

National Bureau of Standards Certificate of Analysis Standard Reference Material 2675 Beryllium on Filter Media

This Standard Reference Material is intended primarily for use as an analytical standard for the determination of beryllium in the industrial atmosphere. The SRM consists of a set of three membrane filters upon which have been deposited the indicated quantities of a beryllium salt.

Material	Beryllium, $\mu\text{g}/\text{filter}$	
B 1	0.007	
B 2	0.25	.03
B 3	1.00	.10

The certified values are based upon the determination of the metal content by atomic absorption spectrometry and by spectrofluorometric measurement. In these analyses entire filters were mineralized by digestion in acid prior to measurement. The certified values are the means of those found by the two techniques while the uncertainties represent the 95 percent tolerance limit based on measurement error and variability between samples*.

The filters are identified by the numbers B1, B2, B3 printed on their edge. The metal content of the inked identification is negligible so it need not be removed. An entire filter must be used for each measurement since the beryllium is not uniformly distributed.

The filters were prepared at NBS by R. Mavrodineanu and J. R. Baldwin, using a technique described in NBS Technical Reprint NBSIR-73-256. Atomic absorption analyses were made at NBS by T. C. Rains. S. A. Wicks performed the spectrofluorometric analyses.

The overall direction and coordination of the technical measurements leading to certification was performed under the chairmanship of J. K. Taylor.

The technical and support aspects involved in certification and issuance of this Standard Reference Material were coordinated through the Office of Standard Reference Materials by W. P. Reed.

* See page 14, The Role of Standard Reference Materials in Measurement System, NBS Monograph 148, 1975. The concept of tolerance limit is also discussed in Chapter 2, Experimental Statistics, NBS Handbook 91, 1966.

In brief, if measurements were made on all the units, almost all (at least 95 percent) of these measured values would be expected to fall within the indicated tolerance limits with a confidence coefficient of 95 percent (or probability = .95).