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

GB/T 12008.7-2025

**Plastics - Polyether polyols for use in the production of
polyurethane - Part 7: Determination of basicity**

塑料 聚氨酯生产用聚醚多元醇 第7部分：碱性物质含量的测定

(English Translation)

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Foreword

This document was drafted in accordance with the rules given in GB/T 1.1-2020

"Directives for standardization - Part 1.Rules for the structure and drafting of standardizing documents".

This document is Part 7 of GB/T 12008 "Plastics -- Polyether polyols for use in the production of polyurethane". The following parts of GB/T 12008 have been published.

- Part 1.Designation system;
- Part 2.Specification;
- Part 3.Determination of hydroxyl number;
- Part 4.Determination of sodium and potassium;
- Part 5.Determination of acidity as acid number;
- Part 6.Determination of degree of unsaturation;
- Part 7.Determination of basicity.

The modification of this document adopts ISO 14899.2022 "Plastics -- Polyols for use in the production of polyurethane -- Determination of basicity".

This document has the following structural adjustments compared to ISO 14899.2022.

- In Chapter 7, 7.1 and 7.2 are added corresponding to 7.1 in ISO 14899.2022; 7.2 in ISO 14899.2022 is deleted.

The technical differences between this document and ISO 14899.2022 and their reasons are as follows.

- Changed "polyether polyols in the range of 0 µg/g to 50 µg/g (expressed as KOH)" to "polyether polyols in the range of 0 CPR units to 26.7 CPR units" (see Chapter 1) to facilitate the application of this document;
- Replaced ISO 6353-1, ISO 6353-2 and ISO 6353-3 by the normative reference GB/T 601. "All reagents shall comply with the specifications of ISO 6353-1, ISO 6353-2 and ISO 6353-3, but other grades may be used, provided that it is first determined that the reagents have a high enough purity to allow their use without reducing the accuracy of the determination" was changed to "The grade of the reagents used shall be analytically pure or above, and the preparation and calibration of the standard titration solution shall be carried out in accordance with the provisions of GB/T 601" (see 7.1) to adapt to China's technical conditions and improve operability;
- Replaced ISO 3696 (see 7.1) by the normatively referenced GB/T 6682 to adapt to China's technical conditions and improve operability;
- Deleted the reagent "potassium hydrogen phthalate", which is the reference reagent for the calibration of sodium hydroxide standard titration solution and is not used in this method;
- Changed the accuracy requirement of the electronic balance from "1 mg" to "0.1 mg" (see 8.3) to ensure the accuracy of sample mass weighing;
- Changed the setting of the automatic potentiometric titrator from "the maximum titration volume is set to 5 mL" to "the recommended setting value is shown in

Annex A" (see 9.1) to improve the repeatability and reproducibility precision of the method;

- Added the expression of alkalinity value in $\mu\text{mol/g}$ and the calculation formula (see 10.3) to improve the characterization method of alkaline substance content;
- Add regulations on the number of parallel determinations and the number of digits to be retained (see 10.4) to ensure that the results are expressed accurately and uniformly;
- Changed the repeatability precision from 0.2 CPR unit to 0.20 CPR unit (see 11.1.2), and the reproducibility precision from 0.6 CPR unit to 0.60 CPR unit (see 11.1.3) to make them consistent with the number of digits retained in the results;
- Added "Alkalinity value is 0.38 $\mu\text{gKOH/g}$ or 0.007 $\mu\text{mol/g}$ " (see 11.1.2) and "Alkalinity value (in terms of KOH) is 1.13 $\mu\text{g/g}$ or 0.02 $\mu\text{mol/g}$ " (see 11.1.3) to improve the precision requirements;
- Supplemented the test report with the method of expressing the content of alkaline substances. "or expressed as the number of micromoles of alkaline substances per gram of sample, in $\mu\text{mol/g}$ " (see Chapter 12), to make it consistent with the supplementary method of characterizing the content of alkaline substances.

The following editorial changes were made to this document.

- To be consistent with the scope of the standard, the name of the standard is changed to "Plastics -- Polyether polyols for use in the production of polyurethane -- Part

7 Determination of basicity";

- The contents of the titration curve notes are supplemented. The instructions for removing false equivalence points are added (see Note 9.5);
- The explanation of the meaning of constants 1000 and 30 in formula (1) is supplemented (see 10.1);
- The explanation of the meaning of constant 56.1 in formula (2) is supplemented (see 10.2);
- NOTE 2 is added to explain the verification test data of this document (see 11.1.1);

- Annex A (informative) "Recommended values for automatic potentiometric titrator parameter settings" is added.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. The issuing authority shall not be held responsible for identifying any or all such patent rights.

This document was proposed by China Petroleum and Chemical Industry Federation.

This document shall be under the jurisdiction of National Technical Committee on Plastics of Standardization Administration of China (SAC/TC 15).

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Main drafters of this document. Xu Jun, Li Xueqing, Zhao Zilong, Liu Yanhua, Jin Meijin, Zhan Xiaotong, Shi Dandan, Zhang Dahua, Xu Jinfang, Qian Cuihua, Li Zeyong, Zhao Baocheng, Feng Lei, Wang Tai, Chen Hongqiong, Jia Shiqian, Gu Shenggang, Xu Xinxin, Wei Qiong, Zhao Zhong, Zhang Xinzhaoh, Chen Qiaojian, Zhang Xiaohui, Yin Yanhong, Ju Weitan.

1 Scope

This document describes a method for determining the amount of trace alkalinity in polyether polyols used in polyurethane production. Knowledge of the amount of trace alkalinity in polyether polyols is important for preventing gelation of the reaction mass