BOROSILICATE GLASS BALLS

Glass balls with high chemical and thermal stability. They are electric insulators and they are resisting even at strong external strengths and pressure variations.

Applications

Special valves, safety valves, metering pumps. They are used in the pharmaceutical field and photographic devices.

Chemical composition

%SiO2	%Na2O	%CaO	%Al2O3	%B2O3	%K2O	%BaO	-	-	-	-	-
65,00-85,00	3,00-9,00	2,50 max	1,00-5,00	8,00-15,00	2,00 max	1,00 max	-	-	-	-	-

Physical / mechanical / thermal / electric / magnetic properties

Property	Symbol	U.o.M.	Type	Notes	Values
Density	δ	g/cm3	Physical	Room temp.	2,23
Young's modulus	E	GPa	Mechanical	-	64
Refractive index	n	-	Optic	-	1,471
Softening temperature	-	°C/°F	Thermal	Room temp./P.atm.	821 / 1510
Coefficient of linear thermal expansion	α	10^-6/°C	Thermal	(ΔT=0-100°C)	3,30
Thermal conductivity	λ	W/(m·K)	Thermal	Room temp.	1,15
Volume resistivity	ρ	Ω*m	Electric	-	> 10^15
Relative magnetic permeability	μ	-	Magnetic	Diamagnetic	<~1

Technical data

Property	Type	U.o.M.	Values	U.o.M.	Values
Hardness	Mechanical	Knoop	420 - 520	-	-
Ultimate compressive strength	Mechanical	MPa	1900 - 2100	psix10^3	275 - 305
Service temperature	Thermal	°C	0 / 200	°F	32 / 392

Range

Diameters (min/max)	U.o.M.	Diameters (min/max)	U.o.M.	Precision Grade
1,000 - 100,000	mm	3/64 - 4	"	V100-V200-V500-V1000-V2000

Corrosion Resistance

Borosilicate balls have excellent corrosion resistance into water, most acid compounds, salt solutions, organic solvents and halogens. They are useful to resist in strong oxidizing environments. Fairish resistance to alkaline solutions, tehy do not resist to strong alkaline solutions, hydrofluoric acid and hot concentrated phosphoric acid.