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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB 1256-2008

Working chemical - Arsenic trioxide

工作基准试剂 三氧化二砷

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Foreword

The standard Chapter 4,

5.2.2 are mandatory, other provisions are recommended. This standard replaces GB 1256-1990 "work reference reagent (capacity) arsenic trioxide," compared with GB 1256-1990, the major change Of the following.

--- Standard name was changed to "work reference reagent arsenic trioxide";

--- Modify the Content Measurement (1990 version 4.1, this version 5.3). The standard proposed by China Petroleum and Chemical Industry Association. This standard by the National Standardization Technical Committee Chemistry Chemicals Branch (SAC/TC63/SC3) centralized. This standard is drafted by: Beijing Institute of chemical reagents. The main drafters of this standard. Han Baoying, strong Jing Lin. This standard replaces the standards previously issued as follows:

--- GB 1256-1977, GB 1256-1990. Working Standard reagent arsenic trioxide Warning. Arsenic trioxide is virulent. Some test procedure specified in this standard can lead to dangerous situations, the user has the responsibility to take appropriate When safety and health measures. Molecular formula. As2O

3 Molecular weight. 197.84 (according to 2005 international relative atomic mass).

1 Scope

China's mandatory national standard for arsenic trioxide as a working chemical. Arsenic trioxide is a primary reducing standard - it standardises iodine and permanganate solutions and is the reference in bromatometry - and it earns that role by being obtainable in high purity, stable, non-hygroscopic and possessing a high equivalent weight, which makes

weighing errors proportionally small. It is also one of the most notorious poisons known, which is the other half of what the standard has to address: the requirements, the packaging and the marking exist as much to control the substance as to certify it. Its use has receded in laboratories that can substitute a less hazardous reductant, but where the highest accuracy is needed in redox standardisation it has no equal. The standard specifies the requirements, the impurity limits and the test methods for the working grade.

This standard specifies the reference work trioxide reagent traits, specifications, testing, packaging and inspection rules and signs. This standard applies to the reference work titration analysis of arsenic trioxide reagent test.

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. Preparation of

GB/T 601 chemical reagent standard titration solution

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 3914-2008 Chemicals General anodic stripping voltammetry

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

GB/T 9729 General method for determination of chloride Chemicals (GB/T 9729-2007, 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 10738 Job reference reagent titration Determination General Weighing

GB 15258 rules for preparation of chemical safety labels

GB 15346 chemical reagent packaging and marking

HG/T 3484 standard chemical reagents glass emulsion and clarity standards

3 Characters

This reagent as a white amorphous crystalline powder, easy sublimation, highly toxic. Slightly soluble in water, soluble in alkali metal hydroxide or carbonate solution.

4 Specification

Arsenic trioxide is as shown in Table 1. Table

5 Test

5.1 General provisions Unless specified otherwise in this chapter, the use of standard titration solution, standard solution, preparations and products, according to GB/T 601, GB/T 602, Regulations preparation, test water should be consistent with GB/T 6682 specifications in three water samples according to precise weighing 0.01g, the use of GB/T 603's Solution "%" are represented by the mass fraction.

5.2 Content Measured according to GB 10738 requirements.

5.2.1 standard iodine titration solution titration standard substance arsenic trioxide Weigh 0.15g standard substance arsenic trioxide in sulfuric acid pre-drier to constant and precise to 0.00001g. Anti-place Should bottle, add 4mL sodium hydroxide solution (40g/L) were dissolved, add 50mL water and 2 drops of phenolphthalein indicator solution (10g/L), with a sulfuric acid solution (5%) and added 3g of sodium bicarbonate and starch indicator solution 3mL (10g/L), titrated with standard iodine solution [Ba (1/2I2) = 0.1mol/L] Titration to the solution was light blue. Weighing standard iodine titration solution should be accurate to 0.0001g. Determination

5.2.2 Content Determination with 5.2.1, sulfuric acid is used instead of the standard sample dryer dried to a constant weight of material. The mass fraction of arsenic trioxide and its value is "%", said press (1) calculated as follows: (1) Where. Content b

--- standard substance arsenic trioxide (mass fraction), the value to "%" means;

5.3 Clarity test Weigh 10g sample plus 35mL and 65mL water, ammonia, dissolved by heating. Turbidity is not greater than HG/T 3484 stipulated Cheng Qing STANDARD No. 2.

