

# BORO-8330™

## Technical Data

|                       |   |
|-----------------------|---|
| GlassType/Application | Borosilicate glass 3.3 acc. to ISO 3585, chemically and thermally highly resistant<br>Special pharmaceutical applications |
|-----------------------|---|

|  |  |      |                               |
|--|--|------|-------------------------------|
| Physical Data  | Coefficient of mean linear thermal expansion<br>$\alpha$ (20°C;300°C) acc. to ISO 7991 ..... | 3.3  | $10^{-6}K^{-1}$               |
|  | Transformation temperature $T_g$ .....   | 525  | °C                            |
|  | Glass temperature at viscosity $\eta$ in dPa·s   |      |                               |
|  | $10^{13}$ (annealing point).....   | 560  | °C                            |
|  | $10^{7.6}$ (softening point).....  | 825  | °C                            |
|  | $10^4$ (working point).....  | 1260 | °C                            |
|  | Stress-optical coefficient K .....   | 4.0  | $10^{-6}mm^2 \cdot N^{-1}$    |
|  | Density $\rho$ at 25°C .....   | 2.23 | $g \cdot cm^{-3}$             |
|  | Modulus of elasticity E (Young's modulus) .....  | 63   | $10^3N \cdot mm^{-2}$         |
|  | Poisson's ratio $\mu$ .....  | 0.2  |                               |
|  | Thermal conductivity $\lambda_w$ at 90°C .....   | 1.2  | $W \cdot m^{-1} \cdot K^{-1}$ |
|  | Log of the electric volume resistivity ( $\Omega \cdot cm$ )                                 |      |                               |
|  | at 250°C .....   | 8.0  |                               |
|  | at 350°C .....   | 6.5  |                               |
|  | $t_{k100}$ .....   | 250  | °C                            |
|  | Dielectric constant $\epsilon$ for 1 MHz at 25°C .....                                       | 4.6  |                               |
|  | Dielectric loss factor $\tan \delta$ for 1 MHz at 25°C .....                                 | 37   | $10^{-4}$                     |
| Refractive index $n_d$ ( $\lambda = 587.6$ nm) ..... | 1.473  |      |                               |

|                     |                                       |       |       |
|---------------------|---------------------------------------|-------|-------|
| Chemical Resistance | Hydrolytic resistance (ISO 719) ..... | Class | HGB 1 |
|                     | Acid resistance (DIN 12116) .....     | Class | S 1   |
|                     | Alkali resistance (ISO 695) .....     | Class | A 2   |

The heavy metal content for the elements lead, cadmium, mercury and hexavalent chromium is below 100 ppm

