

**Surface active agents - Determination of hydroxyl value - p-Toluensulfonyl isocyanate (TSI) method and potentiometric titration with tetrabutylammonium hydroxide**

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## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 15168:2007 sisaldab Euroopa standardi EN 15168:2006 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 29.01.2007 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 15168:2007 consists of the English text of the European standard EN 15168:2006.</p> <p>This document is endorsed on 29.01.2007 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p><b>Käsitlusala:</b> This European Standard specifies a method for the determination of hydroxyl value of aliphatic and cyclic hydroxyl compounds with hydroxyl groups attached to primary and secondary carbon atoms. This European Standard is applicable to polyacetals, temperature sensitive materials, high solids polymer polyols and rigid polyols and phenols.</p>	<p><b>Scope:</b> This European Standard specifies a method for the determination of hydroxyl value of aliphatic and cyclic hydroxyl compounds with hydroxyl groups attached to primary and secondary carbon atoms. This European Standard is applicable to polyacetals, temperature sensitive materials, high solids polymer polyols and rigid polyols and phenols.</p>
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Võtmesõnad:

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English Version

## Surface active agents - Determination of hydroxyl value - p-Toluensulfonyl isocyanate (TSI) method and potentiometric titration with tetrabutylammonium hydroxide

Agents de surface - Détermination de l'indice d'hydroxyle - Méthode à la p-toluènesulfonylisocyanate (TSI) et titrage potentiométrique avec l'hydroxyde de tétrabutylammonium

Grenzflächenaktive Stoffe - Bestimmung der Hydroxylzahl - p-Toluolsulfonylisocyanat-(TSI-) Verfahren und potentiometrische Titration mit Tetrabutylammoniumhydroxid

This European Standard was approved by CEN on 6 October 2006.

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.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



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## Foreword

This document (EN 15168:2006) has been prepared by Technical Committee CEN/TC 276 "Surface active agents", the secretariat of which is held by AFNOR.

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 May 2007, and conflicting national standards shall be withdrawn at the latest by May 2007.

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

## 1 Scope

This European Standard specifies a method for the determination of hydroxyl value of aliphatic and cyclic hydroxyl compounds with hydroxyl groups attached to primary and secondary carbon atoms.

This European Standard is applicable to polyacetals, temperature sensitive materials, high solids polymer polyols and rigid polyols and phenols.

This European Standard is not suitable for determination of hydroxyl groups attached to tertiary carbon atoms.

NOTE This method is currently recommended for neutral refined products. However for products that contain an excess of acidic species a validation should be carried out to show that the acidic species either does not interfere or that the acidic species interference has been obviated.

## 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.

EN ISO 3696, *Water for analytical laboratory use — Specification and test methods (ISO 3696:1987)*

ISO 607, *Surface active agents and detergents — Methods of sample division*

## 3 Terms and definitions

For the purposes of this document, the following term and definition applies.

### 3.1

#### hydroxyl value, *OHV*

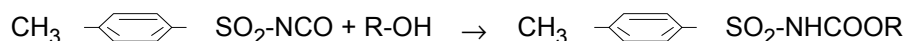
number of milligrams of potassium hydroxide corresponding to the hydroxyl groups in 1 g of material

## 4 Principle

A known mass of test sample is reacted with an excess of p-toluenesulfonyl isocyanate to form an acidic carbamate. Water is added to convert un-reacted isocyanate to sulfonamide followed by direct potentiometric titration of the acidic carbamate with tetra-n-butyl ammonium hydroxide in non-aqueous medium.

The reactions occurring are as follows:

- a) formation of acidic carbamate;



- b) hydrolysis of the excess of isocyanate;

