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

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**Plastics -- Polyether polyols -- Part 5: Determination of acidity
as acid number**

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(English Translation)

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1 Scope

1.1

The test method specified in this Part of GB/T 12008 is used to determine the acidic components in polyether polyols, and the result is expressed in acid number. The typical acid number (calculated by the amount of consumed KOH) ranges from 0 to 0.1 mg/g.

1.2

This Part does not involve any safety issues associated with the application. Before use, the user is responsible for establishing appropriate safety and health measures and determining the scope of application of management restrictions.

2 Normative References

The clauses of the following documents become clauses of this Part through the reference in this Part of GB/T 12008. In terms of references with a specified date, all subsequent amendments (excluding corrected content) or revisions are not applicable to this Part. However, all parties that reach an agreement in accordance with this Part are encouraged to explore the possibility of adopting the latest editions of these documents. In terms of

references without a specified date, the latest edition is applicable to this Part.

ASTM D 883 Standard Terminology Relating to Plastics

ASTM E 691 Standard Practice for Conducting an Interlaboratory Study to Determine the Precision of a Test Method

3 Terms and Definitions

What is determined in ASTM D 883, and the following terms and definitions are applicable to this Part.

3.1 Acid Number

Acid number refers to the number of milligrams of potassium hydroxide required to neutralize the acidic components in 1 g of specimen.

4 Principle

The specimen is dissolved in isopropanol. Take phenolphthalein as an indicator. At room temperature, use 0.02 mol/L potassium hydroxide - methanol standard titration solution to titrate to the end point of the indicated color change (pink).

NOTE: phenolphthalein is selected as the indicator, because the published hydroxyl value determination method includes acid number correction. For some special acids, other indicators may also be selected. The bromothymol blue indicator (the end point of titration is green) is applicable to strong acids ($\text{pK}_a \leq -4$). The thymolphthalein indicator (the end point of titration is blue) is applicable to weak acids ($\text{pK}_a > -7$).

5 Importance and Application

The test method of this Part is applicable to the quality control of product inspection and scientific research. The acid number indicates the degree of neutralization reaction between the polyol and the acid. The acid number of the same batch of specimens determined by this method may be used as a correction factor to calculate the hydroxyl value.

6 Interference

Dark specimens may interfere with or hinder the application of this method.

7 Instruments

7.1

Burette

10 mL, manual or automatic.

7.2

Measuring cylinder

100 mL.

7.3

Balance

Accurate to 0.1 mg.

7.4

Conical flask

At least 250 mL.

7.5

Stirring rod.

8 Reagents and Materials

8.1

Reagent purity

Potassium hydroxide is of top-grade purity; isopropanol and methanol are of analytical purity.

8.2

Isopropanol.

8.3

Phenolphthalein indicator solution

1 g of phenolphthalein is dissolved in 100 mL of methanol.