

# National Bureau of Standards

## Certificate

### Standard Reference Material 1413

#### High Alumina Sand

(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 has the certified chemical composition shown below:

<u>Constituent</u>	<u>Percent by Weight<sup>a</sup></u>	<u>Uncertainty<sup>b</sup></u>
SiO <sub>2</sub>	82.77	0.40
Fe <sub>2</sub> O <sub>3</sub>	0.24	0.01
TiO <sub>2</sub>	0.11	0.02
Al <sub>2</sub> O <sub>3</sub>	9.90	0.13
CaO	0.74	0.04
MgO	0.06	0.01
Na <sub>2</sub> O	1.75	0.06
K <sub>2</sub> O	3.94	0.09
BaO	0.12	0.01

<sup>a</sup>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 certified values listed are on an ignited basis using ASTM Standard C 146 for performing the loss on ignition.

<sup>b</sup>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

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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. Duplicate measurements were made on six elements in each of six samples chosen at random from the lot of material. The results did not indicate any significant heterogeneity among the samples.

The material for this SRM was furnished to NBS by the Santa Cruz Aggregates Company, Felton, CA.

The laboratories submitting data for certification of this SRM were:

Anchor Hocking, Lancaster, OH

Brockway, Brockway, PA

Emhart Materials Testing Laboratory, Windsor, CT

National Bureau of Standards, Gaithersburg, MD

Owens-Corning Fiberglas, Granville, OH

Owens-Illinois, Toledo, OH

Wheaton Glass, Millville, NJ