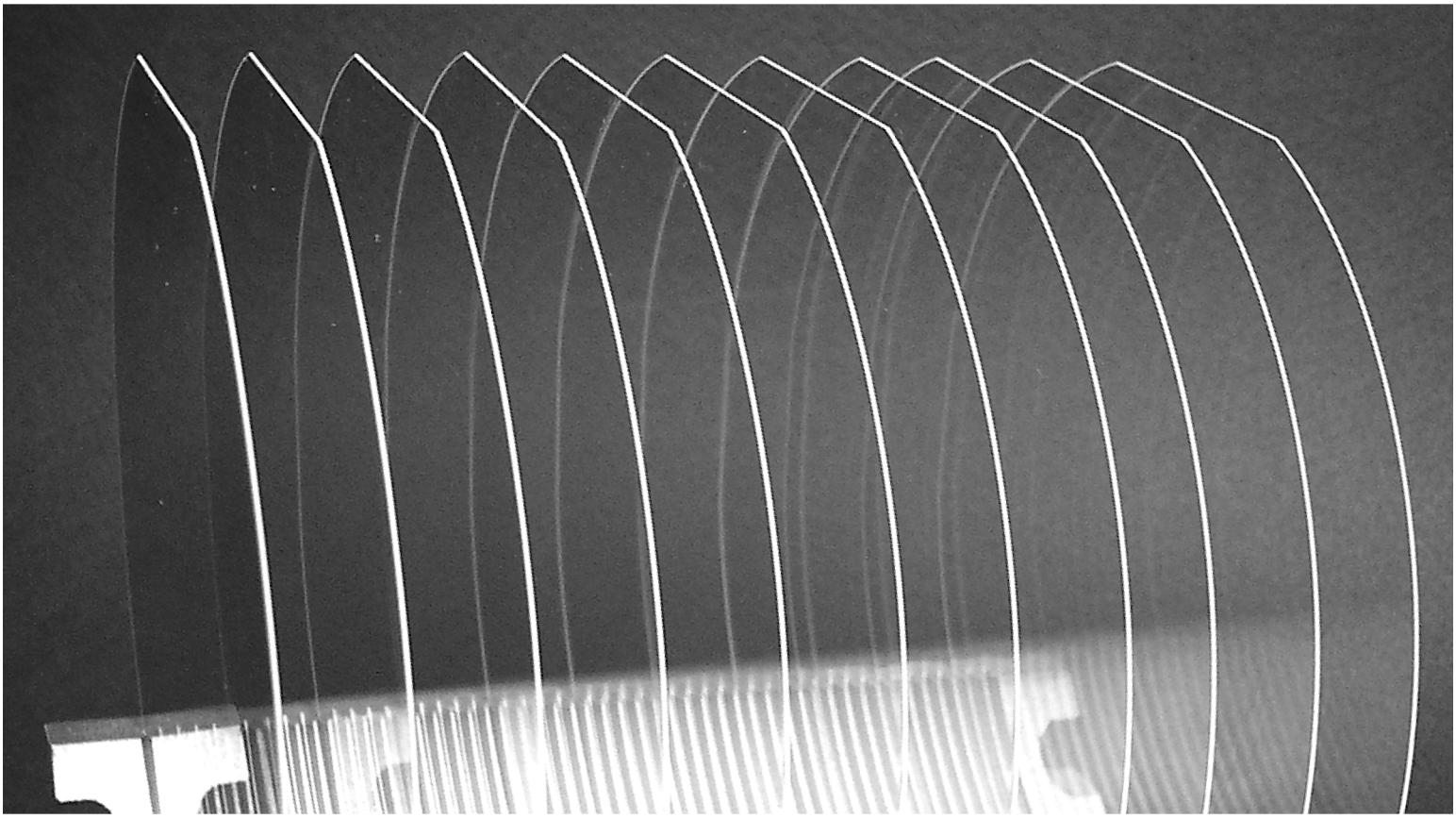
WAFER UNIVERSE



MATERIAL DATASHEET

SCG 32

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Alkaline free boro-aluminosilicate glass

no heavy metals such as arsenic, antimony, barium or halides
alkaline free
excellent thermal properties

cte adapted to Silicon

low density
high chemical resistance

substrate for high performance LCD
used in thin film semiconductors
carrier for wafer handling of thin Si wafers

Chemical Properties

Total alkali content: <0.1 wt%
(Typical: <0.05 wt%)

Mechanical Properties

Density [g/cc]	2.38
Young's Modulus [GPa]	73.6
Shear Modulus [GPa]	30.1

Poisson's Ratio	0.23
Vickers Hardness (200 gm load, 25 sec dwell)	640

Thermal Properties

Thermal Expansion	
Temperature	cte [x 10^{-7}/°C]
0 – 300°C	31.7
Room Temperature	35.5
To Setting Point [°C]	25-675

