



Appearance

Sealing glass white colored in powder form

Chemical Composition (by weight)

Phosphorus oxide (P ₂ O ₅)	44.37 - 50.37 %
Antimony oxide (Sb ₂ O ₃)	9.83 - 13.83 %
Barium oxide (BaO)	9.06 - 13.06 %
Zinc oxide (ZnO)	8.64 - 12.64 %
Calcium oxide (CaO)	6.08 - 8.08 %
Sodium oxide (Na ₂ O)	3.47 - 6.47 %
Potassium oxide (K ₂ O)	3.25 - 5.25 %
Lithium oxide (Li ₂ O)	0.89 - 2.89 %
Alumina (Al ₂ O ₃)	0.34 - 2.34 %
Boron oxide (B ₂ O ₃)	0.5 - 1.5 %

Physical Properties

Specific Gravity	3.2 (g/cm ³)
Glass Transition Temperature	370 ± 10 °C
Softening Temperature (T _d)	408 ± 10 °C
Crystallization Temperature	620 ± 10 °C
Coefficient of Thermal Expansion	14.5 ± 1 x 10 ⁻⁶ /°C (40 - 320 °C)
Interfacial Bond Strength (Shear)	9.83 MPa
Interfacial Bond Strength (Tensile)	8.98 MPa
Dielectric Constant (1kHz, RT)	8.86
Loss Tangent (1kHz, RT)	0.0016

Recommended Firing Conditions

Ramp to between 500°C and 550°C and hold for 1 to 2 hours.
Heating or cooling rate: 3 to 10 °C/min

Applications

Operational Temperature: up to 550 °C

The typical application of GL1734 sealing glass is to seal ceramics and metals at high temperatures. Common applications of sealing glass include solid oxide fuel cells (SOFCs), solar cells, sodium ion batteries, high-temperature sensors, and other sealing, bonding, or coating applications.

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