

**Appearance**

Sealing glass white colored in powder form

**Chemical Composition (by weight)**

Phosphorus oxide (P <sub>2</sub> O <sub>5</sub> )	44.37 - 50.37 %
Antimony oxide (Sb <sub>2</sub> O <sub>3</sub> )	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 <sub>2</sub> O)	3.47 - 6.47 %
Potassium oxide (K <sub>2</sub> O)	3.25 - 5.25 %
Lithium oxide (Li <sub>2</sub> O)	0.89 - 2.89 %
Alumina (Al <sub>2</sub> O <sub>3</sub> )	0.34 - 2.34 %
Boron oxide (B <sub>2</sub> O <sub>3</sub> )	0.5 - 1.5 %

**Physical Properties**

Specific Gravity	3.2 (g/cm <sup>3</sup> )
Glass Transition Temperature	370 ± 10 °C
Softening Temperature (T <sub>d</sub> )	408 ± 10 °C
Crystallization Temperature	620 ± 10 °C
Coefficient of Thermal Expansion	14.5 x 10 <sup>-6</sup> /°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.