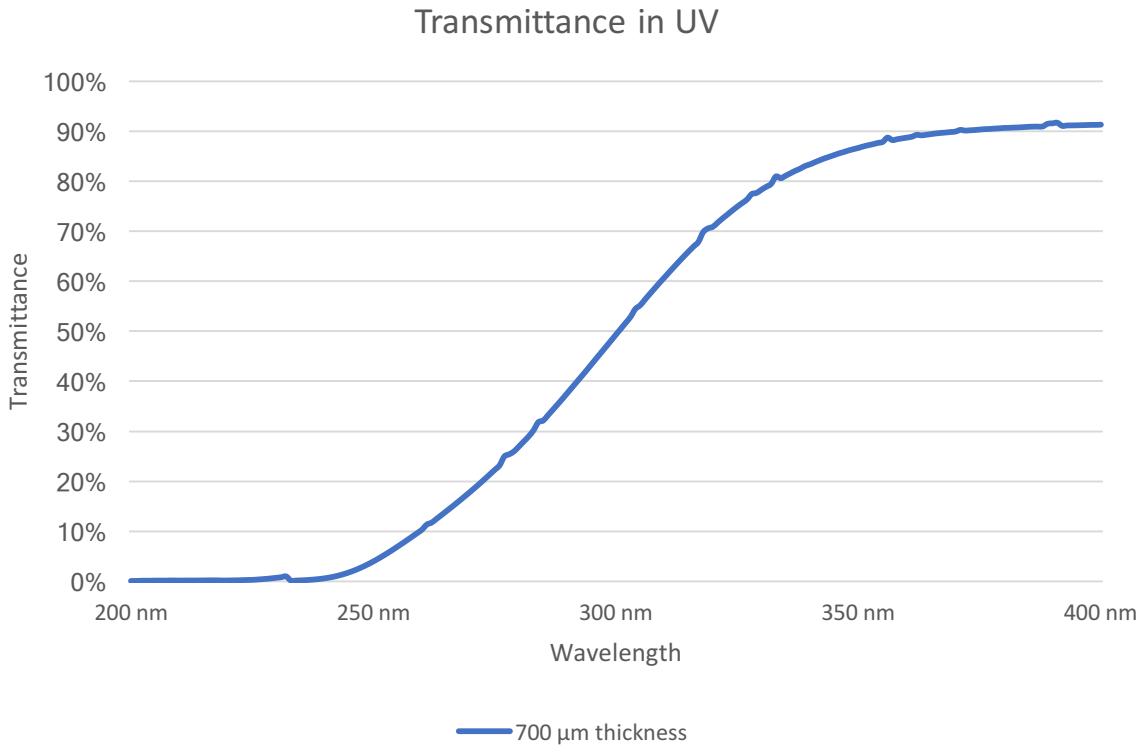
Thermal Conductivity			
Thermal conductivity is a calculated value, and is equal to the product of the thermal diffusivity multiplied by specific heat multiplied by the density of the glass.			
Temp [°C]	Specific Heat [J/gm-°K]	Thermal Diffusivity [cm^2/sec]	Thermal Conductivity [W/cm-°K]
23	0.768	0.00601	0.0109
100	0.896	0.00572	0.0122
200	0.998	0.00546	0.0129
300	1.067	0.00530	0.0134
400	1.110	0.00522	0.0137
500	1.154	0.00518	0.0142

