

U. S. Department of Commerce

C. R. Smith

Secretary

National Bureau of Standards

A. V. Astin, Director

Certificate of Analysis

Standard Reference Material 981 Common Lead Isotopic Standard

Absolute Abundance Ratio, Lead-204/Lead-206	0.059042	± 0.000037
Absolute Abundance Ratio, Lead-207/Lead-206	0.91464	± 0.00033
Absolute Abundance Ratio, Lead-208/Lead-206	2.1681	± 0.0008
Lead-204, atom percent	1.4245	± 0.0012
Lead-206, atom percent	24.1447	± 0.0057
Lead-207, atom percent	22.0827	± 0.0027
Lead-208, atom percent	52.3481	± 0.0086

Standard Reference Material 981 was prepared from commercially available material. It has been purified to at least 99.9 + percent purity, and extruded into wire form. The atomic weight of the material is calculated to be 207.2152 using the nuclidic masses 203.973044, 205.974468, 206.975903, and 207.976650.

Measurements are by triple filament solid-sample mass spectrometry. Mixtures of known $^{208}\text{Pb}/^{206}\text{Pb}$ ratio, prepared from high-purity separated isotope solutions, are used as comparison standards. Overall limits of error are based on 95 percent confidence limits for the mean of the ratio measurements and on allowances for the known sources of possible systematic error. Details of the preparation and measurements are published by E. J. Catanzaro, T. J. Murphy, W. R. Shields, and E. L. Garner, J. Research NBS 72A, No. 3, 261 (1968).

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W. Wayne Meinke, Chief
Office of Standard Reference Materials