Pulps - Determination of acetone-soluble matter (ISO 14453:2014)

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NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 14453:2014 sisaldab Euroopa standardi EN ISO 14453:2014 inglisekeelset teksti.	This Estonian standard EVS-EN ISO 14453:2014 consists of the English text of the European standard EN ISO 14453:2014.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 02.04.2014.	Date of Availability of the European standard is 02.04.2014.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

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English Version

Pulps - Determination of acetone-soluble matter (ISO 14453:2014)

Pâtes - Détermination des matières solubles dans l'acétone (ISO 14453:2014)

Faserstoff - Bestimmung acetonlöslicher Bestandteile (ISO 14453:2014)

This European Standard was approved by CEN on 15 February 2014.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Foreword

This document (EN ISO 14453:2014) has been prepared by Technical Committee ISO/TC 6 “Paper, board and pulps” in collaboration with Technical Committee CEN/TC 172 “Pulp, paper and board” the secretariat of which is held by DIN.

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of an identical text or by endorsement, at the latest by October 2014, and conflicting national standards shall be withdrawn at the latest by October 2014.

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

This document supersedes EN ISO 14453:1998.

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

Endorsement notice

The text of ISO 14453:2014 has been approved by CEN as EN ISO 14453:2014 without any modification.

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Introduction

The amount of acetone-soluble matter in pulp provides a measure of the content of wood extractives, often called resin. The acetone-soluble matter includes fatty acids, resin acids, fatty alcohols, sterols, diglycerides and triglycerides, steryl esters and waxes.

In addition, acetone extracts of mechanical pulps may also contain phenolic compounds such as lignans. In the case of incompletely washed chemical pulps, the acetone extracts will also include dissolved kraft lignin.

Metal soaps of fatty and resin acids, such as those present in unwashed or deinked pulp, are not extracted under the conditions specified in this International Standard.

Pulps — Determination of acetone-soluble matter

1 Scope

This International Standard describes the determination of acetone-soluble matter in pulp.

It is applicable to all types of pulp. The lower limit of the determination is about 0,05 %. This limit can be lowered by increasing the amount of sample analysed.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 7213, *Pulps — Sampling for testing*

ISO 638, *Paper, board and pulps — Determination of dry matter content — Oven-drying method*

3 Terms and definitions

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

3.1
acetone-soluble matter
amount of material that can be extracted with acetone from a sample of pulp by the method specified in this International Standard

4 Principle

A pulp sample is extracted with acetone in a Soxhlet apparatus (Option A) or in a Soxtec®[1)] apparatus or similar extraction equipment (Option B).

NOTE Extraction with a Soxtec® apparatus is carried out with boiling solvent instead of condensed solvent as is the case with the Soxhlet extraction. The main advantages of the Soxtec® system are much shorter extraction times and recovery of the main portion of the solvent[1] [2]. Other extraction methods, such as Accelerated Solvent Extraction (ASE), can produce different results and are not within the scope of this International Standard[2]. As reported in Reference [2] and based on several interlaboratory studies[3], including that reported in Annex A, no statistically significant differences were found between the two extraction methods.

After extraction, the solvent is evaporated and the residue is dried at a temperature of 105 °C.

The content of acetone-soluble matter is reported as a percentage of dry pulp.

5 Reagent

5.1 Acetone (CH_3COCH_3), analytical reagent grade.

WARNING — Acetone is a highly flammable material; therefore only approved electric or steam heating shall be used. The entire procedure must be performed in a chemical fume hood and the

1) Soxtec® is an example of a suitable product available commercially. This information is given for the convenience of users of this document and does not constitute an endorsement by ISO of the product named. Equivalent products may be used if they can be shown to lead to the same results.