General Properties

Glass types				Neoceram	
				N-0	N-11
Color				Transparent	White
Thermal properties	Thermal expansion coefficient	$\times10^{-7}$/°C	–50~0°C	–6	0
			0~50°C	–7	2
			30~380°C	–6	8
			30~750°C	–4	12
	Specific heat	J/kg°C	25°C	800	800
	Thermal conductivity	W/m°C	25°C	1.7	1.7
	Max. service temp.	°C	Continuous	750*	800*
			Short term	850*	900*
	Thermal shock resistance	°C	100×100×3mm Plate	800**	600**
Optical properties	Index of refraction (n_D)			1.541	—
	Abbe number (νd)			57	—
	Stress-optical coeff.	mμ/cm/kg/cm^2	25°C	3.0	—
Mechanical properties	Density	g/cm^3		2.51	2.50
	Bending strength	MPa	JIS R-1601	160	170
	Vicker's hardness	Hv (0.2)		710	720
	Young's modulus	GPa		93	87
Chemical properties	Acid resistance (5% HCl)	mg/cm^2	90°C, 24hrs	0.04	0.24
	Alkali resistance (5% Na_2CO_3)	mg/cm^2	90°C, 24hrs	0.32	0.96
Electrical properties	Volume resistivity (Log ρ)	Ω-cm	25°C	13	14
			150°C	8	9
			250°C	7	7
			350°C	6	5
	Dielectric constant (ε)		1MHz, 25°C	7	6
			2.45GHz, 25°C	—	6.6
	Loss tangent (tan δ)	$\times10^{-3}$	1MHz, 25°C	21	3
			2.45GHz, 25°C	—	5.9

* Maximum service temperature: Determination of the maximum service temperature is based on mechanical deformation, and is the temperature of which 100×300×3.8t mm plate specimens (supported to form a 280-mm span) deform by 1mm after 1,000 hours continuous or 24 hours short term heating.

** These figures are only general values derived by a procedure consisting of heated specimens which are then rapidly cooled by plunging them into water. Thermal shock properties of 100°C signify that specimens have been heated to 110°C and plunged into water at 10°C without exhibiting cracking.

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