

Standard Glass 3 of the DGG

Borosilicate Glass

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Standard Glass 3 of the DGG is a borosilicate glass (close to Duran). Available are results of round robin tests for the

- content of the main components,

1. Composition (main components)

component	SiO₂	B₂O₃	Al₂O₃	Fe₂O₃	TiO₂
fraction in mass %	78.56	12.7	2.76	0.096	0.026
	77.98	12.51	2.64	0.08	0.024
spread in mass %	-	-	-	-	-
	79.0	12.95	2.85	0.11	0.03
component	BaO	CaO	MgO	Na₂O	K₂O
fraction in mass %	0.1	0.2	0.033	3.43	0.94
	0.091	0.18	0.027	3.38	0.86
spread in mass %	-	-	-	-	-
	0.12	0.21	0.04	3.93	0.98

The chemical composition was determined in a round robin test executed by the subgroup "glass analysis" of the technical committee 1 of the DGG "physics and chemistry of glasses". [Reference Number: **UA 1-DGG/FAI/ 16-00**]

2. Loss of ignition

The loss of ignition is 1.34 mass % after annealing 2 hours at 600°C. The glass is available as powder. The huge specific surface leads to an intensified adsorption of water (vapor). The loss of ignition therefore is based on the water content of the material. A conditioning at 600°C over 2 hours is necessary to achieve constant weight.

3. Sieve analysis

A sieve analysis according to DIN 66165 showed the following grain size distribution:

Grain size (nominal value) x_d up to x_o in mm	Fraktion ΔQ in %
$x < 0.040$	2.9
$0.040 < x < 0.100$	47.8
$0.100 < x < 0.200$	23.8
$0.200 < x < 0.315$	16.3
$0.315 < x$	9.2

4. Annex 1: Sales information

The glass is available as powder, weighing 98 to 100 g

Costs (January 2022): EUR 100.00 per portion + shipping costs

Purchase orders to:

**Zentrum für Glas- und Umweltanalytik GmbH,
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5. Annex 2: for information: single measurements of additional properties

Property	Details/remarks	Standard Glass 2 of the DGG	Reference
Refractive index	n_D ; 589,2 nm	1,52195	