



# National Institute of Standards & Technology

## Certificate of Analysis

### Standard Reference Material 87a

#### Silicon-Aluminum Alloy

This Standard Reference Material (SRM) is in the form of chips sized between 1.0 and 3.35 mm sieve openings (18 and 6 mesh). It is intended primarily for use in developing and verifying chemical methods of analysis.

| Constituent | Certified Value <sup>1</sup><br>Percent, by Weight | Estimated<br>Uncertainty <sup>2</sup> |
|-------------|--|---------------------------------------|
| Silicon     | 6.24   | 0.03                                  |
| Iron        | 0.61   | .02                                   |
| Nickel      | .57  | .02                                   |
| Magnesium   | .37  | .01                                   |
| Copper      | .30  | .01                                   |
| Manganese   | .26  | .01                                   |
| Titanium    | .18  | .01                                   |
| Zinc        | .16  | .01                                   |
| Chromium    | .11  | .01                                   |
| Lead        | .093   | .005                                  |
| Tin         | .057   | .009                                  |
| Gallium     | .020   | .001                                  |
| Vanadium    | < .01  | ---                                   |

<sup>1</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.

<sup>2</sup> The estimated uncertainty listed for a constituent is based on judgment and represents an evaluation of the combined effects of methods imprecision, possible systematic errors among methods, and material variability. No attempt was made to derive exact statistical measures of imprecision because several methods were involved in the determination of most constituents.

#### PLANNING, PREPARATION, TESTING, ANALYSIS:

The material for this SRM was provided by Aluminum Company of America, Alcoa Research Laboratories, New Kensington, PA.

Homogeneity testing at NIST (NBS) was performed by the Spectrochemistry Section, Division of Chemistry.

Cooperative analyses for certification were performed on composite samples, representative of the lot, in the following laboratories.

- Alcoa, New Kensington, PA
- Apex Smelting Co., Cleveland, OH
- Dow Chemical Co., Midland Division, Midland, MI
- Wm. F. Jobbins, Inc., Aurora, IL
- Kaiser Aluminum & Chemical Corp., Spokane, WA
- Aluminum Laboratories, Ltd., Arvida, Quebec, Canada

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 P.A. Lundberg.

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William P. Reed, Acting Chief  
Standard Reference Materials Program