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

GB/T 19464-2014

Replacing GB/T 19464-2004

Alkyl polyglycosides

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12.5 Free total fatty alcohol /% <= 0.5 0.6

Appendix A

Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009. This standard replaces GB/T 19464-2004 "alkyl glycoside". The main changes of this standard compared with GB/T 19464-2004 are as follows:

- Increased classification requirements for alkyl glycoside products (see Chapter 3);
- Increased the technical indicators of alkyl glycosides for cosmetics, and specified the corresponding analytical methods (see 4.2);
- Revised the sulphated ash indicator (see 4.1,.2004 edition 4.3);

--- Revised the viscosity index and the measured temperature of the C12-14 alkyl glycoside viscosity (see 4.1,.2004 edition 4.3);

--- Modified the detection method of alkyl glycoside polymerization degree and residual total fatty alcohol content (see

5.6 and 5.8,.2004 editions

--- Modified the detection method of the alkyl glycoside pH value, extending the pH range of the product (see 5.4,.2004 version 5.5). This standard was proposed by the China National Light Industry Council. This standard is under the jurisdiction of the National Standardization Committee for Surfactants and Detergents (SAC/TC272). This standard was drafted. Shanghai Fakai Chemical Co., Ltd., Nanjing Jinling Petrochemical Research Institute Co., Ltd., Shenzhen Changyuan Jiachuan Material Co., Ltd., Infinitus (China) Co., Ltd., Zhejiang Zanyu Technology Co., Ltd., Yangzhou Chenhua Technology Group Co., Ltd., Table Surfactant and Detergent Industry Productivity Promotion Center. The main drafters of this standard. Feng Yu, Wang Fengshou, Zhou Yucheng, He Jianghuai, Dong Wantian, Deng Wei, Huang Yaru, Yu Zizhou, Huo Shuwen, Li Yong, Hao Qiaolin. The previous versions of the standards replaced by this standard are.

---GB/T 19464-2004. Alkyl glycoside

1 Scope

China's national product standard for alkyl polyglycosides - the non-ionic surfactants made from sugar and fatty alcohol, known in the trade as APG. It specifies the classification, the technical requirements, the test methods, the inspection rules, and the marking, packaging, transport, storage and shelf life, and it applies to industrial APG produced by the direct synthesis route and by the transglycosidation route, for use in detergents, personal care, agricultural emulsions and textile processing, where they wet, emulsify, penetrate and foam. It does not apply to blended products or to C16 to C18 alkyl polyglycosides used as emulsifiers. APG occupies a particular position among surfactants because both halves of the molecule come from renewable feedstock - glucose from starch and the fatty alcohol from vegetable oil - and because it is readily biodegradable and unusually mild on skin. That combination is why it displaced harsher non-ionics in personal care and in mild household cleaners, and it is sold on precisely those grounds, which means the specification has to support them. The requirements cover the active content, which is the basis of the price; the alkyl chain length distribution and the average degree of polymerisation of the glucose units, which together determine whether the product is a wetter, a foamer or an emulsifier, since APG properties shift sharply with both; the pH and the colour, both of which move if the product has been thermally abused, since APG darkens and the colour is a direct indication of handling; the free fatty alcohol and residual glucose; the viscosity, since APG is supplied as a concentrated aqueous paste whose handling depends on it; and the ash and water content. The shelf life clause is in the standard because the product is a solution that

degrades. Issued on 12 December 2014 and in force since 1 June 2015, it replaces GB/T 19464-2004.

This standard specifies the classification, technical requirements, test methods, inspection rules and signs, packaging, and transportation of alkyl glycoside products (referred to as APG). Loss, storage, shelf life. This standard is applicable to the industrial products of alkyl glycoside produced by direct method and glycosidic exchange method, and can be applied to washing, daily chemical, agricultural milk, textile, etc. Multi-field, play the role of washing, emulsifying, penetrating, foaming and so on. This standard does not apply to any compounded product or C16~18 based alkyl glycoside product used as emulsifier.

