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Appearance

Glass-ceramic sealing glass white colored in powder form

Chemical Composition (by weight)

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_2O_3)	1.76 - 3.76 %
Titanium dioxide (TiO_2)	1.21 - 3.21 %
Boron oxide (B_2O_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.