



KAVALIER

CERTIFICATE OF CONFORMITY

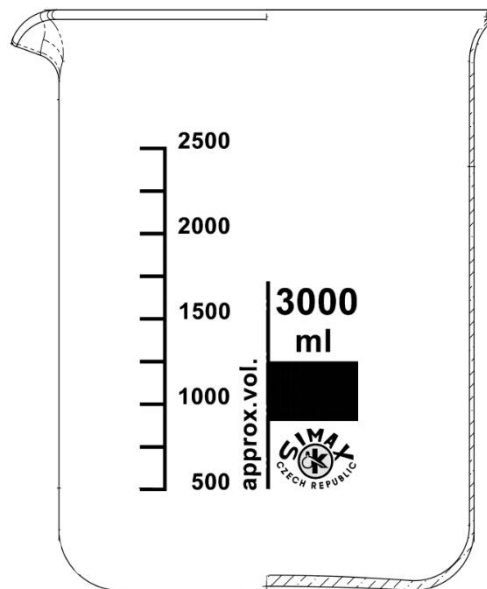
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Issuer's name/ producer: **KAVALIERGLASS, a.s.**
 Issuer's address/Producer: **Křížová 1018/6, Prague 5**
 Production plant: **Sklářská 359, 285 06 Sázava, Czech Republic**

Object of the declaration: **BEAKERS, low form, with spout**

<u>Type of the beakers</u>	<u>Catalogue Nr.</u>	<u>Product IDN</u>	<u>Capacity/ ml</u>	<u>d [mm]</u>	<u>h [mm]</u>
Low form	155	1632417010952	3000	150	210

Scheme of the glass item



Material specification:		
Beaker	clear	Borosilicate glass SIMAX®
Print	white	in fired-on, chemically resistant ceramic enamel
Purpose of use	laboratory glassware Suitable for work with higher mechanical effort, more resistant against stroke and smash	

The object of the certificate described above is in conformity with the requirements of the following standards and regulations:

Glass characteristics:

- ISO 3585 Borosilicate glass 3.3 – Properties
 - Chemical durability (art. 4.1, 4.2, 4.3, 4.4)
 - Physical properties (art. 5.1, 5.2, 5.3, 5.4, 5.5, 5.6)
- ISO 4794 Laboratory glassware — Methods for assessing the chemical resistance of enamels used for colour coding and colour marking
- Glass containers for pharmaceutical use
 - Eur. Ph 10th Edition -3.2.1 Glass Type I.
- ISO 3819:2020 - Laboratory glassware — Beakers
 - Maximum permissible errors in dimensions fulfill the values specified in Table 1 - ISO 3819:2020

Table 1 – ISO 3819:2020

Dimensions of low form beakers		
Nominal capacity [ml]	External diameter [mm] ± 5%	Overall height [mm] max.
<u>5</u>	<u>22</u>	<u>32</u>
<u>10</u>	<u>26</u>	<u>37</u>
<u>25</u>	<u>34</u>	<u>52</u>
<u>50</u>	<u>42</u>	<u>62</u>
<u>100</u>	<u>50</u>	<u>72</u>
<u>150</u>	<u>60</u>	<u>82</u>
<u>250</u>	<u>70</u>	<u>97</u>
<u>400</u>	<u>80</u>	<u>113</u>
<u>500</u>	<u>85</u>	<u>118</u>
<u>600</u>	<u>90</u>	<u>128</u>
<u>800</u>	<u>100</u>	<u>138</u>
<u>1000</u>	<u>105</u>	<u>148</u>
<u>2000</u>	<u>130</u>	<u>188</u>
<u>3000</u>	<u>150</u>	<u>214</u>
<u>5000</u>	<u>170</u>	<u>274</u>
<u>10000</u>	<u>220</u>	<u>360</u>

No heavy metals (lead, cadmium, mercury and hexavalent chromium):

- Regulation (EC) No. 987/2008 of 8 October 2008 amending Regulation (EC) No. 1907/2006 – REACH as regards Annexes IV and V – glass was exempted from the obligation to register.

Characteristics of Borosilicate glass SIMAX®

- **Acid resistance** Class I. ISO 1776
- **Hydrolytic resistance** Class I. HGB1 to ISO 719;
HGA1 to ISO 720
- **Alkali resistance** Class II. ISO 695
- **Coefficient of mean linear thermal expansion α : $3,3 \times 10^{-6} \text{ K}^{-1}$** ISO 7991; (20/300 °C)

- **Pharmaceutical use**

	<i>European Pharmacopoeia (EP)</i>	<i>US Pharmacopoeia (USP)</i>	<i>Japanese Pharmacopoeia (JP)</i>
Glass	Eur. Ph.10 th – 3.2.1	USP <660>	JP16

Supporting data:

TEST / European Pharmacopoeia 10, Art. 3.2.1	UNIT	LIMIT	RESULT
Hydrolytic resistance - inner surfaces, test A	ml 0,01 mol/l HCl/100ml of leachate	max 0,40	0,04
Hydrolytic resistance - glass grains, test B	mol 0,02/l HCl/g	max 0,1	0,038
Arsenic content	µg As/g	max 0,1	< 0,001

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

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 characteristics Borosilicate glass SIMAX® (acc. to Regulation No 1907/2006/EC):**

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

- **Temperature resistance**

The maximum permissible short-term operating temperature is 500 °C
 The recommended permissible temperature is 350 °C. This temperature may be exceeded for a short period.
 The maximum thermal shock resistance is ΔT = 100 K.

Before using, the glass surfaces of the Beakers have to be checked for damages such as scratches, cracks or nicks. Damaged beakers must not be used for safety reasons.

Additional information:

The producer confirms hereby that the characteristics, measures and accuracy of the products listed above are in full conformity with the provisions of the standard.

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.

The certificate is issued for the customer: **AUXILAB S.L.**

Sázava, 27. 03. 2024
 Place and date of issue

Ing. Kristýna Máchová
 Project Quality Engineer

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