

STN	Buničina, papier a lepenka. Stanovenie ftalátov v extrakte z papiera a lepenky. Doplnkový prvok.	STN EN 16453 50 7007
------------	---	--

Pulp, paper and paperboard - Determination of phthalates in extracts from paper and paperboard

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Obsahuje: EN 16453:2014

119041

Úrad pre normalizáciu, metrológiu a skúšobníctvo SR, odbor SÚTN, 2014
Podľa zákona č. 264/1999 Z. z. v znení neskorších predpisov sa môžu slovenské technické normy rozmnožovať a rozširovať iba so súhlasom Úradu pre normalizáciu, metrológiu a skúšobníctvo SR.

ICS 67.250; 85.060

English Version

Pulp, paper and paperboard - Determination of phthalates in extracts from paper and paperboard

Pâtes, papier et carton - Dosage des phtalates dans des extraits de papier et carton

Zellstoff, Papier und Karton - Bestimmung von Phthalaten in Papier- und Kartonextrakten

This European Standard was approved by CEN on 9 November 2013.

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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of 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 United Kingdom.



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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents	Page
Foreword.....	3
1 Scope	4
2 Normative references	4
3 Principle	5
3.1 General.....	5
3.2 Interferences	5
4 Materials	5
4.1 General.....	5
4.2 Pasteur pipettes	6
4.3 Double mark glass pipette of 0,05 ml, 0,2 ml, 0,5 ml, 1 ml, 5 ml and 10 ml	6
4.4 Volumetric flasks of 5 ml, 10 ml, 50 ml and 100 ml	6
4.5 Screw-cap glass bottle PYREX of 250 ml with a Polytetrafluorethylene-septa cap	6
4.6 Graduated cylinder of 200 ml	6
4.7 Round flask of 50 ml and 250 ml	6
4.8 Glass funnel	6
4.9 Polytetrafluorethylene-screw-cap glass vial single use (capacity adapted to the volume of concentrate)	6
5 Apparatus	6
5.1 Balance: capable of accurately weighing 0,000 1 g	6
5.2 Round flask heater.....	6
5.3 Rotary vacuum evaporator	6
5.4 Gas chromatograph coupled to a mass spectrometer (GC-MS).....	6
6 Reagents	6
6.1 General.....	6
6.2 Operating gases for gas chromatography/mass spectrometry, of high purity and in accordance with manufacturer's specifications.....	6
6.3 Ethyl acetate, C ₄ H ₈ O ₂ , CAS N° 141-78-6	6
6.4 Isooctane, C ₈ H ₁₈ , CAS N° 540-84-1.....	6
6.5 Internal standard stock solution: For example d4-ring-deuterated-dibutyl phthalate (D4-ring-DBP) at 10 g/l.....	6
6.6 Stock solutions of individual phthalate at 1 000 mg/l in ethyl acetate	7
7 Sampling	7
8 Preparation of the test sample of water extract	8
9 Preparation of the test sample of the organic solvent extract.....	8
10 Preparation of the test sample of the MPPO Extract	8
11 Procedure	8
11.1 GC conditions	8
11.2 Calibration	9
11.3 Analysis of test samples	9
12 Expression of results	10
12.1 For organic solvent extract: Expression of results.....	10
12.2 For MPPO extract: Expression of results.....	10
13 Test report	10
14 Precision data	11
Annex A (informative) GC-MS total ion chromatogram of a standard calibration solution of 2 mg/l of phthalates.....	12

Foreword

This document (EN 16453:2014) has been prepared by 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 July 2014, and conflicting national standards shall be withdrawn at the latest by July 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.

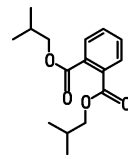
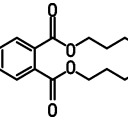
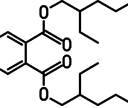
According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany,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

1 Scope

This European Standard specifies an analytical test method for the determination of phthalates in water, solvent and modified polyphenylene oxide (MPPO) extracts of paper and board materials and articles intended for food contact using gas chromatography coupled to mass spectrometry (GC-MS).

This method is applicable to the determination of phthalates in concentration ranging from 0,025 mg/l to 0,5 mg/l for water and solvent extracts and 0,002 mg/dm² to 0,040 mg/dm² for MPPO migration depending on the individual substance, the specified volume used for analysis and the value of the blank.

Table 1 — Phthalates determined by this method

Name	Abbreviation	Formula	CAS N°	Structure
Diisobutyl-phthalate	DIBP	C ₁₆ H ₂₂ O ₄	84-69-5	
Dibutyl-phthalate	DBP	C ₁₆ H ₂₂ O ₄	84-74-2	
Di-(2-ethylhexyl)-phthalate	DEHP	C ₂₄ H ₃₈ O ₄	117-81-7	

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.

EN 645, *Paper and board intended to come into contact with foodstuffs - Preparation of a cold water extract*

EN 647, *Paper and board intended to come into contact with foodstuffs - Preparation of a hot water extract*

EN 14338, *Paper and board intended to come into contact with foodstuffs - Conditions for determination of migration from paper and board using modified polyphenylene oxide (MPPO) as a simulant*

EN 15519, *Paper and board intended to come into contact with foodstuffs - Preparation of an organic solvent extract*

EN 27213, *Pulps - Sampling for testing (ISO 7213)*

EN ISO 186, *Paper and board - Sampling to determine average quality (ISO 186)*

EN ISO 536, *Paper and board - Determination of grammage (ISO 536)*

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

EN ISO 18856, *Water quality - Determination of selected phthalates using gas chromatography/mass spectrometry (ISO 18856)*

koniec náhľadu – text ďalej pokračuje v platenej verzii STN