

Exceptional Dimensional Stability and Surface Quality in Thin, Large-Size Sheets

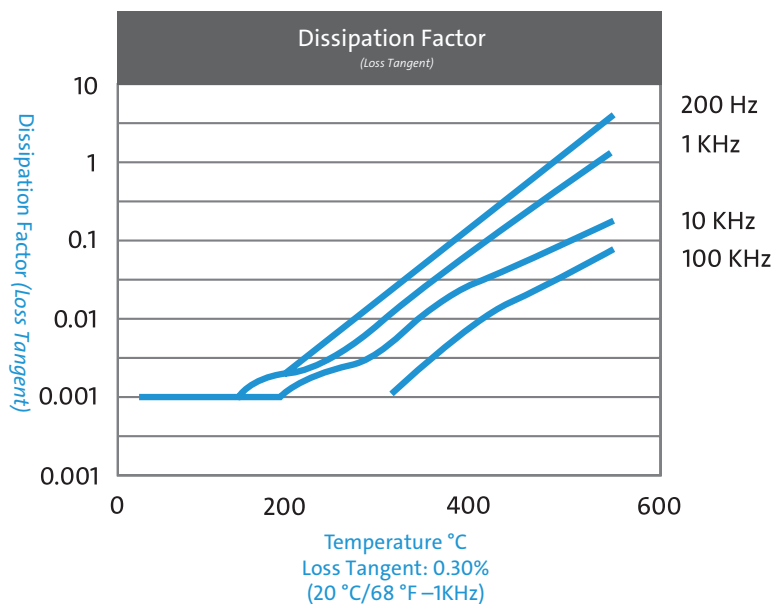
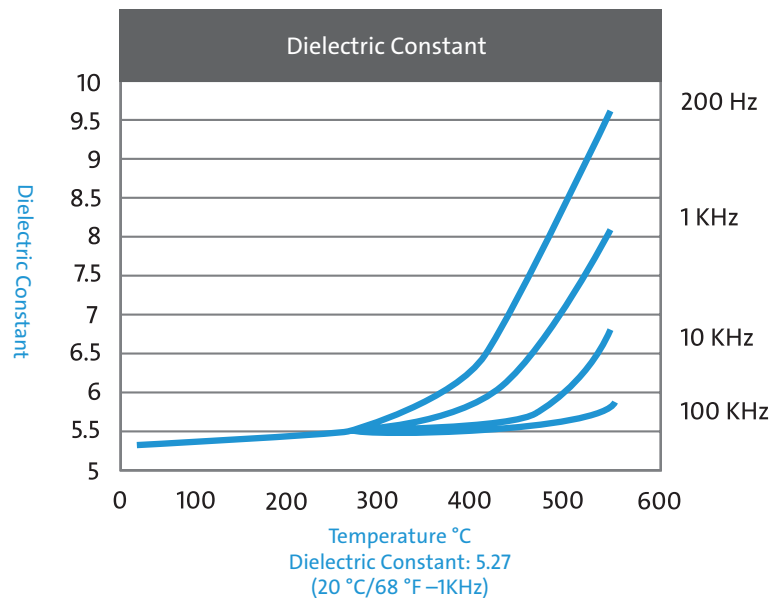
Corning® EAGLE XG® Glass is considered the most widely used and trusted glass by the world's leading panel makers, and was the first glass composition to include no heavy metals. Available in the widest variety of form factors, EAGLE XG® Glass can be made as thin as 0.25 mm up to Gen 5.5, 0.3 mm up to Gen 6, 0.4 mm up to Gen 8.5, and 0.5 mm up to Gen 10.5 to enable thinner, lighter, and curved display panels.

