U. S. Department of Commerce Malcolm Baldrige Secretary National Burgay of Standards Ernest Ambler, Director

## National Bureau of Standards

## Certificate

## Standard Reference Material 620

## Soda-Lime Flat Glass

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

This Standard Reference Material is for use in checking chemical methods of analysis and for calibration in optical emission and x-ray spectrometric methods of analysis.

Constituent	Percent, by weight	Uncertainty
$SiO_2$	72.08	0.08
$Na_2O$	14.39	0.06
CaO	7.11	0.05
MgO	3.69	0.05
$Al_2O_3$	1.80	0.03
$K_2O$	0.41	0.03
$SO_3$	0.28	0.02
$As_2O_3$	0.056	0.003
$Fe_2O_3$	0.043	0.004
$TiO_2$	0.018	0.002

The certified values are the present best estimates of the "true" values based on the results of a cooperative analytical program. At NBS, fifteen statistically selected samples of the glass were extensively tested for homogeneity by S. D. Rasberry and C. K. Kim using x-ray fluorescence spectrometry. Based on their results the variations within and among samples are estimated to be less than the uncertainties given above.

The overall direction and coordination of the round-robin analysis leading to certification were performed by Paul Close, Chairman of ASTM Subcommittee C 14.02 on Chemical Analysis of Glass and Glass Products.

The technical and support aspects involved in the preparation, certification, and issuance of this Standard Reference Material were coordinated through the Office of Standard Reference Materials by G. W. Cleek and R. E. Michaelis.

Washington, D.C. 20234 January 13, 1982 (Revision of Certificate dated 5, 17, 72)

George A. Uriano, Chief Office of Standard Reference Materials The material for this standard was prepared and furnished to NBS by American Saint Gobain Corporation (ASG), Jeannette Factory, Pennsylvania.

The following laboratories cooperated in the round-robin chemical analysis of this flat glass:

- G. D. Bowling, Owens-Corning Fiberglass Corporation, Technical Center, Granville, Ohio
- T. O. LaFramboise, Ford Motor Co., Glass Tech. Center, Lincoln Park, Michigan

Walter Gubar, Certain-Teed, Saint Gobain Insulation Corporation, Kansas City, Kansas

J. O. Hibbits, Owens-Illinois, Inc., Technical Center, Toledo, Ohio

Silve Kallman, Ledoux & Co., Teaneck, New Jersey

- H. S. Moser, Owens-Illinois, Inc., Vineland, New Jersey
- B. E. Pugh, Sharp-Schurtz Co., Lancaster, Ohio
- R. E. Robertson, PPG Industries, Pittsburgh, Pennsylvania
- Y. S. Su, Corning Glass Works, Corning, New York
- L. E. Stadler, Emhart Corporation, Hartford Division, Hartford, Connecticut
- K. M. Sappenfield, Analytical Chemistry Division, National Bureau of Standards, Gaithersburg, Maryland