

Appearance

Glass-ceramic sealing glass white colored in powder form

Chemical Composition (by weight)

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|--|-----------------|
| Strontium oxide (SrO) | 34.47 - 38.47 % |
| Silica (SiO ₂) | 30.53 - 34.53 % |
| Calcium oxide (CaO) | 17.74 - 21.74 % |
| Zinc oxide (ZnO) | 3.41 - 5.41 % |
| Alumina (Al ₂ O ₃) | 1.76 - 3.76 % |
| Titanium dioxide (TiO ₂) | 1.21 - 3.21 % |
| Boron oxide (B ₂ O ₃) | 0.88 - 2.88 % |

Physical Properties

| | |
|---|---|
| Specific Gravity | 3.5 (g/cm ³) |
| Glass Transition Temperature | 690 ± 10 °C |
| Softening Temperature (T _d) | 750 ± 10 °C |
| Crystallization Temperature (DSC) | 890 ± 10 °C |
| Coefficient of Thermal Expansion (annealed glass) | 10.9 x 10 ⁻⁶ /°C (50 - 500 °C) |
| Coefficient of Thermal Expansion (crystallized) | 11.0 x 10 ⁻⁶ /°C (50 - 500 °C) |
| Dielectric Constant (1kHz, RT) (crystallized) | 9.59 |
| Loss Tangent (1kHz, RT) (crystallized) | 0.0445 |

Recommended Firing Conditions

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

Applications

Operational Temperature: up to 900 °C

The typical application of GL1729 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.