S. Department of Commerce
Malcolm Baldrige
Secretary

National Bureau of Standards
Ernest Ambler, Director

National Bureau of Standards

Certificate

Standard Reference Material 4332B

Radioactivity Standard

Radionuclide	Americium-243
Source identification	4332B
Source description	Liquid in a 5-ml flame-sealed glass ampoule
Solution mass	Approximately 5 grams
Solution composition	Americium-243 in 1-molar nitric acid
Reference time	1200 EST, 11 November 1983
Radioactivity concentration	88.82 Bq g^{-1}
Random uncertainty	0.2 percent (1)*
Systematic uncertainty	1.2 percent (2)
Total uncertainty (Random plus systematic)	1.4 percent
Alpha-particle-emitting impurities (Activities at reference time)	^{241}Am: 0.15 ± 0.02 Bq g^{-1} (3)
Measuring instrument	NBS "0.8π"α defined-solid-angle counter with scintillation detector
Half life	7380 ± 40 years (4)

This Standard Reference Material was prepared in the Center for Radiation Research, Nuclear Radiation Division, Radioactivity Group, Dale D. Hoppes, Group Leader.

Washington, D.C. 20234
February, 1984

Stanley D. Rasberry, Chief
Office of Standard Reference Materials

*Notes on back

NOTES

(1) Half the 99-percent confidence interval of the mean (3.355 times the standard deviation of the mean computed from 9 measurements).

(2) Linear sum of estimated uncertainty limits due to:

a) gravimetric measurements	0.1 percent
b) deadtime	0.1 percent
c) background	0.01 percent
d) detection efficiency	0.4 percent
e) count-rate-vs-energy extrapolation to zero energy	0.5 percent
f) impurities	0.1 percent

(3) Average value derived from alpha-particle measurements, performed by two laboratories, and one mass-spectrometric measurement.

(4) Nuclear Data Sheets 33 (1981) p. 100.

For further information contact J.M.R. Hutchinson at (301) 921-2396 or FTS-921-2396.