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HG

**CHEMICAL INDUSTRY STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

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Sodium methoxide methanol solution for industrial use

工业甲醇钠甲醇溶液

(English Translation)

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Table of Contents

Foreword	3
1 Scope	4
2 Normative references	4
3 Requirements	5
4 Test methods	5
5 Inspection rules	8
6 Marking, packaging, transportation, storage	9
7 Safety	10

1 Scope

This standard specifies the requirements, test methods, inspection rules and signs, packaging, transportation, storage of sodium methoxide methanol solution.

This standard is applicable to the sodium methoxide methanol solution, which is prepared by dehydration of methanol and sodium hydroxide. It is also applicable to the sodium methoxide methanol solution, which is produced by the reaction of methanol and sodium metal.

Molecular formula: CH_3ONa Relative molecular mass: 54.02 (According to the 2007 international relative atomic mass)

2 Normative references

The following documents are essential to the application of this document. For the dated documents, only the versions with the dates indicated are applicable to this document;

for the undated documents, only the latest version (including all the amendments) is applicable to this standard.

GB 190 Packing symbol of dangerous goods GB/T 191 Packaging - Pictorial marking for handling of goods GB/T 601 Chemical reagent - Preparations of standard volumetric solutions GB/T 603 Chemical reagent - Preparations of reagent solutions for use in test methods GB/T 6678 General principles for sampling chemical products GB/T 6680 General rules for sampling liquid chemical products GB/T 6682 Water for analytical laboratory use - Specification and test methods GB/T 8170 Rules of rounding off for numerical values & expression and judgement

4.3.2 Reagents

4.3.2.1

Standard titration solution of hydrochloric acid

$C(\text{HCl}) = 0.5 \text{ mol/L}$.

4.3.2.2

Methyl red indicator solution

1 g/L.

4.3.3 Analytical procedures

Put 50 mL of water in a 250 mL conical flask. Add 3 drops of methyl red indicator solution. Use standard hydrochloric acid titration solution to titrate it, until the solution turns red.

Weigh about 2 g of specimen, accurate to 0.0002 g. Put it in the above bottle. Use standard titration solution of hydrochloric acid to titrate it, until the solution turns red and maintains no discoloration for 15 s, which is taken as the end point.

4.3.4 Result calculation

For the mass fraction w_1 of sodium methoxide, the value is expressed in %, which is calculated according to formula (1):

Where:

V - The value of the volume of the standard hydrochloric acid titration solution, which is consumed by titrating the specimen, in milliliters (mL);

c - The value of the actual concentration of the standard titration solution of hydrochloric acid, in moles per liter (mol/L);

M - The numerical value of the molar mass of sodium methoxide, in grams per mole (g/mol) ($M = 54.02$);

m - The value of the mass of the specimen, in grams (g);

1.35 - The mass ratio of 1 mol sodium methoxide to 1 mol sodium hydroxide;

w_2 - Mass fraction of free base (as sodium hydroxide), which is measured in 4.4.

Take the arithmetic mean of the results of the two parallel determinations, as the determination result. The difference between the two parallel determination results is not more than 0.2%.

4.4.1 Method principle

reaction flask. Use Karl - Fischer reagent, to titrate it to the end point, under stirring (excluding the consumption of Karl - Fischer reagent). Then weigh 1 g ~ 2 g of specimen, accurate to 0.0002 g. Quickly add it into the reaction flask. Use Karl - Fischer reagent, to titrate it under stirring, until the solution changes from pale yellow to amber, which is taken as the end point (OR the end point is determined by potentiometric method).

4.4.4 Result calculation

For the mass fraction w_2 of free base (calculated as sodium hydroxide), the value is expressed in %, which is calculated according to formula (3):

Where:

V - The volume value of Karl - Fischer reagent, which is consumed by titrating the specimen, in milliliters (mL);

T - The value of the titer of Karl - Fischer reagent to water, in grams per milliliter (g/mL);

m - The numerical value of the mass of the specimen, in grams (g);

2.22 - The mass ratio of 1 mol of sodium hydroxide to 1 mol of water.

Take the arithmetic mean of the results of the two parallel determinations, as the determination result. The difference, between the two parallel determination results, is not more than 0.05%.

5.1 All items specified in the requirements of Chapter 3 of this standard are exit-factory

inspection items.

5.2 Take uniform products of the same mass as a batch.

5.3 Each batch of exit-factory products shall have a quality certificate in a certain format, including:

- a) Product name;
- b) The name of the manufacturer;
- c) Date of manufacture or batch number;
- d) Product quality inspection results or inspection conclusions;
- e) No. of this standard.

5.4 Sampling is carried out in accordance with the provisions of GB/T 6678 and GB/T

6680. The sampling amount shall meet the requirements for inspection and sample retention. The samples are equally divided into two parts, which are put into clean and dry fluoride bottles. Label them, indicating the product name, batch number, sampling date, sampling person. One bottle is for inspection AND the other bottle is kept for future reference.

5.5 Judgment of inspection results shall be judged, according to the rounding value

comparison method, which is specified in GB/T 8170. If an index does not meet the requirements of this standard in the inspection results, it shall take samples from double quantity of the number of packages, for re-inspection. Even if one index does not meet the requirements of this standard, in the re-inspection results, the batch of products is unqualified.

6.1 Marking

There shall be firm and clear labels on the packaging container of the product, the contents of which include:

- a) Product name;
- b) The name and address of the manufacturer;
- c) The date of manufacture or batch number;
- d) The net content;
- e) The No. of this standard;
- f) Flammable liquid signs, toxic signs, corrosive items signs in GB 190, as well as fear-of-moisture signs in GB/T 191.

6.2 Packaging

Use clean and dry plastic drums or packaging containers, to pack it, according to the needs of users, under the conditions that meet the requirements of safety.

6.3 Transportation

The product shall be protected from fire, heat, rain, moisture during transportation.