Product & Material Information

Corning® EAGLE XG® Glass is produced to the following type specifications:

Material Information		
Glass Type	Alkaline Earth Boro-Aluminosilicate	
Forms Available	Fusion Drawn Sheet	
Principle Uses	Substrates for active-matrix flat panel displays	
Mechanical Properties	Density (20°C)	2.38 g/cc ³
	Young's Modulus	73.6 GPa
	Shear Modulus	30.1 GPa
	Poisson's Ratio	0.23
Thermal Expansion	Coefficient of Thermal Expansion (0 - 300°C)	31.7x10 ⁻⁷ / °C
	Room Temperature to Setting Point	35.5x10 ⁻⁷ / °C (25-675°C)
Viscosity	Working Point (10 ⁴ poises)	1293°C
	Softening Point (10 ^{7.6} poises)	971°C
	Annealing Point (10 ¹³ poises)	722°C
	Strain Point (10 ^{14.5} poises)	669°C
Electrical Properties	Log ¹⁰ Volume Resistivity	12.9 ohm-cm at 250°C
		8.8 ohm-cm at 500°C
Optical Properties	Birefringence Constant	331 (nm/cm) / (kg/mm ²)

Electrical



Chemical Durability

Chemical 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

Reagents	Time	Temp	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 H ₂ O	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

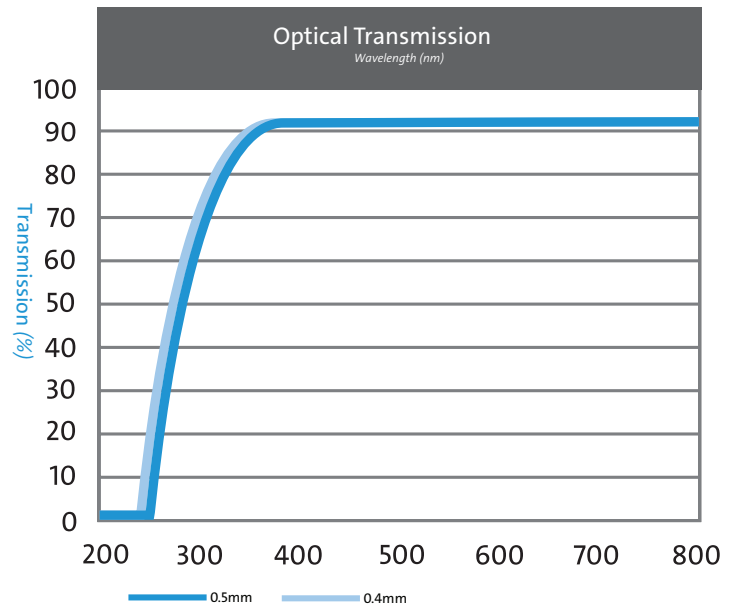
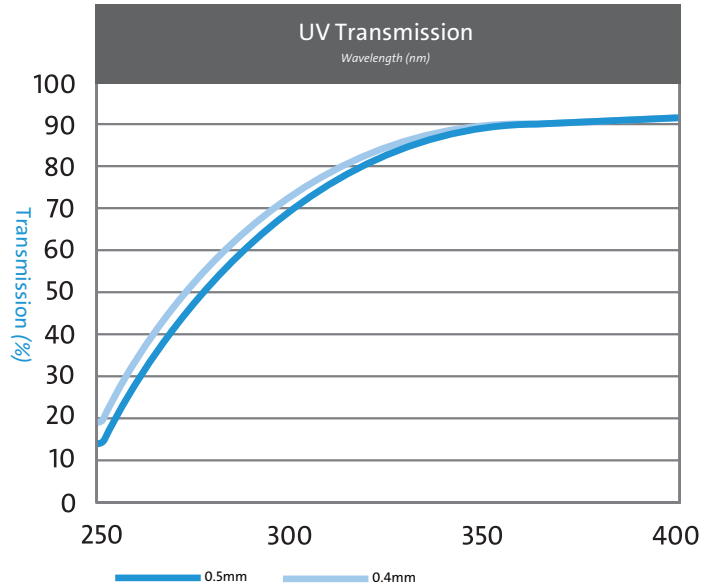
Total alkali content is approximately: 0.1wt%
(Typical <0.05wt%)

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.

Optical Wavelength	Refractive Index
435.8nm	1.5198
467.8nm	1.5169
480nm	1.5160
508.6nm	1.5141
546.1nm	1.5119
589.3nm	1.0599
643.8nm	1.5078

Transmittance



Thermal Conductivity

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

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