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

GB/T 33315-2016

Plastics -- Phenolic resins -- Determination of the gel time

塑料 酚醛树脂 凝胶时间的测定

(English Translation)

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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 ISO 9396.:1997 "plastic phenolic resin with automatic analyzer to determine the conditions Gel time of thermosetting phenolic resin ".

There is a technical difference between this standard and ISO 9396.:1997, and the terms involved in these differences have been passed through the margin the vertical single line (|) is marked.

The main technical differences between this standard and ISO 9396.:1997 are as follows.

- the scope of application of the corresponding test method has been added to the "scope" in Chapter 1; since this standard has increased the domestic general test method Law A);
- a manual test method has been added (see Chapter 2); this method is the current domestic common test method;
- Removed the International Standard Chapter 2, "Sample Preparation", by adding "sample" requirements to the two test methods (see 2.3, 3.3);
- the precision in the international standard is indicated in Appendix A and the corresponding description in the standard provisions (see 3.5); because method B is not Inter - laboratory data
- "Test report" to increase the requirements of the selection method [see Chapter 4 b)]; because this standard adds method A.

This standard has also made the following editorial changes.

- Method B "Operation steps" Added the bar number.

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., beads Sea elephant abrasive Co., Ltd., Zaoyang Tiancheng Friction Material Co., Ltd., Ningbo Dahua Wheel Co., Ltd.

1 Scope

This standard specifies the use of Method A, Method B for the determination of phenolic resin at a given temperature of 100 ° C, 130 ° C and 150 ° C under specified conditions.

Glue time of the two methods.

This method is applicable to liquid thermosetting resins. Method B is suitable for liquid thermosetting resins and low melting solid thermosetting resins.

This standard does not apply to powdery resins with short gel times, such as mixtures of thermoplastic resins and hexamethylenetetramine. This kind of resin is under test the tube begins to melt on the cross, and becomes too sticky, can not give meaningful results. This standard is particularly not suitable for containing a large number of low boiling Point solvent. These resins are accompanied by boiling and evaporation during curing.

The gel time of the resin in the presence of the catalyst is determined and the catalyst should be added in the appropriate proportions and the catalyst used is indicated in the test report the type and handling of the situation.

2.1 Principles

The test tube was placed in an oil bath and the liquid thermosetting phenolic resin was stirred in a test tube with a stainless steel bar until the resin became a gel Need time.

2.2 Instruments

2.2.1

thermostatic bath. the maximum temperature of.200 °C, the selected test temperature control accuracy of ± 0.5 °C. The density of the bath (eg silicone oil) should be $1 \text{ g/cm}^3 \pm 0.1 \text{ g/cm}^3$.

2.2.2

anti-mouth test tube. diameter $10\text{mm} \pm 0.2\text{mm}$, length $77\text{mm} \pm 2\text{mm}$.

2.2.3

stainless steel rods. diameter $1.2\text{mm} \pm 0.1\text{mm}$, about 130mm.

2.2.4

stopwatch, the accuracy of 1s.

2.2.5

iron frame and supporting test tube clip.

2.2.6

disposable syringes.

2.3 Samples

The sample should be sealed to save, 8h can be stored at room temperature, long time should be stored at $0\text{ }^{\circ}\text{C} \sim 10\text{ }^{\circ}\text{C}$ cold storage. Test samples do not need Pretreatment, used directly for testing.

2.4 Steps

2.4.1

Determination of two parallel samples, or in accordance with the relevant parties to negotiate more parallel samples.

2.4.2

According to the relevant parties agreed, the test temperature should be $100\text{ }^{\circ}\text{C}$, $130\text{ }^{\circ}\text{C}$ or $150\text{ }^{\circ}\text{C}$.