

TECHNICAL DATASHEET

GLASS 0100

Page 1/2
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EN

GENERAL FEATURES/SHORT DESCRIPTION

Soda lime glass is a low priced standard glass, which is typically used for the production of primary packaging, small bottles, tablet jars, test tubes and capillaries. It can be lightly processed and fused with different metals with similar expansion, like e. g. platinum. Furthermore it is resistant against acids and lyes.

Material No.	0100
Glass type	Soda lime glass
Available as	tubes & capillaries rods & fibres
Certificate for biocompatibility	available

TEMPERATURE FEATURES

Transformation temperature	$T_g = 525 \text{ °C}$
Strain point	-
Annealing point	530 °C at $10^{13} \text{ dPa} \cdot \text{s}$
Softening point	720 °C at $10^{7.6} \text{ dPa} \cdot \text{s}$
Working point	1040 °C at $10^4 \text{ dPa} \cdot \text{s}$
Expansion limit (°C)	-
Coefficient of expansion	$\alpha_{(20-300 \text{ °C})} = 9.1 \cdot 10^{-6} \cdot \text{K}^{-1}$
Max. operating temperatures	-
Thermal conductivity	$\lambda_w = 1.1 \text{ W} \cdot \text{m}^{-1} \cdot \text{K}^{-1}$ (at 90 °C)
Thermal capacity	-
Specific heat (20 °C)	-
Max. continuous working temp.	-
Max. short-term working temp.	-

MECHANICAL FEATURES

Density	2.50 g/cm ³
Mohs hardness	-
Modulus of elasticity	$73 \cdot 10^3 \text{ N} \cdot \text{mm}^{-2}$
Bending strength	-
Knoop-hardness	-
Abrasive hardness	-
Vickers hardness	-
Torsion modulus	-
Torsion strength	-
Micro hardness	-
Compressive strength	-
Poisson's ratio	$\mu = 0.22$
Tensile strength	-
Abrasion after 9 h grinding	-
Shear modulus	-

OPTICAL FEATURES

Refractive index	$n_d = 1.514; \lambda = 587,6 \text{ nm}$
Abbe number	-
Bubbles, Inclusions (> 0,3 mm)	-
Stress-optical coefficient	$K = 2.7 \cdot 10^{-6} \text{ mm}^2 \cdot \text{N}^{-1}$

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ELECTRICAL FEATURES

t_{k100}	200 °C
log of the electrical volume resistivity	7.1 $\Omega \cdot \text{cm}$ at 250 °C 5.7 $\Omega \cdot \text{cm}$ at 350 °C
Electrical Resistivity (350 °C)	–
Specific Electrical Resistivity	–
Contact resistance	–
Dielectric properties for 1 MHz at 25 °C	$\epsilon = 7.2$
Dielectric properties for 1 MHz at 20 °C	–
Dielectric constant at 7,5 GHz	–
Dielectric strength	–
Electrical loss factor	$\tan \delta = 70 \cdot 10^{-4}$ (for 1 MHz at 25 °C)
Loss tangent	–

CHEMICAL FEATURES

Hydrolytic resistance, class	3 (DIN ISO 719)
Acid resistance, class	1 (DIN 12 116)
Alkali resistance, class	2 (DIN ISO 695)
Chemical components	SiO ₂ (69 %) Na ₂ O (13 %) Al ₂ O ₃ (4 %) K ₂ O (3 %) B ₂ O ₃ (1 %) BaO (2 %) CaO (5 %) MgO (3 %)
Content of OH	–
Typical Trace Elements	–
Heavy metal content	–
Coefficient of absorption for MoK α - radiation	–
Coefficient of absorption for CuK α - radiation	–
Purity	–

TRANSMISSION CURVE

