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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB 25538-2010

**National food safety standards of food additives sodium
diacetate**

(English Translation)

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Foreword

Appendix A of this standard is a normative appendix.

National Food Safety Standard Food additive sodium diacetate

1 Scope

This standard applies to acetic acid and sodium carbonate by the reaction of food additive sodium diacetate.

2 Normative references

The standard file referenced in the application of this standard is essential. For cited documents with dates, only the date of Version applies to this standard. For undated references, the latest edition (including any amendments) applies to this standard.

3 Formula and relative molecular mass

Formula 3.1

$C_4H_7NaO_4 \cdot xH_2O$

3.2 Relative molecular mass

142.09 (anhydrous) (according to 2007 international relative atomic mass)

4 Technical Requirements

4.1

Sensory requirements. comply with Table 1.

Table 1 Sensory requirements

Project requires test methods Color White take appropriate sample is placed in a clean, dry white porcelain dish, natural Light, observe its color and texture, and smell its flavor. Smell of acetic acid taste Hygroscopic crystalline solid state organization

4.2

Physical indicators. to comply with Table 2.

Table 2. Physical and chemical indicators

Item Index Test Method Free acetic acid (dry basis), w /% 39.0 ~ 41.0 Appendix A A.3 Sodium acetate (dry basis), w /% 58.0 ~ 60.0 Appendix A A.4 pH 4.5 ~ 5.0 in Appendix A A.5 Water, w /% ≤ 2.0 GB/T 6283a Easy oxides, w /% ≤ 0.2 A.6 in Appendix A Lead (Pb) (mg/kg) ≤ 2 GB 5009.12 a sample weight of 1 g ~ 2g.

Appendix A

(Normative)

Testing method

A.1 General Provisions Unless otherwise indicated in the analysis using only recognized as analytical reagents and GB/T 6682-2008 specified in the water. In the analysis Standard titration solution, impurities measured by standard solution, preparations and products, did not indicate when the other requirements, according to GB/T 601, GB/T 602, the provisions of preparation GB/T 603's. This solution was used in the test does not indicate what is formulated with solvent, it refers to an aqueous solution.

A.2 Identification Test A.2.1 take platinum wire dipped in hydrochloric acid and the colorless flame, dipped into the sample combustion in a colorless flame, the flame that was Bright yellow.

A.2.2 The sample was dubbed an aqueous solution of 100mg/mL of sulfuric acid and ethanol with a total heat generated when the special smell of ethyl acetate. Specimen in case of a neutral aqueous solution of ferric chloride solution (90g/L), dark red.

A.3 Determination of free acetic acid A.3.1 Reagents and materials

- a) sodium hydroxide standard titration solution. $c(\text{NaOH}) = 1\text{mol/L}$.
- b) phenolphthalein indicator solution. 10g/L.

A.3.2 Analysis step

Weigh about 4g sample (accurate to 0.000 1g), placed in 250mL conical flask, add 50 mL of water, the sample is completely dissolved. plus Into 2 drops of phenolphthalein indicator solution, titration with sodium hydroxide standard titration solution to light red, do not fade is the end maintained 30s. Write down what you consume Number of milliliters of sodium hydroxide standard titration solution.

A.3.3 Calculation Results Content of free acetic acid according to formula (A.1) calculations.

() 1001m

06,005.0

cVX% (A.1)

Where.

X1- free acid content (dry basis),% ;.

Volume V1- sample consumption of sodium hydroxide standard titration solution, in milliliters (mL);

C- actual concentration of sodium hydroxide standard titration solution, expressed in moles per liter (mol/L);

Quality 0.06005-- and 1.00mL sodium hydroxide standard titration solution [c (NaOH) = 1.00mol/L] equivalent in grams of acetic acid the amount;

m1- sample mass, in grams (g).

X0-- content measured sample moisture% Test results parallel arithmetic mean of the measurement results shall prevail. The difference between the two parallel determination results is not more than 0.2%.

A.4 Determination of sodium acetate A.4.1 automatic potentiometric titration method (method a) A.4.1.1 Reagents and materials

a) potassium hydrogen phthalate. reference reagents.

b) glacial acetic acid.

c) perchloric acid standard titration solution. c (HClO₄) = 0.1mol/L, according to the method (a method) GB/T 601-2002 stipulated in preparation, Calibration of press.

Weigh about 0.36g (accurate to 0.000 1g) at 105 °C ~ 110 °C oven dried to constant weight basis of potassium hydrogen phthalate reagent, Titration cell in a dry, 40mL of glacial acetic acid was added and stirred to dissolve. Good perchloric acid solution was titrated with standard volumetric preparation, electricity Titration instrument determine the endpoint.

The arithmetic mean of two parallel determination results of the measurement results. At the same time record perchloric acid standard titration solution temperature value t.

Titration according to formula (A.2) to automatically calculate the concentration of perchloric acid standard titration solution.

c HClO x

1000m

Where.

c (HClO₄) - perchloric acid concentration calibration standard titration solution, expressed in moles per liter (mol/L);

Quality m₂-- potassium hydrogen phthalate, in grams (g);

V₂-- consumption of perchloric acid standard titration solution volume in milliliters (mL);

M-- molar mass of potassium hydrogen phthalate, in units of grams per mole (g/mol) [M (KHC₈H₄O₄) = 204.22].

The difference between the two parallel determination results is not more than 0.2%.

A.4.1.2 instruments and equipment

a) potentiometric titrator. automatic titrator or other instruments rather precision.

b) Composite glass electrode. non-aqueous acid-base titration glass electrode, Ag/AgCl or calomel electrode as a reference, the measuring range $\pm 2050.0\text{mV}$, resolution of 0.1mV, maximum permissible error of 0.1%. Or other electrode considerable precision.

A.4.1.3 analysis step A.4.1.3.1 ready Temperatures when perchloric acid standard titration solution should be the same as when the temperature calibration, if the temperature is not the same, it should be standard perchloric acid droplets the concentration of the solution given by equation (A.3) to amend concentrations temperature, and enter the instrument.

c₁ (HClO₄) = (0011.01 1 t_t - x (A.3) where.

When c₁-- perchlorate standard titration solution concentration, expressed in moles per liter (mol/L);

c-- calibration concentration at a temperature of perchloric acid standard titration solution, expressed in moles per liter (mol/L);

0.0011-- perchloric acid standard titration solution volume expansion coefficient for each 1 °C change when;

Temperature t₁-- standard titration using perchloric acid solution, in degrees Celsius (°C);

t-- calibration temperature perchloric acid standard titration solution, expressed in degrees Celsius (°C).

A.4.1.3.2 Determination Weigh about 0.25g sample (accurate to 0.0001g), in a dry titration cup, add 40mL glacial acetic acid, and stirred to dissolve, this is the test solution. Titration with perchloric acid standard solution titration of the sample solution, potentiometric titrator determine the endpoint.

A.4.1.4 Calculation Results the content of sodium acetate according to formula (A.4)