U. S. Department of Commerce
Malcolm Baldrige
Secretary

National Bureau of Standards
Ernest Ambler, Director

National Bureau of Standards

Certificate

Standard Reference Material 1412

Multicomponent Glass

(In Cooperation with the American Society for Testing and Materials)

This Standard Reference Material (SRM) is intended for use in performance evaluation of chemical methods of analysis and in calibrating instrumental methods of analysis. The SRM consists of platelets having the composition shown below:

Constituent	Percent by Weight[a]	Uncertainty[b]
SiO_2	42.38	0.18
Al_2O_3	7.52	0.24
CaO	4.53	0.10
MgO	(4.69)	- - - -
SrO	4.55	0.09
Na_2O	4.69	0.07
K_2O	4.14	0.10
Li_2O	(4.50)	- - - -
B_2O_3	4.53	0.17
BaO	4.67	0.16
ZnO	4.48	0.12
PbO	4.40	0.17
CdO	4.38	0.08
Fe_2O_3	(0.031)	- - - -

[a] The certified value listed for a constituent is the present best estimate of the "true" value based on the results of the cooperative program for certification. The values given in parenthesis are not certified and are given for information only.

[b] The estimated uncertainty listed for a constituent is based on judgment and represents an evaluation of the combined effects of method bias, between laboratory variability, and material variability.

The overall direction and coordination of the cooperative analysis leading to certification were performed by G.D. Bowling, Chairman of ASTM Subcommittee C-14.02 on Chemical Analysis of Glass and Glass Products.

The procurement and development of this material as an SRM was under the direction of the joint NBS-ASTM Glass Research Associate Program. This program was coordinated through ASTM by: M.J. Cellarosi, Chairman of ASTM Committee on Glass and Glass Products; H.E. Hagy, Chairman of Subcommittee 14.91 on Standard Reference Materials; and A.C. Seifert, NBS-ASTM Research Associate.

The technical and support aspects involved in the preparation, certification, and issuance of this SRM were coordinated through the Office of Standard Reference Materials by L.J. Kieffer.

Gaithersburg, MD 20899
August 2, 1985

Stanley D. Rasberry, Chief
Office of Standard Reference Materials

This material was tested for homogeneity at NBS by A.F. Marlow and P.A. Pella, Gas and Particulate Science Division, using x-ray fluorescence spectrometry. Four replicate measurements were made on eight elements in each of thirteen samples chosen at random from the lot of material. The results did not indicate any significant heterogeneity among the samples.

This material was batched, melted, ground and formed into plates at Corning Glass Works, Corning, N.Y.

The laboratories submitting data for certification of this SRM were:

Anchor Hocking, Lancaster, OH

Corning Glass Works, Corning, NY

Emhart Materials Testing Laboratory, Windsor, CT

Mobay Chemical Corporation, Baltimore, MD

National Bureau of Standards, Gaithersburg, MD

Owens-Corning Fiberglas, Granville, OH

Owens-Illinois, Toledo, OH

Owens-Illinois, Vineland, NJ