

National Bureau of Standards Certificate of Analysis

Standard Reference Material 2671

Freeze Dried Urine Certified for Fluorine

This Standard Reference Material is intended primarily for use as an analytical standard for the determination of fluoride in urine. This standard consists of two bottles of freeze-dried human urine containing fluoride at low and elevated levels, respectively. The certified values are based on analysis of the reconstituted urine, resulting from addition of 50 ml of pure water to each bottle.

Material	Fluoride, mg F ⁻ /l
Low level	0.835 ± 0.082
Elevated level	7.14 ± 0.48

The certified values are based upon the determination of the fluoride content of samples randomly selected from the lot, by a method utilizing the fluoride ion-selective electrode. Confirmatory analyses were made by photon activation analysis and by spectrophotometric measurement.

The certified values are the means obtained in the measurement of seven samples of low level and six samples of elevated level, respectively, while the uncertainties represent the 95 percent tolerance limits based on measurement errors and variability between samples.*

* 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).

(over)

The Standard Reference Materials should be reconstituted by addition of 50 ml of pure water to each bottle. The water used should be demonstrated not to contain fluoride ion, or suitable blank corrections should be made for its fluoride content. The reconstituted materials may be considered as fresh urine and should be handled under the same conditions as such samples.

The certified values are based upon analyses made at NBS by R. A. Durst. Confirmatory measurements were made by R. M. Lindstrom and by E. R. Deardorff. 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 C. L. Stanley and W. P. Reed.

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J. Paul Cali, Chief
Office of Standard Reference Materials