



KAVALIER

TECHNICAL DATA SHEET

Issuer's name/producer: **KAVALIERGLASS, a.s.**
 Issuer's address/Producer: **Křížová 1018/6, Prague 5**
 Production plant: **Sklářská 359, 285 06 Sázava, Czech Republic**

Glass type: **BOROSILICATE GLASS SIMAX[®], acc. to ISO 3585**
 glass with high thermal and chemical resistance

Country of origin: **Czech Republic**

Purpose of use: **Application in technical, pharmaceutical, laboratory or food industry**

- Composition of SIMAX[®]**

CAS No.	EINECS No.	Component:	Percent:
65997-17-3	266-046-0	Glass, oxide, chemicals	100

- Chemical characteristics of borosilicate glass (approximate values) ASTM E438**

Component	Content (percentage by weight)
SiO ₂	80,3%
B ₂ O ₃	13,0%
Al ₂ O ₃	2,4%
Na ₂ O + K ₂ O	4,3%

- Chemical properties:**

Hydrolytic resistance	water at 98 °C	ISO 719	HGB1
	water at 121 °C	ISO 720	HGA1
	glass grains, test B	Eur.Pharm.; chap. 3.2.1	HGA1
Acid resistance		ISO 1776	1
Alkali resistance		ISO 695	A2
The heavy metal content for the elements Pb, Cd, Cu and Cr ^{VI}			below 100 ppm

- **Physical properties:**

Coefficient of mean linear thermal expansion α	(20/300 °C)	ISO 7991	(3,3 ± 0,1) x10⁻⁶ K⁻¹
Density ρ			(2,23 ± 0,02) g.cm⁻³
Thermal conductivity	at 100 °C		1,2 W.m⁻¹.K⁻¹
Temperatures at viscosity of η [dPa.s]	10 ⁴ working point	ISO 7884	1260 °C
	10 ^{7,6} softening point		820 °C
	10 ^{13,2} annealing point		558 °C
Transformation temperature T_g		ISO 7884-8	525 °C
Modulus of elasticity/ Young's modulus (E)			63x10³ MPa
Poisson's ratio			0,19
Tensile strength (R)			35-100 MPa
Maximum permissible short-term operating temperature			500 °C /under 5 h
Maximum permissible long-term operating temperature			300 °C / over 10 h
Minimum permissible operating temperature			-40 °C

- **Mechanical stability:**

Scratch hardness of glass on Mohs scale 6	allowable tensile stress	3,5 MPa
	allowable bending stress	7,0 MPa
	allowable compressive stress	100 MPa
Knoop Hardness (100 g)	HK0,1/20	446 KHN

- **Thermal properties:**

Wall thickness [mm] resistance to thermal shock [Δ °C]		[Δ °C]
	1 mm	303
	3 mm	175
	6 mm	124
	10 mm	96

- **Optical properties:**

Simax glass refractive index n_d	$\lambda = 589.30$ nm	1,472
Photoelastic constant		3,6.10⁻⁶ MPa⁻¹
Solar transmittance	$\lambda = (300 - 2500)$ nm	≥ 91,8 %

- **Electrical properties:**

At current temperatures, SIMAX glass mass is non-conducting material – it is an insulant.

Electrical resistivity in a humidity-free environment (20 °C)	> 1013-1015 W×cm
Permittivity ϵ (20 °C, 1 MHz)	4,6
Loss angle $tg \delta$	4,9.10 ⁻³

Additional information:

The producer also declares that the products are safe when used in usual and proper way.

The producer has installed the Quality Assurance System according to ISO 9001 and thus guarantees that all products delivered to the market are in full conformity with the technical documentation and with all fundamental requirements to such products. Certificate No. 3258 100 23 52 0132 issued by TÜV CERT, Certification Body at TÜV NORD CERT GmbH.

Sázava, 23. 01. 2026
Place and date of issue

Ing. Kristýna Machová
Project Quality Engineer

KAVALIERGLASS, s.r.o.
Křížová 1018/6, 150 00 Praha 5
office: Sídelská 359, 285 06 Sázava
Czech Republic
IČ: 474 68 815
-61-