

PYREX®

A Corning Brand

**Pristine surface quality
for advantaged anodic
bonding.**

More Versatility

Leveraging Corning's proprietary manufacturing 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's Semicon grade material portfolio spans a wide range of compositions with different CTEs, thicknesses, and formats to choose from.

Corning® PYREX® Micro-Electro Glass

Corning® PYREX® Micro-Electro™ glass builds upon decades of Corning innovation and the trusted legacy of PYREX® in the MEMS industry. Manufactured with Corning's proprietary manufacturing 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 anodic bonding. 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.

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	≤10µm Standard, ≤1µm 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	≤ 10µm Standard
Warp	≤ 500 µm

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Viscosity

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

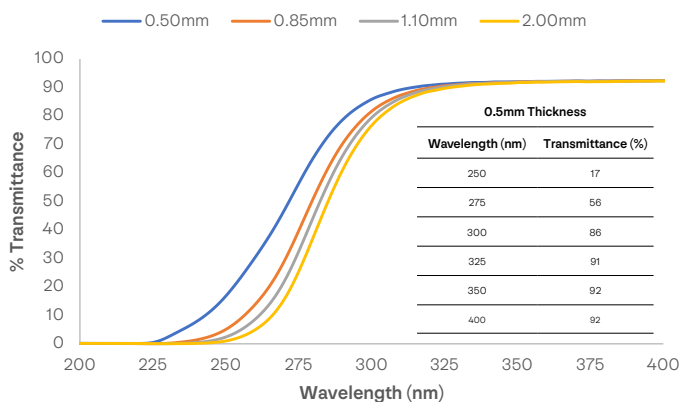
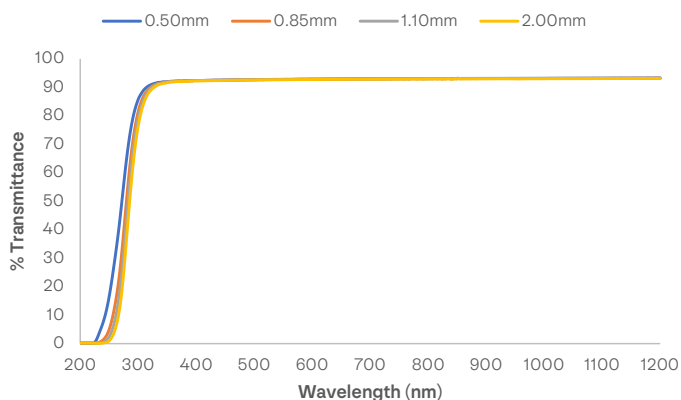
Properties

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
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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/cm ²
HCl - 5%	24 hrs	95	0.00
NH ₄ F: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
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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	3.39 x 10 ⁻⁶ /°C
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Temperature °C	Cp-specific heat J/kg · K	Diffusivity cm ² /sec	Conductivity W/m · K
47	724	0.0064	1.10
99	781	0.0062	1.10
204	960	0.0060	1.29
304	1073	0.0058	1.42
406	1104	0.0058	1.42
505	1214	0.0059	1.56