

Glass Type/Application	Neutral glass tubing, chemically highly resistant Pharmaceutical primary packaging				
Physical Data (approx. value)	Coefficient of mean linear thermal expansion $\alpha(20^{\circ}\text{C}; 300^{\circ}\text{C})$ acc. to ISO 7991 .....		$4.9 \cdot 10^{-6} \text{K}^{-1}$		
	Transformation Temperature $T_g$ .....		565 °C		
	Glass temperature at viscosity $\eta$ in $\text{dPa} \cdot \text{s}$				
	$10^{13}$ (annealing point).....		565 °C		
	$10^{7.6}$ (softening point) .....		785 °C		
	$10^4$ (working point) .....		1160 °C		
	Density $\rho$ at 25°C .....		2.34 $\text{g} \cdot \text{cm}^{-3}$		
Chemical Data	Hydrolytic resistance				
	acc. to ISO 719 .....	Class HGB 1			
	acc. to Ph. Eur. ....	Type I			
	acc. to USP.....	Type I			
	acc. to JP.....	fulfilled			
	Acid resistance (DIN 12116) .....	Class S 1			
Alkali resistance (ISO 695) .....	Class A 2				
	ASTM E 438 .....	Type I	Class B		
Chemical Composition (main components in approx. weight %)	SiO <sub>2</sub>	B <sub>2</sub> O <sub>3</sub>	Al <sub>2</sub> O <sub>3</sub>	Na <sub>2</sub> O	CaO
	75	10.5	5	7	1.5
	The heavy metal content for the elements lead, cadmium, mercury and hexavalent chromium is below 100 ppm.				

### Transmission (exemplary spectrum)