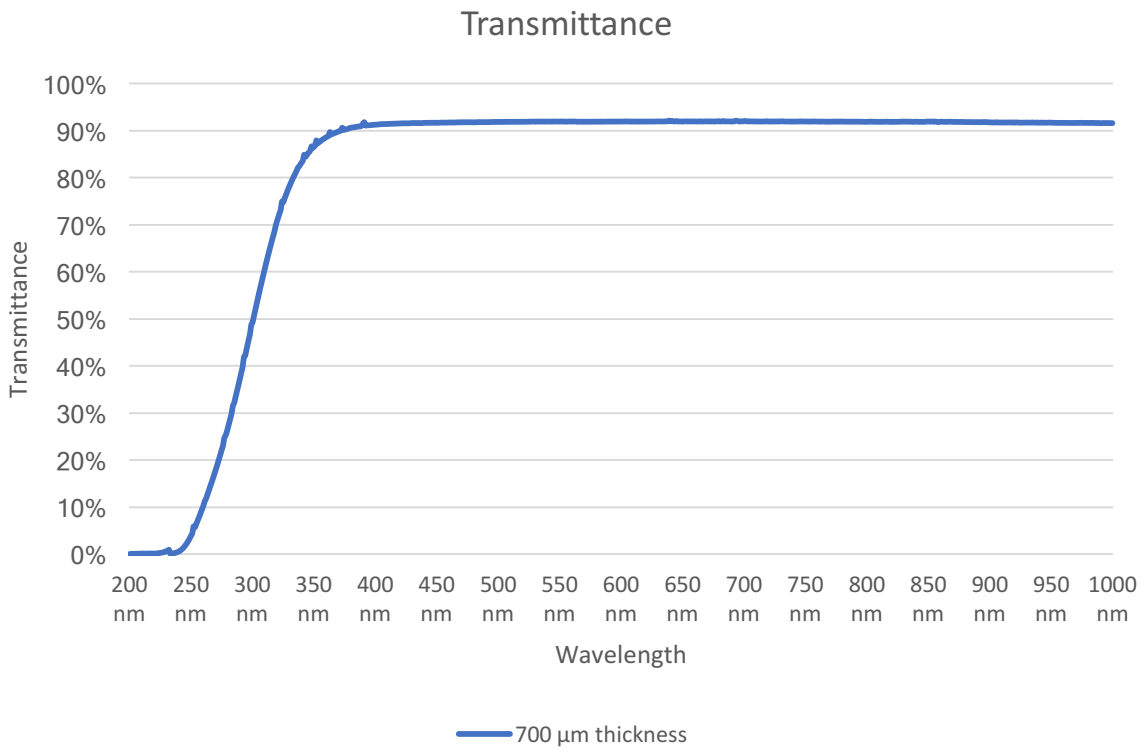
Viscosity	
Working Point (10^4 poises)	1293
Softening Point ($10^{7.6}$ poises)	971
Annealing Point (10^{13} poises)	722
Strain Point ($10^{14.5}$ poises)	669

Optical Properties

Optical Wavelength	Refractive Index
435.8 nm	1.5198
467.8 nm	1.5169
480 nm	1.5160
508.6 nm	1.5141
546.1 nm	1.5119
589.3 nm	1.5099
643.8 nm	1.5078
Birefringence Constant [nm/cm]	331

Wavelength	Transmittance
200 nm	0.1 %
250 nm	3.9 %
300 nm	49.4 %
350 nm	86.7 %
400 nm	91.4 %
500 nm	91.8 %
750 nm	91.9 %
1000 nm	91.8 %

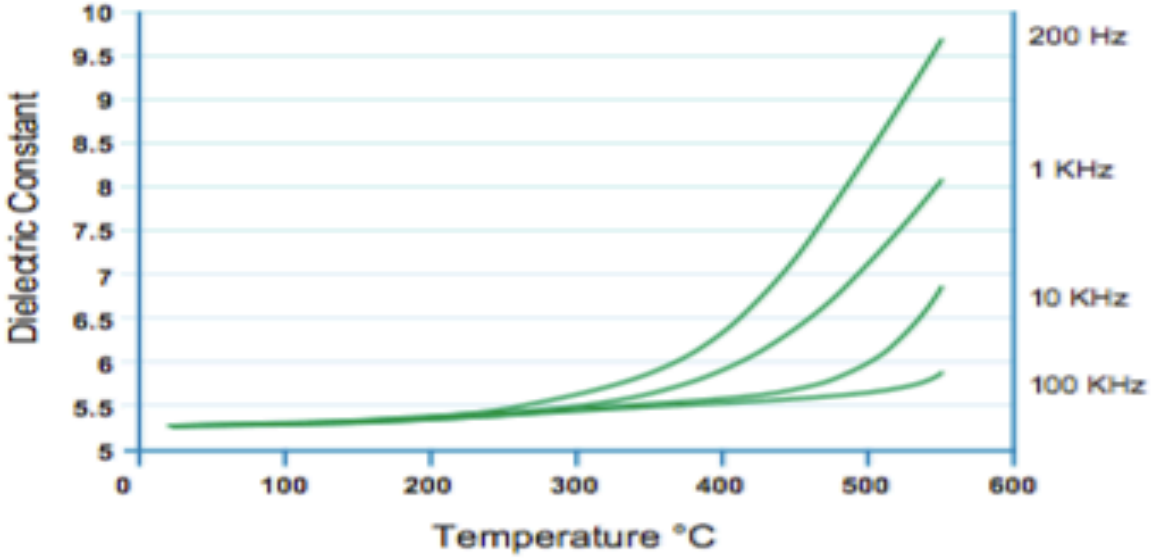




Electrical Properties

Log_{10}	Volume Resistivity [ohm-cm]
12.9	(250 °C)
8.8	(500 °C)

- Dieletric constant:



Dielectric constant (20°C/68°F – 1kHz)	5.27

Disclaimer:
The above data has been taken from the original raw material specification of the raw material producer. Completeness and validity cannot be guaranteed.

CONTACT:

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