

# Certificate of Analysis

## Standard Reference Material 944

### Plutonium Sulfate Tetrahydrate

This material, plutonium sulfate tetrahydrate, is issued to provide a secondary standard for the assay of plutonium materials. The material was prepared by the New Brunswick Laboratory of the Atomic Energy Commission. The atomic weight of the plutonium is calculated to be 239.076 from mass abundance measurements made at the National Bureau of Standards and the New Brunswick Laboratory.

Assays conducted at the New Brunswick Laboratory and at Los Alamos Scientific Laboratory show that the material is stoichiometric in composition. The value,  $47.50 \pm 0.05$  weight percent of plutonium should, therefore, be used as the effective assay. The indicated tolerance is at least as large as the 95 percent confidence limit for a single determination which includes terms for inhomogeneities in the material as well as analytical error.

Exposure at room temperature to relative humidities of from 0 to 90 % indicate the compound is reasonably stable to moisture within these limits. Exposure at 95 and 100 % relative humidity at room temperature indicates the material absorbs water under these conditions. It should be used with this restriction in handling in mind. The americium content of the compound will increase approximately 15 ppm or less per year due to the decay of plutonium-241, with a corresponding decrease in the plutonium content.

Washington, D. C. 20234  
February 14, 1969

W. Wayne Meinke, Chief  
Office of Standard Reference Materials