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Plastics — Aromatic isocyanates for use in the production of polyurethanes — Determination of the isomer ratio in toluenediisocyanate (TDI)

Plastiques — Isocyanates aromatiques pour utilisation dans la production de polyuréthannes — Détermination du rapport des isomères dans le diisocyanate de toluène (TDI)

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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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For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

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

This third edition cancels and replaces the second edition (ISO 15064:2010), which has been technically revised.

The main changes compared to the previous edition are as follows:

— a NOTE has been added to 6.2;

— the testing temperature has been added in Clause 8.

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Plastics — Aromatic isocyanates for use in the production of polyurethanes — Determination of the isomer ratio in toluenediisocyanate (TDI)

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 of this document to establish appropriate safety and health practices and to ensure compliance with any national regulatory conditions prior to use.

1 Scope

This document specifies methods for the measurement of toluene-2,6-diisocyanate in mixtures of the 2,4- and 2,6-isomers. Two methods based on infrared spectroscopy are used to give accurate results over a broad range of isomer concentrations. Method A is applicable to toluenediisocyanate (TDI) samples containing between 5 % and 95 % of the 2,6-isomer. Method B is applicable to TDI samples containing 0 % to 5 % of the 2,6-isomer. Both methods are based on the quantitative measurement of absorption bands arising from out-of-plane C–H deformation vibrations of the aromatic ring at 810 cm^{-1} and 782 cm^{-1} (12,3 µm and 13,8 µm).

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 648, *Laboratory glassware — Single-volume pipettes*

ISO 4787, *Laboratory glassware — Volumetric instruments — Methods for testing of capacity and for use*

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

3 Terms and definitions

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

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

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

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

3.1
isomer
compound having the same percentage composition and molecular mass as another compound, but differing in chemical structure and properties

3.2
isomer content
amount of an *isomer* (3.1) expressed as a mass percentage of the total isomer amount

3.3
polyurethane
polymer prepared by the reaction of an organic di- or polyisocyanate with compounds containing two or more hydroxyl groups

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