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WS

INDUSTRY STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

WS/T 89-2015

Replacing WS/T 89-1996

Determination of fluoride in urine. Ion selective electrode method

(English Translation)

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This standard replaces WS/T 89-1996 "Determination of fluoride in urine ion-selective electrode method." this standard compared with WS/T 89-1996, the main technical changes are as follows.

--- Modify the method used in deionized water quality in line with GB/T 6682 secondary water specifications;

--- Removed the original standard fluoride total ionic strength adjustment buffer;

--- Modify the original standard method for the use of false urine solution to produce a standard curve, the total ionic strength adjustment buffer directly produced standard Quasi-curve, determination of urinary fluoride content;

--- Modify the sample size determination of urine, reducing the volume of total ionic strength buffer;

--- Removed the original standard of the standard join law.

This standard was drafted. China Center for Disease Control and Prevention endemic control center, Shandong Institute of endemic disease prevention and control, Shanxi Province Disease Prevention Institute, Sichuan Provincial Center for Disease Control and Prevention.

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1 Scope

This standard specifies the method of ion-selective electrode determination of urinary inorganic fluoride content.

This standard applies to the determination of human or animal urine samples of inorganic fluoride content.

2 Principle

The lanthanum fluoride single crystals are selective to fluoride ions and exist between different concentrations of fluoride solution on both sides of the single electrode of lanthanum fluoride electrode Potential difference, commonly known as the membrane potential. The size of membrane potential and fluoride ion activity in the solution, within a certain range of activity, fluoride electrode and calomel Extremely composed of a pair of electrochemical cells electromotive force and fluoride ion activity of the logarithm of a linear relationship between the determination of urine fluoride concentration.

3.1 Reagent requirements

The standard chemical reagents used in addition to sodium fluoride need superior grade pure, other reagents are used analytically pure water used for deionized water (in line with GB/T 6682 secondary water specifications).

3.2 Glacial acetic acid (glacial acetic acid)

rho20 = 1.06 g/mL.

3.3 Sodium hydroxide solution (10mol/L)

Weigh 40g sodium hydroxide (NaOH), dissolved in water, diluted to 100mL.

3.4 Total ionic strength adjustment buffer

Weigh 58g of sodium chloride, 2.94g of sodium citrate (Na3C6H5O7 · 2H2O), dissolved in 600mL of water, added 57mL glacial acetic acid (Glacial acetic acid). Adjust the pH to 5.0-5.5 with sodium hydroxide solution (3.3). Add water to make a volume of 1000 mL.

3.5.1 Fluoride standard stock solution [rhoF- = 1.00 mg/mL]

Accurately weighed to constant weight (105 °C ~ 120 °C drying 2h) 0.2210g of sodium fluoride in a beaker, dissolved in water, the water will be fluorinated all sodium solution was washed into 100mL volumetric flask, fixed volume, shake, transferred to a polyethylene plastic bottle, placed in a refrigerator freezer.

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3.5.2 Fluoride Standard Solution A [rhoF- = 100 μg/mL]

Draw 10.00mL fluoride standard stock solution (3.5.1) in 100mL volumetric flask, diluted with water, dilute to the mark, shake, transfer storage in a polyethylene plastic bottle, placed in a refrigerator freezer. Can also use the national standard samples, obtained fluoride standard solution A.

3.5.3 Fluoride Standard Solution B [rhoF- = 10 μg/mL]

Draw 10.00mL fluoride standard solution A (3.5.2) in 100mL volumetric flask, diluted with water, dilute to the mark, shake,

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