



SLOVENSKI STANDARD
SIST EN ISO 9369:1999

01-maj-1999

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Plastics - Basic materials for polyurethanes - Pure isocyanates - Analysis of isocyanate groups (ISO 9369:1997)

Kunststoffe - Ausgangstoffe für Polyurethane - Reine Isocyanate - Analyse der Isocyanatgruppen (ISO 9369:1997)

Plastiques - Matieres de base pour polyuréthannes - Isocyanates purs - Analyse des groupes isocyanates (ISO 9369:1997)

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EUROPEAN STANDARD

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NORME EUROPÉENNE

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April 1997

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English version

**Plastics - Basic materials for polyurethanes - Pure
isocyanates - Analysis of isocyanate groups
(ISO 9369:1997)**

Plastiques - Matières de base pour polyuréthanes - Isocyanates purs - Analyse des groupes isocyanates (ISO 9369:1997) **IT&T STANDARD PREVIEW** Kunststoffe - Ausgangstoffe für Polyurethane - Reine Isocyanate - Analyse der Isocyanatgruppen (ISO 9369:1997)

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REPUBLIKA SLOVENIJA
MINISTRSTVO ZA ZNANOST IN TEHNOLOGIJO
Urad RS za standardizacijo in meroslovje
LJUBLJANA

SIST... EN ISO 9369

PREVZET PO METODI RAZGLASITVE

-05- 1999

This European Standard was approved by CEN on 1997-03-19. CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

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CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

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Foreword

The text of the International Standard ISO 9369:1997 has been prepared by Technical Committee ISO/TC 61 "Plastics" in collaboration with Technical Committee CEN/TC 249 "Plastics", the secretariat of which is held by IBN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by October 1997, and conflicting national standards shall be withdrawn at the latest by October 1997.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

Endorsement notice

The text of the International Standard ISO 9369:1997 was approved by CEN as a European Standard without any modification.

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INTERNATIONAL
STANDARD

ISO
9369

First edition
1997-04-15

**Plastics — Basic materials for
polyurethanes — Pure isocyanates —
Analysis of isocyanate groups**

*Plastiques — Matières de base pour polyuréthannes — Isocyanates
purs — Analyse des groupes isocyanates*

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Reference number
ISO 9369:1997(E)

ISO 9369:1997(E)**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.

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.

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International Standard ISO 9369 was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 12, *Thermosetting materials*.

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International Organization for Standardization
Case postale 56 • CH-1211 Genève 20 • Switzerland
Internet central@iso.ch
X.400 c=ch; a=400net; p=iso; o=isocs; s=central

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Introduction

The following types of isocyanate are commonly used in the industry as basic materials for polyurethanes:

- isocyanates purified by rectification and their prepolymers (in particular pure TDI — a mixture of the 2,4- and 2,6- isomers of tolylene diisocyanate) to which this International Standard is applicable;
- non-rectified isocyanates such as unrefined MDI [methylene di-(4-phenylisocyanate)], or modified isocyanates such as isocyanates containing adducts like carbodiimide adducts (e.g. uretonimine) and phenol adducts for which the method specified will have to be modified. These modifications will depend on the particular products concerned and require agreement between purchaser and manufacturer:

- for some isocyanates, such as modified isocyanates, the temperature of reaction with di-*n*-butylamine will have to be chosen to ensure that complete conversion of the isocyanate groups occurs (the “hot” method);
- for unrefined samples, which generally contain acidic materials, the results must be corrected for any acidic materials present in the unrefined samples since the method involves an acid-base titration.

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Plastics — Basic materials for polyurethanes — Pure isocyanates — Analysis of isocyanate groups

WARNING — Isocyanates shall be handled with care. Inhalation shall be avoided. Persons handling these chemicals shall wear safety glasses and gloves, and the workplace shall be well ventilated.

1 Scope

This International Standard specifies a method for the analysis of the isocyanate groups in pure isocyanates (in particular pure TDI and pure MDI) and their prepolymers.

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2 Normative reference

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The following standard contains provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent edition of the standard indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 760:1978, *Determination of water — Karl Fischer method (General method)*.

3 Definitions

For the purposes of this International Standard, the following definitions apply:

3.1 isocyanate concentration: The amount of isocyanate in a product, expressed in one of the following three ways:

3.1.1 isocyanate equivalent: The number of isocyanate (NCO) groups per kilogram of product (for calculation, see 8.1).

3.1.2 isocyanate percentage: The percentage by mass of a specific pure isocyanate compound in a product (for calculation, see 8.2).

3.1.3 isocyanate-group percentage: The percentage by mass of the isocyanate (NCO) groups in a product (for calculation, see 8.3).