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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB 10735-2008

Primary chemical - Sodium carbonate anhydrous

第一基准试剂 无水碳酸钠

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Table of Contents

Foreword

The standard Chapter 4 5.3.3,

5.3.4.1 are mandatory, other provisions are recommended. This standard replaces GB 10735-1989 "first reference reagent (capacity) of anhydrous sodium carbonate," compared with GB 10735-1989, the major change Of the following.

--- Standard name changed to "first reference reagent anhydrous sodium carbonate";

--- Increasing the normative references (1989 edition Chapter 2, Section 2 of this edition);

--- Modify the description of the determination of the principles of the (1989 version 4.1.1, this version 5.3.1);

--- Modify the constant current coulometric apparatus diagram (1989 version 4.1.3.4, this edition 5.3.2.4);

--- Perfect pre-titration method (the 1989 edition of 4.1.4.2, this edition 5.3.3.3);

--- Modified after introducing nitrogen loading conditions (1989 version 4.1.4.3, this edition 5.3.3.4);

--- Modify the inspection rules (1989 edition Chapter 5, Chapter 6 of this edition);

--- Increasing the content of the calculation method of Uncertainty (Excerpts Appendix B)

was measured;

--- Canceled Appendix B, Appendix C (1989 edition Appendix B, Appendix C). This standard appendix A normative appendix, Appendix B is an informative annex. The standard proposed by China Petroleum and Chemical Industry Association. This standard by the Chemicals Branch of the National Chemical Standardization Technical Committee. This standard is drafted by: China Institute of Metrology, Beijing Institute of Chemical reagents. The main drafters of this standard. FEI brother, Wu Bing, Han Baoying, strong Jing Lin. This standard replaces the standards previously issued as follows:

--- GB 10735-1989. The first reference reagent anhydrous sodium carbonate Molecular formula. Na2CO

3 Molecular Weight. 105.9886 (according to 2005 international relative atomic mass).

1 Scope

China's mandatory national standard for anhydrous sodium carbonate as a primary chemical. Anhydrous sodium carbonate is the primary standard for acid, the counterpart of potassium hydrogen phthalate on the other side of the neutralisation: it is what standardises the hydrochloric and sulfuric acid solutions used in every titration laboratory. Its qualification as a primary standard depends entirely on one thing that has to be done right, and the standard says so - it must be dried to constant weight at around 270 to 300 degrees C to drive off the last water and any bicarbonate, and it must then be kept from the air, because it takes up both moisture and carbon dioxide readily. A sample weighed straight from a bottle left open reads high in mass and low in assay. The standard specifies the requirements, the drying conditions, the assay and the certification of the primary standard grade.

a) high-precision timing constant current source. stability is better than one hundred thousandth of the dynamic characteristics of a good steady flow DC power supply, with 1.0186 x 1.0186 x 10mA and 100mA two output current, the current value is determined by the compensation method; the minimum timing resolution 0.1ms, electricity Flow and timing synchronization is less than 0.1ms.

b) temperature control standard battery pack. should meet the requirements of JJG153. Range 1V, annual variation of less than 5μV.

c) Standard resistance. should meet the requirements JJG116 of. Relative uncertainty is generally not more than 3 x 10-6.

d) direct radiation galvanometer. resistance < 100Omega, critical external resistance < 1000Omega, dividing the value of < 3 x 10-9A.

5.3.2.5 electrolytic cell apparatus (see Figure 2). An anode compartment (left) and a cathode chamber (right side) is made of quartz glass with a diameter of 50mm, 125mm

high cylindrical. With between two chambers Diameter 20mm, length 80mm quartz glass tube level connections in the tube melting inside back cover sheet respectively No. 2,2,3 glass sand core, thus formed Two intermediate chambers each with a branch of the piston, and the pressure by pumping nitrogen gas pressurization method the electrolyte solution out of the intermediate chamber. Two small rooms The distance between the sand core distance 20mm, two large chamber between the sand core is 40mm. Tight pre-treated with a good white port on the anode chamber A rubber plug, the plug is inserted through a glass electrode 2, respectively, a saturated calomel electrode 3, 4 nitrogen inlet, nitrogen outlet pipe 5, a surface area of about 60cm2 platinum mesh anodes 6, the bottom of the anode compartment has a 20mm long was stirred in a sealed Teflon tube about the magnet 9, a polyethylene cover 10 placed in a platinum mesh anode on top. A cathode chamber having a 50mm x 75mm copper as the cathode 8, the bottom agar casting a rubber stopper 7. Electrolytic cell unit on magnetic stirrer workbench.

Note. Preparation of agar rubber stopper Weigh agar 3g, was added 50mL of water, boiling, etc. is added a solution of sodium sulfate (1mol/L) Volume boiled, mixed, cast in the hot cathode chamber bottom. 1

--- white rubber plug; 2

--- glass electrode; 3

--- saturated calomel electrode; 4

--- nitrogen inlet; 5

--- nitrogen outlet pipe; 6

--- platinum mesh anode; 7

--- agar stopper; 8

--- copper cathode; . 9

2 Normative references

The following documents contain provisions which, through reference in this standard and become the standard terms. For dated references, subsequent Amendments (not including errata content) or revisions do not apply to this standard, however, encourage the parties to the agreement are based on research Whether the latest versions of these documents. For undated reference documents, the latest versions apply to this standard.

GB/T 602 Determination of impurities in chemical reagents prepared standard solution (GB/T 602-2002,

ISO 6353-1. 1982, NEQ) with

GB/T 603 chemical reagent test method Preparations of articles (GB/T 603-2002,

ISO 6353-1 with. 1982, NEQ)

GB/T 609 chemical reagent - General method for determination of total nitrogen (GB/T 609-2006, ISO 6353-1. 1982, NEQ)

GB/T 6682 analytical laboratory use specifications and test methods (GB/T 6682-2008, ISO 3696. 1987, MOD)

GB/T 9723-2007 Chemicals flame atomic absorption spectrometry General

GB/T 9728 General method for determination of chemical reagents sulfate (GB/T 9728-2007, ISO 6353-1. 1982, NEQ)

GB/T 9729 General method for determination of chloride Chemicals (GB/T 9729-2007, ISO 6353-1. 1982, NEQ)

GB/T 9734-2008 Determination of aluminum Chemicals general method (ISO 6353-1. 1982, NEQ)

GB/T 9738 Chemicals water insoluble determination General method (GB/T 9738-2008, ISO 6353-1. 1982, NEQ)

GB/T 9739 General method for determination of iron chemical reagents (GB/T 9739-2006, ISO 6353-1. 1982, NEQ)

GB 15346 chemical reagent packaging and marking

3 Characters

This reagent as a white powder, water is exposed to air gradually become a hydrate, soluble in water, soluble in ethanol.

4 Specification

Anhydrous sodium carbonate as shown in Table 1. Table

1 Name the first reference Content (Na2CO3), /% 99.98 ~ 100.02 Clarity test/number <=

5 Test

5.1 Warning Reagents used in this test method are toxic or corrosive, some of the testing process can lead to dangerous situations, the operator should take Appropriate safety and health practices.

5.2 General Provisions Unless specified otherwise in this chapter, the use of reagent purity should be more analytical, standard solution, preparations and products, according to GB/T 602, GB/T 603 provisions of preparation, test water should be consistent with GB/T 6682 specifications in two water samples according to precise weighing 0.01g, used Solution "%"