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

GB/T 33388-2016

**Plastics -- Determination of phenolic resin compositions --
Liquid chromatography**

塑料 酚醛树脂组分的测定 液相色谱法

(English Translation)

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Table of Contents

Foreword

1 Scope

2 Normative reference documents

3 Terms and definitions

Foreword

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

This standard uses the re-drafting method to modify the use of ISO 11401.:1993 "plastic phenolic resin by liquid chromatography separation." There are technical differences between this standard and ISO 11401.:1993, and the terms involved in these differences have been passed through their margins in the outer margin the vertical single line (|) is marked.

The main technical differences between this standard and ISO 11401.:1993 are as follows.

--- on the normative reference documents, this standard has made a technical differences in the adjustment to meet China's technical conditions, adjust the situation the situation is reflected in Chapter 2, "Normative references", as follows.

Replace ISO 472. 1988 with GB/T 2035-2008 equivalent to international standard;

Use ISO 10082.:1999 instead of ISO 10082.:1991.

In the test conditions to increase the note "In order to obtain better test results, recommend the use of column thermostat, the temperature selection 35 °C ~ 40 °C.

(See 4.1.5,4.2.5,4.3.5); because the original international standard for the 1993 edition, by the technical level of chromatography is defined as "room temperature", now Chromatography development, usually using a column oven to control the test temperature.

For ease of use, this standard has been modified as follows.

--- According to the national standard name requirements and Chinese habits, the standard name will be changed to "plastic phenolic resin component determination liquid color Spectrum method";

--- convert "Å" to "nm".

This standard is proposed by the China Petroleum and Chemical Industry Association.

This standard by the National Plastics Standardization Technical Committee Thermosetting

Plastics Subcommittee (SAC/TC15/SC11) centralized.

The drafting of the standard units. Shandong Shengquan New Materials Co., Ltd., in the blue morning Chemical Research and Design Institute Co., Ltd., Shanghai Europe and Asia Into the material Co., Ltd., Changshu Southeast Plastic Co., Ltd., Shaxian Hongsheng Plastic Co., Ltd., in the blue dawn of Chengdu Detection Technology Co., Ltd.

East Health Technology Co., Ltd., Jiangsu Zhongpeng New Materials Co., Ltd., Wuxi Year of Electronics Co., Ltd.

1 Scope

This standard specifies the method of separating phenolic resin components by liquid chromatography. The method of component separation is mainly based on the molecular weight and /or the polarity of each component.

There are three main liquid chromatography.

Method A - gel permeation chromatography;

Method B - polar column high performance liquid chromatography Method C - non - polar column high performance liquid chromatography.

Method A (gel permeation chromatography), the different molecular weight components of the phenolic resin can be separated because of the size of the molecular size and only small molecular weight components such as free phenol and dihydroxydiphenylmethane (thermoplastic resin) and various hydroxymethylphenol (thermosetting resin) to be completely separated, the high molecular weight component can only be partially separated due to the presence of numerous isomers therein.

Method B and Method C (High Performance Liquid Chromatography) were separated by the molecular size and polarity of the components in the phenolic resin. Method B is in the polarity of the column is mainly separated by the molecular weight, and the method C is mainly separated by polarity on the nonpolar column. These two methods can be low molecular weight Components for quantitative analysis. Due to the different solubility of the resin, the method B is suitable for the thermoplastic resin, and the method C is suitable for the thermosetting resin.

This standard applies to phenolic resins that are soluble in solvents and mixed solvents.

This standard can be used for product characterization and some related research work.

2 Normative reference documents

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

GB/T 2035-2008 Plastics terminology and definitions (ISO 472.:1999, IDT) Plastics - Phenolicresins-Definitions and - Plastics - Phenolicresins - Definitions and test methods

3 Terms and definitions

The following terms and definitions apply to this document.

Phenolic resin Usually by phenol, homologues and/or derivatives, with aldehydes or ketones polycondensation of a class of resin.

[GB/T 2035-2008, definition 2.682] 3.2 Linear phenolic resin novolak the molar ratio of formaldehyde to phenol is less than 1. 1. Usually maintaining a thermoplastic phenolic resin, which is the same amount of compound that provides bridge bonds (e.g., Formaldehyde or hexamethylenetetramine) to produce non-frit.

[GB/T 2035-2008, definition 2.645] See also "novolaks" in ISO 10082.