

8/6/71

Certificate of Analysis

Standard Reference Material 918

Potassium Chloride

(Clinical Standard)

This standard reference material is certified for use in the calibration and standardization of procedures employed in the determination of potassium and chloride ions in clinical analyses. The sample consists of highly purified potassium chloride. Chemical assay as well as analyses for specific impurities indicate that the material may be considered essentially pure, except for moisture due to occlusion.

Purity 99.9 ± 0.0 percent

The above value for the purity of the material is based on a sample dried over magnesium perchlorate for 24 hours. Potassium chloride is hygroscopic when the relative humidity at room temperature exceeds 75 percent, but can be dried to the original weight by desiccation over freshly exposed P_2O_5 or $Mg(ClO_4)_2$ for 24 hours. The material should be stored with such a desiccant. The potassium was determined by a combination of gravimetric and isotope dilution analyses. More than 99 percent of the potassium was precipitated, filtered, and weighed as potassium perchlorate. The weight of potassium perchlorate was corrected for rubidium perchlorate. The soluble potassium was determined by isotope dilution mass spectrometry. Total potassium was the sum of the potassium from the potassium perchlorate and the potassium from the filtrate. The chloride was determined by a coulometric argentimetric procedure.

Based on 12 independent measurements for each ion, the sample was considered homogeneous. Material dried at 500 °C for 4 hours in a platinum or Vycor crucible (Pyrex is unsatisfactory) was assayed at 99.98 ± 0.01 percent. The loss of moisture by this procedure was about 0.07 percent.

The potassium chloride used for this standard reference material was obtained from the J. T. Baker Chemical Company, of Phillipsburg, New Jersey. Analyses were performed by G. Marinenko, T. J. Murphy, T. C. Rains, T. A. Rush, W. P. Schmidt, and V. C. Stewart.

The overall direction and coordination of technical measurements leading to the 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 J. L. Hague.

Washington, D. C. 20234
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J. Paul Cali, Chief
Office of Standard Reference Materials

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