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only dated versions apply to this article. Pieces. For undated references, the latest edition (including all amendments) applies to this document.

GB/T 6682 Analytical laboratory water specifications and test methods

GB/T 3143 Liquid chemical product color determination method (Hazen unit - platinum-cobalt color number)

GB/T 8170 Data Rounding Rules and Representation and Determination of Limit Values

GB/T 9722 chemical reagent gas chromatography general rule

GB/T 15357 surfactant and detergent rotary viscometer for measuring the viscosity of liquid products Cosmetics Hygiene Regulations Wei Weifa [2007] No. 1

3 Product name, classification and structural formula Alkyl glycosides can be divided into two types according to the production process, namely direct process products and exchange process products. Direct method product means life An alkyl glycoside prepared by the glycosidation reaction of a target high-carbon fatty alcohol and a saccharide raw material without producing a low-carbon glycoside during production. The product does not contain a lower alkyl glycoside. The exchange method product means that a low-carbon fatty alcohol (such as butanol) reacts with a raw material of a saccharide compound to form a low-carbon sugar. The glycoside, which is then produced, is exchanged with the target high-carbon fatty alcohol to form the target alkyl glycoside. These two steps can be followed by It can also be carried out simultaneously, and the product contains a part of low-carbon alkyl glycosides. The structural formula of the alkyl glycoside molecule is as follows (R is C8~18, n=1~10. In the exchange method product, R is C2 or C3 or C4, etc. Lower alkyl glycoside; direct process products do not contain lower alkyl glycosides).

4 Technical requirements

4.1 Physical and chemical indicators of alkyl glycosides The physicochemical indicators of

alkyl glycosides should meet the requirements of Table 1. Table

1 Index requirements for alkyl glycosides project Direct method product indirect method product First-class product, second-class product, qualified product, first-class product, second-class product, qualified product Exterior Colorless liquid or Paste, no different Constant smell Colorless or light yellow Liquid or paste, No abnormal smell Colorless liquid or Paste, no different Constant smell Yellow liquid or Paste, no different Constant smell Color (aqueous solution of isopropanol)/Hazen ≤ 50 100 - 50 150 - Solid content /% ≥ 50 50 pH ≥ 7.0

5 Test methods

Unless otherwise stated, only analytically pure reagents and tertiary water specified in GB/T 6682 were used in the analysis.

5.1 Appearance, smell Sensory measures the appearance and odor of the sample.

5.2 Color

5.2.1 Principle The alkyl glycoside sample is formulated into a solution using a mixed solvent of isopropyl alcohol and water, and the solution is in a transparent state at a pH of 7, and The standard platinum-cobalt color code is used for visual colorimetry, and the Hazen value of the standard platinum-cobalt color code closest to the product color is the color of the product.

5.2.2 Instruments General laboratory equipment and the following instruments.

5.2.2.1 Spectrophotometer, wavelength range 380nm~800nm;

5.2.2.2 Nessler colorimetric tube, 50mL.

5.2.3 Reagents 5.2.3.1 40% aqueous solution of isopropanol (volume fraction), measure 40 mL of isopropanol, dilute to 100 mL with water, and shake well. 5.2.3.2 1mol/L nitric acid solution, measure 65mL of nitric acid, dilute to 1000mL with water, and mix.

5.2.4 Preparation of standard colorimetric liquid According to the provisions of GB/T 3143, a series of platinum-cobalt standard colorimetric liquids with different Hazen values are prepared for determining the color of the sample.

5.2.5 Preparation of test solution Weigh 30g of sample (weighed to 0.1g), add 45mL of 40% isopropanol aqueous solution (5.2.3.1) into the measuring cylinder, stir to dissolve, and prepare Solution. Insert the pH electrode into the test solution, add 1mol/L nitric acid solution (5.2.3.2) dropwise, and adjust the pH value to 6.8~. 7.0. Take 50 mL of the test solution in a colorimetric tube, observe it vertically downward from the top of the cuvette, compare it with an equal volume of standard colorimetric solution, and test The Hazen value of the standard colorimetric liquid closest to the color of the test is the color of the