

Glass Type/Application	soda-lime glass Pharmaceutical primary packaging, general technical application
Physical Data (approx. value)	<p>Coefficient of mean linear thermal expansion  <math>\alpha(20^{\circ}\text{C}; 300^{\circ}\text{C})</math> acc. to ISO 7991 ..... <math>9.1 \cdot 10^{-6} \text{K}^{-1}</math></p> <p>Transformation Temperature <math>T_g</math> ..... <math>525 \text{ }^{\circ}\text{C}</math></p> <p>Glass temperature at viscosity <math>\eta</math> in <math>\text{dPa} \cdot \text{s}</math></p> <p><math>10^{13}</math> (annealing point)..... <math>530 \text{ }^{\circ}\text{C}</math></p> <p><math>10^{7.6}</math> (softening point) ..... <math>720 \text{ }^{\circ}\text{C}</math></p> <p><math>10^4</math> (working point) ..... <math>1040 \text{ }^{\circ}\text{C}</math></p> <p>Density <math>\rho</math> at <math>25^{\circ}\text{C}</math> ..... <math>2.50 \text{ g} \cdot \text{cm}^{-3}</math></p>
Chemical Data	<p>Hydrolytic resistance</p> <p>acc. to ISO 719 ..... Class HGB 3</p> <p>acc. to Ph. Eur. .... Type III</p> <p>acc. to USP..... Type III</p> <p>Acid resistance (DIN 12116) ..... Class S 1</p> <p>Alkali resistance (ISO 695) ..... Class A 2</p> <p>ASTM E 438 ..... Type II</p>
Chemical Composition (main components in approx. weight %)	<p>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 K<sub>2</sub>O BaO CaO MgO</p> <p>69 1 4 13 3 2 5 3</p> <p>The heavy metal content for the elements lead, cadmium, mercury and hexavalent chromium is below 100 ppm.</p>