5.4 Residue on ignition Weigh 5g sample was placed in 650 °C ± 50 °C constant crucible, heated slowly in a fume hood to complete evaporation of the sample in 650 °C ± 50 °C to constant high temperature furnace burning. The residue mass not greater than 1.0mg. The residue was reserved for the determination of iron.

5.5 Chloride Weigh 0.5g sample, add 3mL aqueous ammonia solution (10%) and 5mL of water, dissolved by heating, cooled, treated with a solution of nitric acid (25%) and (Required To the filter), diluted to 20mL, determined according to the provisions of GB/T 9729's. The turbidity of the solution was not greater than the standard turbidity solution.

Standard preparation turbid solution is to take the ratio of 0.01mg containing chloride (Cl) standard solution was diluted to 20mL, and at the same time with the same volume of test solution Sample processing.

5.6 Sulfide Weigh 1g sample was dissolved in 10mL of sodium hydroxide solution (100g/L), add 0.1mL lead acetate solution (50g/L), and shake. Dissolve The dark liquid form can not be deeper than the standard colorimetric solution. Preparation of the standard developing solution containing 0.001mg is to take the ratio of sulfur (S) standard solution, the same treatment simultaneously with the sample.

5.7 iron The residue on ignition was measured after the residue, add 2mL sulfuric acid solution (20%), in a water bath heated to dissolve the residue was diluted to 75mL, Take 15mL, adjusted with ammonia solution (10%) solution pH to 2, determined according to the provisions of GB/T 9739's. The solution may not be deep red Standard colorimetric solution. Preparation of the standard developing solution containing a ratio is taken of iron (Fe) 0.005mg of standard solution, (20%) was added 0.4mL of sulfuric acid solution, diluted to 15mL, simultaneously with the same volume of the test solution treated similarly.

5.8 copper Determined according to the provisions of GB/T 3914-2008 of.

5.8.1 The measurement conditions Pre-electrolysis potential. -0.8V; Scanning potential range. -0.8V ~ -0.1V; Stripping peak potential. -0.35V.

5.8.2 Determination According to GB/T 3914-2008 specified in

7.2 determination. Wherein. 40mL electrolyte solution is a hydrochloric acid solution [Ba (HCl) = 0.1mol/L]. Preparation of sample solution is weighed 0.2g sample plus 15mL hydrochloric acid solution (20%), slightly hot dissolution, cooling, acid-soluble salt Solution (20%) was diluted to 20mL. Take 10mL, placed in a quartz cuvette and evaporated to dryness in a water trap. Add 30mL tartaric acid solution (75g/L), following the Continued fever 10min, cooled, aqueous ammonia solution was adjusted to pH 8.0 ± 0.1. Results calculated according to the provisions of 7.3.

5.9 Antimony Weigh 0.5g sample plus 50mL hydrochloric acid solution (20%), heat gently to dissolve, cooled, take 5mL, diluted hydrochloric acid solution (20%) to 10mL. Add 0.2mL sodium nitrite solution (100g/L), shake for 2min, add 0.3mL saturated urea solution, cooled to shake No bubbles, diluted to 25mL, plus 5mL of benzene (or toluene) and 0.5mL malachite green solution (2g/L), shaken for 1min. The organic layer The green can not be deeper than the standard colorimetric solution. Preparation of the standard developing solution containing 0.0025mg ratio is taken of antimony (Sb) standard solution was added 10mL of hydrochloric acid solution (20%), with the same volume Solution was treated in the same sample simultaneously.

5.10 Lead Determined according to the provisions of GB/T 3914-2008 of.