

# The Society of Glass Technology

Certified Reference Material Certificate of Analysis

## AMBER SODA-LIME-SILICA CONTAINER GLASS SGT 10

LABORATORY MEANS EXPRESSED AS OXIDES  
Mass content in % related to the dried (105 Celsius) sample

Method	SiO <sub>2</sub>	Al <sub>2</sub> O <sub>3</sub>	Fe <sub>2</sub> O <sub>3</sub>	CaO	MgO	BaO	Na <sub>2</sub> O	K <sub>2</sub> O	TiO <sub>2</sub>	SO <sub>3</sub>	Cr <sub>2</sub> O <sub>3</sub>	ZrO <sub>2</sub>	Mn <sub>3</sub> O <sub>4</sub>
1		1.67	0.314	10.80	1.82	0.020	12.16	0.37	0.093	0.05	0.017		
1		1.60	0.325	10.81	1.82	0.023	12.15	0.34	0.100	0.06	0.017		0.039
1	72.52	1.67	0.337		1.82			0.36					
1		1.55	0.327	10.66	1.81		12.26	0.35	0.093				
2	72.69	1.63	0.328	10.66	1.82		12.24	0.35	0.097	0.05	0.024	0.022	
1	72.72	1.64	0.323	10.63	1.81	0.020	12.22	0.35	0.096	0.04	0.022	0.024	0.033
1	72.76	1.63	0.308	10.59	1.79	0.021	12.19	0.35	0.098		0.020	0.028	
1		1.59	0.34		1.82	0.020		0.35	0.095	0.06	0.021	0.033	
1	72.70	1.57	0.315	10.60		0.021	12.20	0.34	0.098	0.04	0.020	0.016	0.041
2	72.68	1.63	0.328	10.65	1.81		12.22	0.35	0.100	0.05	0.018	0.020	
<sup>M</sup> M	72.68	1.62	0.325	10.68	1.81	0.021	12.20	0.35	0.097	0.050	0.020	0.024	0.038
<sup>S</sup> M	0.082	0.040	0.010	0.084	0.009	0.001	0.039	0.009	0.003	0.008	0.002	0.006	0.004

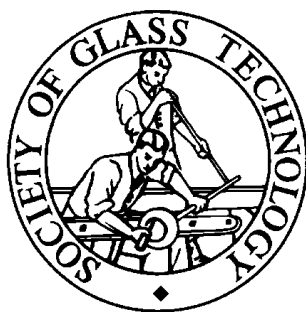
<sup>M</sup>M: Mean of the laboratory means <sup>S</sup>M: Standard deviation of the laboratory means  
The laboratories mean values have been examined statistically to eliminate outlying values.  
Values given above in italic type are for information only.

### Certified Values

Mass content in %

	SiO <sub>2</sub>	Al <sub>2</sub> O <sub>3</sub>	Fe <sub>2</sub> O <sub>3</sub>	CaO	MgO	BaO	Na <sub>2</sub> O	K <sub>2</sub> O	TiO <sub>2</sub>	SO <sub>3</sub>	Cr <sub>2</sub> O <sub>3</sub>
<sup>M</sup> M	72.7-	1.62	0.325	10.7-	1.81	0.02-	12.2-	0.35	0.097	0.05-	0.020
C(95%)+	72.72	1.644	0.332	10.75	1.820	0.022	12.23	0.357	0.099	0.058	0.022
C(95%)-	72.64	1.587	0.317	10.61	1.807	0.020	12.17	0.344	0.095	0.043	0.018

The half-width confidence interval is calculated according to ISO guide 35 1989(E)- section 8:4:4



This reference material was prepared and issued by:  
**THE SOCIETY OF GLASS TECHNOLOGY**  
Unit 9, 12 O'Clock Court  
21 Attercliffe Road  
Sheffield S4 7WW  
Tel: 0114 263 4455  
Fax: 0114 263 4411  
Web address: [www.sgt.org](http://www.sgt.org)  
E-Mail: [standards@glass.demon.co.uk](mailto:standards@glass.demon.co.uk)

November 2000

# The Society of Glass Technology

## PARTICIPATING GROUP

Ceram Research  
Glass Technology Services Ltd.  
Jaspar Analytical & Testing Services  
London & Scandinavian Metallurgical Company Ltd in association with Appleby Calumite Ltd  
Sheffield Hallam University, Materials Research Institute  
Sibelco Minerals and Chemicals (formally Hepworth Minerals & Chemicals Ltd)  
Dr. Paul Watkins- Independent Consultant

## DESCRIPTION OF SAMPLE

This sample is available in the form of glass pieces. It is also available as 40-mm diameter discs.

## INTENDED USE & STABILITY

The sample is intended for the verification of analytical methods, such as those used by the participating laboratories, for the calibration of analytical instruments in cases where the calibration of primary substances (pure stoichiometric compounds) is not possible and for establishing secondary reference materials.

It will remain stable provided that the glass is stored in a cool, dry atmosphere.

The solid disc is intended for establishing and checking the calibration of X-ray Spectrometers for the analysis of similar materials. The "as received" surface should be ground and polished.

## TRACEABILITY

The traceability of this CRM is ensured by the use of either stoichiometric analytical techniques or methods that are calibrated against pure compounds.

## METHODS USED

Presentation	Methods Type and Number	
Fused Bead	X-ray Fluorescence Spectrometry	1
Glass Disc	X-ray Fluorescence Spectrometry	2