

---

---

**Plastics — Polyurethane raw materials —  
Determination of isocyanate content**

*Plastiques — Matières premières des polyuréthannes — Détermination  
de la teneur en isocyanate*



**PDF disclaimer**

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

© ISO 2006

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office  
Case postale 56 • CH-1211 Geneva 20  
Tel. + 41 22 749 01 11  
Fax + 41 22 749 09 47  
E-mail [copyright@iso.org](mailto:copyright@iso.org)  
Web [www.iso.org](http://www.iso.org)

Published in Switzerland

## Contents

Page

Foreword.....	iv
1 Scope .....	1
2 Normative references .....	1
3 Terms and definitions.....	2
4 Principle .....	2
5 Application .....	2
6 Interferences .....	2
7 Sampling.....	3
8 Test conditions .....	3
9 Reagents.....	3
10 Apparatus .....	4
11 Method A — Toluene/dibutylamine with aqueous HCl .....	4
12 Method B — Toluene/TCB/DBA with methanolic HCl .....	7

## 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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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

ISO 14896 was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 12, *Thermosetting materials*.

This second edition cancels and replaces the first edition (ISO 14896:2000), of which it constitutes a minor revision the purpose of which was to combine the standard with its Technical Corrigendum ISO 14896:2000/Cor.1:2005.

# Plastics — Polyurethane raw materials — Determination of isocyanate content

**SAFETY STATEMENT** — 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 International Standard specifies two methods for the measurement of the isocyanate content of aromatic isocyanates used as polyurethane raw materials. Method A is primarily applicable to refined toluene diisocyanate (TDI), methylene-bis-(4-phenylisocyanate) (MDI) and their prepolymers. Method B is applicable to refined, crude or modified isocyanates derived from toluene diisocyanate, methylene-bis-(4-phenylisocyanate) and polymethylene polyphenylisocyanate. It can also be used for isomer mixtures of toluene diisocyanate, methylene-bis-(4-phenylisocyanate) and polymethylene polyphenylisocyanate. Other aromatic isocyanates may be analysed by this method if precautions are taken to verify suitability. It is not applicable to blocked isocyanates.

## 2 Normative references

The following referenced documents are indispensable for the application 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 385, *Laboratory glassware — Burettes*

ISO 648, *Laboratory glassware — One-mark pipettes*

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

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

ISO 4788, *Laboratory glassware — Graduated measuring cylinders*

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*

ISO 14898:1999, *Plastics — Aromatic isocyanates for use in the production of polyurethane — Determination of acidity*