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

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Replacing GB/T 15595-1995

**Polyvinyl chloride resins - Test methods for the thermal stability
- Whiteness method**

聚氯乙烯树脂 热稳定性试验方法 白度法

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Polyvinyl Chloride Resins - Test Methods for the Thermal Stability - Whiteness Method

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Polyvinyl Chloride Resins - Test Methods for the Thermal Stability - Whiteness Method

Caution: Some of the test procedures specified in this Standard may lead to dangerous situations. 1 Scope

This Standard specifies a test method for characterizing the thermal stability of powdered polyvinyl chloride resin by measuring its whiteness after heating in a thermal test chamber under specified conditions. This Standard applies to the determination of the thermal stability of powdered polyvinyl chloride resin.

2 Principle

Polyvinyl chloride resin undergoes a decomposition reaction at high temperatures, resulting in a decrease in whiteness. Different samples exhibit varying whiteness under the same heating conditions, reflecting differences in heat resistance. Based on this characteristic,

this Standard uses a thermal test chamber to measure the whiteness of specimens after heating under specified conditions. The measured results can be used as a relative comparison value of the thermal stability between samples under specified conditions.

3 Instruments 3.1 Whiteness meter, which shall meet the following conditions: a) The illumination and detection conditions of the measuring system are d/0 or other structures conforming to the International Commission on Illumination (CIE) specifications. The measured whiteness is R 457 whiteness; b) The spectral characteristics of the measuring system are: Main peak wavelength 457 nm, half-peak width 44 nm; c) The minimum reading of the instrument is 0.1%, and the repeatability is $\leq 0.5\%$.

3.3 Specimen bottle (or weighing bottle), phi 70 mm x 35 mm, without cap; uniform wall thickness; mass (45 ± 5) g.

3.4 Balance, accurate to

0.1 g.

3.5 Test sieve, sieve aperture size

0.250 mm.

3.6 Sample spoon (or stainless-steel soup spoon).

4 Protective Measures

When handling specimen bottles (or turntables) in the thermal test chamber, wear protective equipment to prevent burns.

5 Test Procedure 5.1 Preparation of test materials

The heating temperature and time of the specimen shall be as specified in the product standard or agreement.

5.1.1 Weigh (9.5~10.5) g of specimen and spread it evenly at the bottom of the specimen bottle.

5.1.2 After the thermal test chamber reaches the specified temperature, open the chamber door and quickly place the specimen bottle on the turntable inside the chamber. At this time, the vertical distance between the upper surface of the specimen bottle and the thermometer shall be 1 cm. Immediately close the door and start timing; while simultaneously starting the turntable. The temperature difference between that in the chamber and the specified temperature should not exceed 5 °C; and the temperature shall reach the specified temperature within 2 min. NOTE: If multiple specimens are to be tested at the same time, for the convenience of handling the specimen bottles, the specimen bottles containing the specimens can be placed on the turntable outside the thermal test

chamber and fixed with clamps. After opening the chamber door, they can be placed inside the chamber together.

5.1.3 After ± 5 s of the specified heating time, turn off the turntable and remove the specimen bottle. Immediately use a sample spoon to break any clumps of specimen in the bottle into powder; sieve; and then test.

--- The End ---

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