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Appearance

Glass-ceramic sealing glass light gray colored in powder form

Chemical Composition

Bismuth oxide (Bi₂O₃)

Silica (SiO₂)

Boron oxide (B₂O₃)

Sodium oxide (Na₂O)

Alumina (Al₂O₃)

Titanium dioxide (TiO₂)

Potassium oxide (K₂O)

Lithium oxide (Li₂O)

Cobalt (II) oxide (CoO)

Nickel (II) oxide (NiO)

Physical Properties

Specific Gravity	3.9 (g/cm ³)
Glass Transition Temperature	446 ± 10 °C
Softening Temperature (T _d)	509 ± 10 °C
Crystallization Temperature	620 ± 10 °C
Coefficient of Thermal Expansion (crystallized)	9.6 ± 1 x 10 ⁻⁶ /°C (50 - 400 °C)
Dielectric Constant (1kHz, RT)	10.41
Loss Tangent (1kHz, RT)	0.0146

Recommended Firing Conditions

Ramp to between 700°C and 850°C and hold for 2 to 4 hours.

Heating or cooling rate: 3 to 10 °C/min

Applications

Operational Temperature: up to 600 °C

The typical application of GL1739 sealing glass is to seal ceramics and metals at high temperatures. GL1739 glass is resistant to alkali. 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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