



National Institute of Standards & Technology

Certificate of Analysis

Standard Reference Material 1883

Calcium Aluminate Cement (Silver Cap)

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

This Standard Reference Material (SRM) is intended for use in checking chemical methods of analysis and in calibrating instruments used in the analysis of these and other materials of a similar matrix. SRM 1883 is a fine powder supplied as a set of 6 sealed vials each containing 5 to 6 grams of cement powder.

The certified value listed for each constituent in the following table is the present best estimate of the "true" value based on the results of the cooperative program for certification.

| <u>Constituent</u> | <u>Certified Value Percent by Weight</u> | <u>Estimated¹ Uncertainty</u> |
|--------------------------------|--|--|
| Al ₂ O ₃ | 71.2 | 0.8 |
| SiO ₂ | 0.35 | 0.03 |
| Fe ₂ O ₃ | 0.08 | 0.02 |
| CaO | 27.8 | 0.5 |
| MgO | 0.29 | 0.05 |
| Na ₂ O | 0.32 | 0.05 |
| K ₂ O | (0.01) ^a | --- |
| TiO ₂ | (0.01) | --- |
| Loss on Ignition | 0.42 | 0.08 |

¹ The estimated uncertainty (in percent by weight) listed for a constituent is based on scientific judgment and represents an evaluation of the combined effects of methods imprecision, possible systematic errors among methods, and material variability.

^a Values in parentheses are not certified, and are given only for the purpose of providing additional information to the user on the composition of the SRM.

The overall coordination of the technical measurements leading to certification was performed under the direction of J.I. Shultz, Research Associate, ASTM/NIST Research Associate Program.

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

Gaithersburg, MD 20899
July 27, 1990
(Revision of certificate dated 7-1-90)

William P. Reed, Acting Chief
Standard Reference Materials Program

(over)

PLANNING, PREPARATION, TESTING, AND ANALYSIS:

The material for this Standard Reference Material was provided by Lone Star Lafarge, Inc. (Lafarge Calcium Aluminates, Inc.) Chesapeake, Virginia, courtesy of C.W. Moore.

Extensive homogeneity testing was performed at the National Institute of Standards & Technology by G.A. Sleater and P.A. Pella, Gas and Particulate Science Division.

The material was thoroughly blended and sieved at NIST and packaged in hermetically sealed glass vials under contract with Construction Technology Laboratories, a division of the Portland Cement Association, Skokie, Illinois.

Cooperative analyses for certification were performed in the following laboratories:

- Aluminum Company of America, Alcoa Technical Center, Alcoa Center, PA, D.J. Levin.
- Kaiser Aluminum and Chemical Corp., Center for Technology, Picasanton, CA, L.R. Barsotti and H.J. Seim.
- Lafarge Coppee Recherche, Vivers, France, R. Montgomery.
- Lehigh Portland Cement Co., Buffington Station, Gary, IN, J.W. Davis.
- Lone Star Lafarge Inc., Norfolk Plant, Chesapeake, VA, C.W. Moore, and M.J. Balok and by I.Z. Somcio, Central Research Laboratory, Houston, Texas.