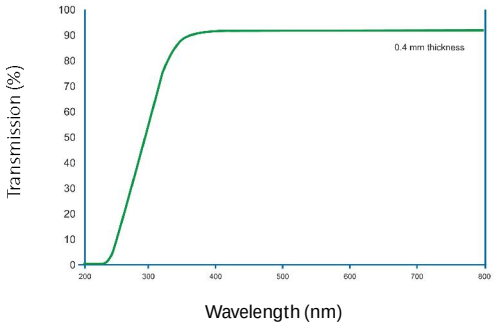
331 (nm/cm) / (kg/mm^2)

Transmittance

UV Transmission



Optical Transmission



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