PYREX®

A Corning Brand

Corning® PYREX® Micro-Electro Glass

Corning® PYREX® Micro-Electro glass builds upon decades of Corning innovation and the trusted legacy of PYREX® in the semiconductor industry. Manufactured with Corning's advanced fusion-draw process, this borosilicate glass delivers an optical-grade, pristine surface, exceptionally low total thickness variation, and a coefficient of thermal expansion closely matched to silicon—making it ideal for numerous bonding methods to Si-based devices. Available in a wide range of thicknesses and formats, Corning® PYREX® Micro-Electro glass meets the evolving requirements of devices demanding optical-grade glass for semiconductor processing.

Pristine surface quality and dimensional stability for numerous bonding applications.

More Flexibility
Leveraging Corning's proprietary fusion process, the glass is formed in air and drawn to form an incredibly flat piece of glass, with precise thickness control, enabling seamless integration with complex systems.

Custom Solutions for Specialized Applications
Corning® PYREX® Micro-Electro expands Corning's semicon grade material portfolio, which spans a wide range of compositions with different CTEs, thicknesses, and formats to choose from.

Applications

- MEMs
- Optical sensors
- Wafer-level capping/packaging

Dimensions

Wafer	
Available Thicknesses	0.2 - 1.4 mm
Standard Thicknesses	0.5, 0.7, 0.85, 1.1, 1.4
TTV	≤10um Standard, ≤1um Available
Warp	≤ 100 µm

Panel	
Available Thicknesses	0.4 - 1.4 mm
Standard Thicknesses	0.5, 0.7, 0.85, 1.1, 1.4
Length x Width	Up to 600 x 600 mm
TTV	≤ 10um Standard
Warp	≤ 500 µm

** Corning has the capability to provide enhanced dimensional tolerances upon request. Please contact your representative for additional information.*

Viscosity

Annealing Point (10^{13} poises)	546 °C
Strain Point ($10^{14.5}$ poises)	498 °C
Glass Softening Point	814 °C

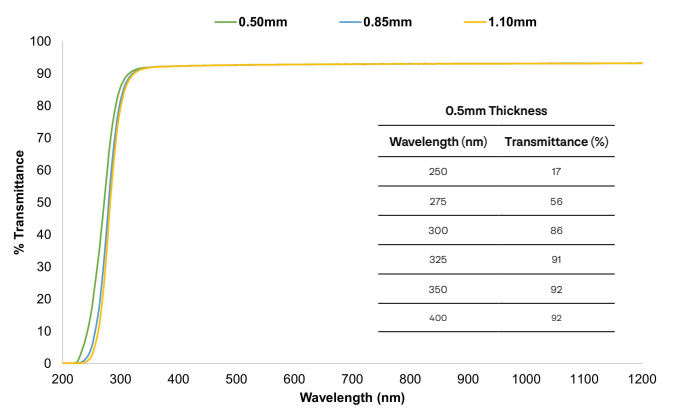
Properties

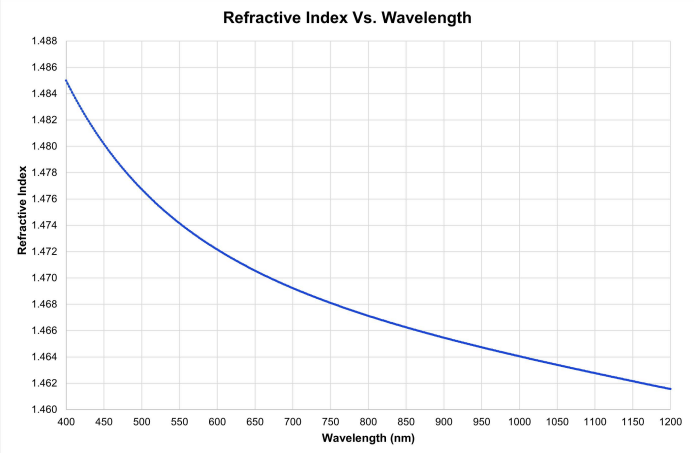
Density	2.234 g/cm^3
Young's Modulus	61.5 GPa
Poisson's Ratio	0.19
Shear Modulus	25.8 GPa
Vickers Hardness (200 g load)	520 kgf/mm^2

Optical

Refractive Index	1.472 at 589.3 nm

Transmittance Vs. Wavelength





Chemical Durability

Durability is measured via weight loss per surface area after immersion in the solvents shown below. Values are highly dependent upon actual testing conditions.

Reagent	Time	Temperature °C	Weight Loss mg/cm²
HCl - 5%	24 hrs	95	0.00
NH_4F:HF - 10%	20 min	20	0.21
HF - 10%	20 min	20	0.89
NaOH - 5%	6 hrs	95	3.06

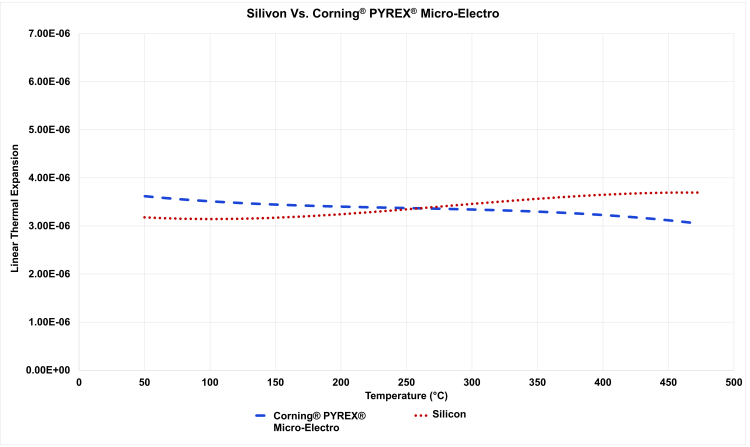
Electrical

Log_{10} (Volume Resistivity) @ 250 °C	8.01 Ω · cm

Frequency (GHz)	Dielectric Constant	Loss Tangent
0.5	4.68	0.0041
1	4.66	0.0045
2.5	4.61	0.0064
5	4.58	0.0073
7.5	4.57	0.0078
10	4.55	0.0084

Thermal

Mean Linear Thermal Expansion (0 to 300) °C	3.43 x 10^{-6}/°C



Temperature °C	Cp-specific heat J/kg · K	Diffusivity cm²/sec	Conductivity W/m · K
50	727	0.0064	1.10
100	783	0.0062	1.10
200	953	0.0060	1.28
300	1068	0.0058	1.41
400	1102	0.0058	1.42
500	1208	0.0059	1.56