Why you should choose

SIMAX

glassware

Products made of Simax glass are smooth and imporous, perfectly transparent, corrosion-resistant even in long-lasting operations, sufficiently homogeneous, and free of any heterogeneous particles.

But why should you choose Simax glassware over other brands?

Simax branded glassware is made exclusively at the Kavalier Glassworks in The Czech Republic. They are one of the oldest and most highly respected technical glass factories in Europe. Below is some information on the glass properties that makes Simax glass unique.

Chemical Composition

Simax Borosilicate 3.3 glass has the following chemical composition:
SiO_2 - 80.6%
B_2O_3 - 13%
$Na_2O + K_2O$ - 4%
Al_2O_3 - 2.4%

Resistance against
Water at 98 °C - HGB 1
water at 121 °C - HGA 1
Acids - 1
Effect of water solution of alkali mixture - A2 or better

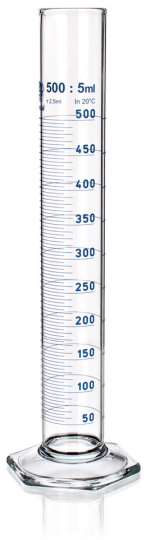
Simax Borosilicate 3.3 glass is highly resistant to effects of water, neutral and acid solutions, strong acids and their mixtures, chlorine, bromine, iodine, and organic compounds.

Even in long-term effects and at temperatures above 100 °C, this glass outstrips, with its chemical durability, most metals and other raw materials.

Standards

Simax glass conforms to many standards and regulations:

- ISO 3585
- European Pharmacopoeia 10 - 3.2.1.
- ISO 7086-1:2000
- ISO 7086-2:2000
- ISO 719:2020
- Commission Regulation (EU) No. 2023/2006
- Regulation EC No. 1935/2004
- Regulation of Czech Health ministry Decree No, 30/2001 Coll.
- Directive 84/500EEC



Thermal Properties

Simax glassware has excellent thermal resistance at high and low temperatures. The recommended maximum working temperature (short term) is 500°C. The glass softens at 825°C.

Sudden changes in temperature should be avoided to prevent thermal shock and breakage. All glassware should be cooled or heated steadily and uniformly.

All Simax glassware can be autoclaved, however any plastic accessories need to be taken into account.

Simax Laboratory bottles

Simax Laboratory bottles have excellent chemical properties and a high thermal resistance. Bottles of 100ml or higher come completed with a GL45 cap and pouring ring for easy liquid pouring. The caps and pouring rings are interchangeable among all sizes.

Different coloured caps and pouring rings are available for these bottles.

Every bottle features a retrace code so that the product may be identified by it's production date and batch number.

These bottles can be autoclaved along with their caps, however the screw cap must only be loosely fitted. If the cap is screwed on, a pressure difference is created which can result in bottle breakage.

Simax Laboratory bottles are suitable for freezing, down to -40°C.

These bottles are also available with a plastic coating for additional laboratory safety.

Physical Properties

Mean linear and thermal coefficient of expansion α (20 °C; 300 °C) according to ISO 7991		**3.3 x10–6 K–1**
Transformation temperature Tg.		**525 °C**
Glass temperature at viscosity η in dPa.s	1013 (upper cooling temperature)	**560 °C**
Glass temperature at viscosity η in dPa.s	107,6 (softening temperature)	**825 °C**
Glass temperature at viscosity η in dPa.s	104 (working range)	**1260 °C**
Highest short-term admissible working range		**500 °C**
Density ρ at 20 °C		**2,23 g. cm–3**
Modulus of elasticity E (Young modulus)		**64 x 103 MPa**
Poisson ratio μ		**0.2**
Thermal conductivity λ (20 to 100 °C)		**1,2 W.m–1. K–1**

Optical Properties

Simax glass is transparent and does not show substantial absorption in visible spectrum. Permeability of ultra-violet rays enables products made form Simas glass to be used for photochemical reactions.

Refractive index (λ = 587.6 nm) nd - 1.473

Photoelastic constant (DIN 52314) K - 4,0.10—6 mm2.N—1