

Appearance

Compliant (viscous) sealing glass is white colored in powder form.

Chemical Composition (by weight)

Boron oxide (B ₂ O ₃)	32.37 - 39.57 %
Barium oxide (BaO)	31.69 - 38.73 %
Silica (SiO ₂)	13.5 - 17.5 %
Strontium oxide (SrO)	4.76 - 7.14 %
Alumina (Al ₂ O ₃)	4.68 - 7.02 %
Calcium oxide (CaO)	2.58 - 3.86 %

Physical Properties

Specific Gravity	3.2 (g/cm ³)
Glass Transition Temperature	624 ± 10 °C
Softening Temperature (Td)	660 ± 10 °C
Coefficient of Thermal Expansion	$7.7 \pm 1 \times 10^{-6} / ^{\circ}C (50 - 500 \ ^{\circ}C)$
Interfacial Bond Strength (Shear)	23.2 MPa
Interfacial Bond Strength (Tensile)	14.1 MPa
Dielectric Constant (1kHz, RT)	7.51
Loss Tangent (1kHz, RT)	0.0077

Recommended Firing Conditions

Ramp to 850 °C and hold for 2 to 4 hours. Heating or cooling rate: 3 to 10 °C/min

Applications

Operational Temperature: up to 850 °C

The typical application of GL1681 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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