
**Plastics — Aromatic isocyanates for
use in the production of polyurethanes
— Determination of total chlorine**

*Plastiques — Isocyanates aromatiques utilisés pour la production de
polyuréthanes — Dosage du chlore total*



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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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 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.

The committee responsible for this document is ISO/TC 61, *Plastics*, Subcommittee SC 12, *Thermosetting materials*.

This second edition cancels and replaces the first edition (ISO 26603:2008), of which it constitutes a minor revision. The changes compared to the previous edition are as follows:

- a key has been added to [Figure 1](#).

Introduction

Isocyanates are typically produced by phosgenation of an aromatic amine using chlorine-substituted benzenes (e.g. o-dichlorobenzene) as reaction solvents. ISO 15028 is used to determine the hydrolyzable chlorine content of the isocyanates. The test methods in this document are used to determine the total chlorine content of aromatic isocyanates. The difference between the total chlorine content and the hydrolyzable chlorine content is a measure of the reaction solvents left in the product, and therefore is a useful tool for assessing product quality.

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SAFETY PRECAUTIONS — Persons using this document should be familiar with normal laboratory practice, if applicable. This document does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user to establish appropriate safety and health practices and to ensure compliance with any regulatory requirements.

1 Scope

This document specifies the determination of the total chlorine content of aromatic isocyanates used in the preparation of polyurethanes. The difference between the total chlorine content and the hydrolyzable chlorine content (see ISO 15028) is a measure of the process solvents left in the product. Both test methods are applicable to a variety of organic compounds, including aliphatic isocyanates, but the amount of sample used might need to be adjusted. These test methods can be used for research or for quality control.

NOTE This document is technically equivalent to ASTM D4661-03.

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 6353-2, *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 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

isocyanate

organic compound containing one or more NCO groups

3.2

polyurethane

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

3.3

hydrolyzable chlorine

organic or inorganic chlorine compounds formed in the production of isocyanates that react with methanol under the conditions of ISO 15028 to liberate hydrogen chloride