U.S. Department of Commerce
Juanita M. Kreps
Secretary
National Bureau of Standards
Ernest Ambler, Acting Director

National Bureau of Standards Certificate of Analysis

Standard Reference Material 81a

Glass Sand

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

This SRM is issued in the form of a ground powder (95% less than 106 μm) blended to ensure homogeneity. It should be dried for 2 hours at 105 °C before use.

Constituent	Recommended Value Percent by Weight	Range	s
Al_2O_3	0.66	0.62 - 0.69	0.011
Fe_2O_3	.082	.075- .089	.0024
TiO_2	.12	.10 - .14	.0064
ZrO_2	.034	.025- .042	.0026
Cr_2O_3	46 μg/g	33 -58	3.9

Certification - The recommended value listed for each oxide is the best estimate of the true value based on the analytical data from both cooperators and NBS. The range of values listed is the tolerance interval, constructed such that it will cover at least 95% of the population with a probability of 0.99. It is computed as $X \pm Ks$: where s is the standard deviation, K is a factor that depends on n (the number of samples measured), p, the proportion of the total sample covered (95%), and γ, the probability level (99%). In all cases none of the n values used exceeded the range specified. Thus, it includes variability between laboratories and between samples.

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 W. P. Reed.

Washington, D.C. 20234
January, 1978

J. Paul Cali, Chief
Office of Standard Reference Materials

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Chemical analyses for certification were performed in the following laboratories:

Anchor Hocking Corp., Lancaster, Ohio, R. E. Carr
Brockway Glass Co., Inc., Brockway, Pa., E. L. McKinley.
Corning Glass Works, Corning, N.Y., Y. S. Su.
Ford Motor Co., Lincoln Park, Mich., T. O. LaFramboise.
National Bureau of Standards, Analytical Chemistry Division, E. J. Maienthal, J. D. Messman and T. C. Rains.
Kimble Div. Owens-Illinois, Vineland, N. J., H. S. Moser.
Owens-Illinois, Inc., Toledo, Ohio, P. Close.
Penn State Univ., University Park, Pa., J. B. Bodkin.