SCHOTT Xensation® α

Made to survive

Concentrated energy of leading experts
Based on its **leading expertise** and driven by many years of sound research in various specialty glass areas, SCHOTT has come a decisive step closer to achieving its goal of **unbreakable cover glass**.

This became possible as SCHOTT emerged as a **true pioneer** producing borosilicate glass, glass-ceramics and lithium aluminosilicate (LAS) cover glass by using float technology.

SCHOTT's worldwide unequalled **innovation power** has paved the way for those successful new glass developments and created the latest invention: **Xensation® α** – a lithium alumino-borosilicate (LABS) glass for high-end smartphones.

This **high-performance cover glass** unites the chemical strengthening potential of LAS glass with the scratch performance of borosilicate glass and a strong glass backbone like in glass-ceramics.

Key benefits of Xensation® α

- **Outperforms** current market leading cover glasses by up to 100 % in **set-drop performance** on all grounds, including rough surfaces.
- **Less sensitive** to **scratches** than conventional LAS glasses shown in Knoop indenter scratch test.

Unique glass composition

Improved drop resistance

Less susceptible to scratches

SCHOTT
glass made of ideas

SCHOTT Xensation® α

Mechanical properties	
Density ρ	2.39 g/cm³
Young's modulus E	80 kN/mm²
Poisson's ratio ν	0.26
Shear modulus G	32 kN/mm²
Vickers hardness HV	
unstrengthened	570
strengthened*	660

Optical properties			
Wavelength λ [nm]	365	595	640
Measurement method	FSM-UV	FSM-LE	SLP-1000
Refractive index n of core glass	1.528	1.508	1.507
Refractive index n of K-exchanged layer*	1.531	1.510	1.508
Photoelastic constant C [nm/(cm*MPa)]	32.3	30.0	29.8
Transmittance T [%] (t = 0.78 mm)	89	91	92

Electrical properties (extrapolated)		
Frequency f_0 [MHz]	Dielectric constant ε	Loss tangent tan δ
54	6.1	0.008
480	6.0	0.009
825	6.0	0.010
912	6.0	0.010
1977	6.0	0.011
2170	6.0	0.011
2986	6.0	0.012

Thermal properties	
Coefficient of mean linear thermal expansion $\alpha_{(20\,°C - 300\,°C)}$	$5.3 \cdot 10^{-6}\ K^{-1}$
Transformation temperature T_g	577 °C
Viscosity	
Annealing point at 10^{13} dPas	589 °C
Softening point at $10^{7.6}$ dPas	840 °C
Working point at 10^4 dPas	1233 °C

Chemical properties	
Hydrolytic resistance acc. to DIN ISO 719	
Hydrolytic class	HGB1
Equivalent of alkali Na_2O per gram of glass grains [µg/g]	32
Acid resistance acc. to DIN 12 116	
Acid class	S2
Half surface weight loss after 6 hours [mg/dm²]	1.4
Alkali resistance acc. to DIN ISO 695	
Alkali class	A2
Surface weight loss after 3 hours [mg/dm²]	92

Chemical strengthening*	
Compressive stress CS	capable > 900 MPa
Depth of compressive layer DoCL	capable > 180 µm
4-Point bending strength	capable > 800 MPa

Forms supplied**	
Thickness range	0.60 – 0.80 mm
Sheet size	1150 mm x 950 mm

All values are typical measured values and refer to unstrengthened glass.
* Typical values that can be achieved after chemical strengthening process
** Further thicknesses and sheet sizes are available on request

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