National Bureau of Standards
Certificate of Analysis
Standard Reference Material 989
Assay-Isotopic Standard for Rhenium

Absolute abundance ratio, $^{185}Re/^{187}$	0.59738 ± 0.00039
Rhenium - 185, atom percent	37.398 ± 0.016
Rhenium - 187, atom percent	62.602 ± 0.016
Atomic weight	186.20679 ± 0.00031

This Standard Reference Material is supplied as rhenium metal in the form of a ribbon approximately 0.003 cm by 0.076 cm x 1.90 cm. The purity of this metal is 99.9 percent based on impurities detected by isotope dilution spark source mass spectroscopy. The absolute abundance ratio of $^{185}Re/^{187}Re$ was determined by two analysts using two different mass spectrometers. Samples of known isotopic composition, prepared from nearly isotopically pure separated rhenium isotopes, were used to calibrate the mass spectrometers. The indicated uncertainties are overall limits of error based on 95 percent confidence limits for the mean and allowances for the effects of known sources of possible systematic error. The details of the measurements are described in a published paper: J. Res. NBS (U.S.), 77A (Phys. and Chem.), No. 6, 691-698 (Nov.-Dec. 1973).

Mass spectrometric measurements were made by J. W. Gramlich and E. L. Garner on samples prepared by T. J. Murphy.

The overall direction and coordination of the technical measurements leading to certification were under the chairmanship of W. R. Shields.

The technical and support aspects concerning 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
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J. Paul Cali, Chief
Office of Standard Reference Materials