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Plastics — Polyols for use in the production of polyurethanes — Determination of basicity

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Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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This document was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 12, *Thermosetting materials*.

This second edition cancels and replaces the first edition (ISO 14899:2001), of which it constitutes a minor revision. The changes are as follows:

— the title has been changed to plural form to read: "Plastics — Polyols for use in the production of polyurethanes — Determination of basicity".

Any feedback or questions on this document should be directed to the user’s national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

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Introduction

This method is for the determination of trace amounts of basicity in polyether polyols, which are used in the preparation of polyurethane prepolymers and polyurethane products. Knowledge of this value is important to prevent gelation during prepolymer production and to control reaction rates during polyurethane preparation. The method, known as the controlled polymerization rate (CPR) analysis, has become an accepted industry practice, a version of which has been published as part of JIS K 1557.

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Plastics — Polyols for use in the production of polyurethanes — Determination of basicity

WARNING — Persons using this document should be familiar with normal laboratory practice. This document does not purport to address all of the safety problems, if any, associated with its use. It is the responsibility of the user to establish appropriate safety and health practices prior to the application of this standard.

1 Scope

This document specifies a method for the measurement of trace amounts of basic materials present in polyether polyols used in the production of polyurethanes. It is important to know the trace amount of basicity in a polyol to prevent gelation of the reaction mass during the production of polyurethane prepolymers. It is also useful to control the basicity in polyols used for polyurethane production to assure consistent and reproducible reaction behaviour. This method is suitable for quality control, as a specification test and for research.

The applicable range is 0 µg to 50 µg/g, expressed as KOH. The method is not applicable to amine-based polyols. The values can be reported as CPR (controlled polymerization rate) units.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 3696, *Water for analytical laboratory use — Specification and test methods*

ISO 6353-1, *Reagents for chemical analysis — Part 1: General test methods*

ISO 6353-2, *Reagents for chemical analysis — Part 2: Specifications — First series*

ISO 6353-3, *Reagents for chemical analysis — Part 3: Specifications — Second series*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1
polyurethane
polymer prepared by the reaction of an organic di- or polyisocyanate with compounds containing two or more hydroxyl groups

3.2
CPR value
controlled polymerization rate value
number of microequivalents of base in a 30 g test portion of polyol (i.e. meq of base in 30 kg of polyol)

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