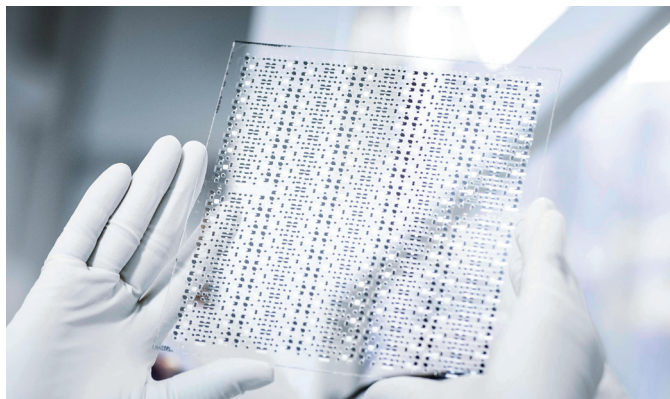


BOROFLOAT® 33 – Chemical Properties

The sum of its properties is what makes it unique.

BOROFLOAT® 33 from Germany is the world's first floated borosilicate flat glass. It combines superior quality and excellent flatness with outstanding thermal, optical, chemical and mechanical features. The chemical composition and physical properties of BOROFLOAT® 33 are in accordance with ASTM E 438-92 (2001), Type 1, class A. Rediscover BOROFLOAT® 33 and experience the infinite potential of our most versatile material platform. BOROFLOAT® – Inspiration through Quality.



Bonded glass for Lithium Monitoring Chips made of BOROFLOAT® 33.

Chemical durability

Hydrolytic resistance	(according to ISO 719 / DIN 12 111)	HGB 1
	(according to ISO 720)	HGA 1
Acid resistance	(according to ISO 1776 / DIN 12 116)	1
Alkali resistance	(according to ISO 695 / DIN 52 322)	A 2

Corrosion test for Display Glass

Reagent	Abrasion [mg/cm ²]	Visual observations
24 h at 95 °C		
5 Vol. % HCl	< 0.01	Unchanged
0.02 n H ₂ SO ₄	< 0.01	Unchanged
H ₂ O	< 0.01	Unchanged
6 h at 95 °C		
5 % NaOH	1.1	White stains
0.02 n NaOH	0.16	White haze
0.02 n Na ₂ CO ₃	0.16	Unchanged
20 min. at 23 °C		
10 % HF	1.1	Stained white haze
10 % NH ₄ F x HF	0.14	Unchanged

Chemical resistance of BOROFLOAT® 33 to selected reagents.

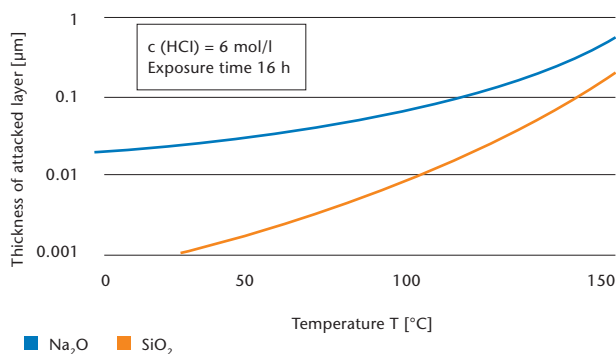
Further data and information available on request.

Key benefits:

High chemical durability

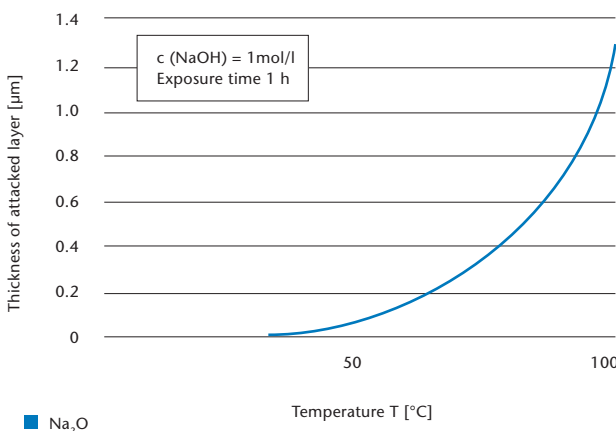
- High hydrolytic resistance
- Excellent resistance to acids
- High resistance to alkalis
- Low alkali diffusion

Resistance to acids



Acid resistance of BOROFLOAT® 33 as a function of temperature (very low loss of mass).

Resistance to alkalis



Alkali resistance of BOROFLOAT® 33 as a function of temperature (moderate loss of mass).

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