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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 17830-2017

Replacing GB/T 17830-1999

Determination of polyethylene glycol content in nonionic ethoxylated surfactants -- HPLC method

聚乙氧基化非离子表面活性剂中聚乙二醇含量的测定 高效液相色谱法

(English Translation)

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This standard replaces GB/T 17830-1999 "Polyethoxylated nonionic surfactant in the determination of polyethylene glycol content of high-performance liquid Phase chromatography. " this standard compared with GB/T 17830-1999, the main technical changes are as follows.

--- Liquid chromatography detector used by the refractive index detector instead of evaporative light scattering or electric fog detector (see 6.2, 1999 edition 4.5);

--- The mobile phase consists of a single composition of mixed solvent constant flow to a solvent gradient [see 5.5 and 8.1.1, 1999 edition of 5.1b)];

--- Removed the pre-treatment requirements when the moisture content of the analyte is too high (1999 version 5.2).

This standard uses redrafted Law Amendment uses ISO 16560:2015 "Polyethoxylated nonionic surfactant Determination of polyethylene glycol content of high performance liquid chromatography. " this standard compared with ISO 16560:2015 in the structure of the following adjustments.

--- Deleted the ISO 16560:2015 5.4 helium provisions, the standard 5.4 and 5.5 corresponding to ISO 16560:2015 of 5.5 and 5.6.

This standard compared with ISO 16560:2015 there are technical differences, the provisions of these differences have been passed in the outer margin of the page margin Set the vertical single (|) were marked in Appendix A is given a list of the corresponding technical differences and their causes.

This standard also made the following editorial changes.

--- Removed the ISO 16560:2015 informative Appendix A;

--- Modify the standard name;

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--- 8.1.1 Medium Gradient description to tabular form.

This standard proposed by the China Light Industry Federation.

This standard by the National Surfactants and Detergents Standardization Technical Committee (SAC/TC272) centralized.

This standard was drafted unit. In the light of Technology Co., Ltd., China Daily Chemical Industry Institute [National Quality Supervision, Inspection and cleaning supplies Center (Taiyuan)], Guangzhou Blue Moon Industrial Co., Ltd., Xi'an Kai Mi Co., Ltd.

1 Scope

This standard specifies the determination of the formula R- (O-C2H4) nOH polyethoxylated fatty alcohol and polyethoxylated alkylphenol (wherein n Refers to the average EO Addition number) of polyethylene glycol (PEG) content of high performance liquid chromatography.

This standard applies to soluble in methanol or methanol/water (80/20, volume ratio) of ethoxylation products, suitable for determination of PEG content greater than or equal to 0.1% of the sample (samples with excessively high content require proper dilution).

This standard does not apply to the determination of the molar mass of less than 400g/mol of polyethylene glycol, nor is it suitable for ethylene glycol, diethylene glycol, triethylene bis Determination of alcohol and glycerol.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version applies to this article Pieces. For undated references, the latest edition (including all amendments) applies to this document.

GB/T 6379.2 accuracy of measurement methods and results (accuracy and precision) Part 2. Determination of standard measurement methods repeated Sex and reproducibility of the basic method (GB/T 6379.2-2004, ISO 5725-2:1994, IDT) GB/T 6682 analytical laboratory water specifications and test methods (GB/T 6682-2008, ISO 3696:1987, MOD) GB/T 13173 Surfactant Detergent Test Method (GB/T 13173-2008, ISO 607:1980, ISO 2996.) 1974, MOD)

3 Terms and definitions

The following terms and definitions apply to this document.

Polyethylene glycol content the amount of polyethylene glycol contained in the sample size, expressed in mass fraction, calculated from the standard curve.

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4 Principle

The mobile phase consisted of C18 silica-bonded phase, methanol/water (volume ratio) = 80/20, and the ethoxylated nonionic surface the active agent is separated by high performance liquid chromatography, the higher polarity of the polyethylene glycol is eluted first, and then the main component of the surfactant is fractionated from. Detection of PEG by evaporative light scattering (ELSD) or electrospray (CAD) detection is not subject to volatility such as solvents Material disturbance. The sample was dissolved in 80/20 (by volume) or other appropriate ratio of methanol/water mixture, the sample was measured, recorded Retention time and peak area of PEG, determined by external standard method using PEG with molar mass equal to 1000 g/mol as standard Measurement.

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