

Paper and board intended to come into contact with foodstuffs — Preparation of a hot water extract

The European Standard EN 647:1993 has the status of a
British Standard

UDC 676.2:663/664:620.1:543.8

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United Kingdom	British Standards Institution

This British Standard, having been prepared under the direction of the Consumer and Contract Goods Standards Policy Committee, was published under the authority of the Standards Board and comes into effect on 15 February 1994

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The following BSI references relate to the work on this standard:
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Contents

	Page
Cooperating organizations	Inside front cover
National foreword	ii
<hr/>	
Foreword	2
Text of EN 647	3
<hr/>	
National annex NA (informative) Committees responsible	Inside back cover
National annex NB (informative) Cross-references	Inside back cover
<hr/>	

National foreword

This British Standard has been prepared under the direction of the Consumer and Contract Goods Standards Policy Committee and is the English language version of EN 647 *Paper and board intended to come into contact with foodstuffs — Preparation of a hot water extract*, published by the European Committee for Standardization (CEN).

EN 647 was produced as a result of international discussions in which the UK took an active part.

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, the EN title page, pages 2 to 4, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

UDC 676.2:663/664:620.1:543.8

Descriptors: Paper, paperboards, food products, food-container contact, aqueous extract, preparation, leaching tests, distilled water

English version

Paper and board intended to come into contact with foodstuffs — Preparation of a hot water extract

Papier et carton destinés à entrer en contact
avec les denrées alimentaires — Préparation
d'un extrait aqueux à chaud

Papier und Pappe vorgesehen für den Kontakt
mit Lebensmitteln — Herstellung eines
Heißwasserextraktes

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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

Foreword

This European Standard has been prepared up by the 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 National Standard, either by publication of an identical text or by endorsement, at the latest by April 1994, and conflicting National Standards shall be withdrawn at the latest by April 1994.

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

Contents

	Page
Foreword	2
1 Scope	3
2 Normative references	3
3 Definition	3
4 Principle	3
5 Reagents	3
6 Apparatus	3
7 Sampling	3
8 Procedure	3

1 Scope

This European Standard describes the preparation of a hot water extract for investigations of certain extractives in paper and board intended to come into contact with foodstuffs.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies. ISO 186, *Paper and board — Sampling to determine average quality*.

ISO 287, *Paper and board — Determination of moisture content — Oven drying method*.

ISO 536, *Paper and board — Determination of grammage*.

ISO 1042, *Laboratory glassware — One-mark volumetric flasks*.

ISO 1773, *Laboratory glassware — Boiling flasks (narrow necked)*.

ISO 6556, *Laboratory glassware — Filter flasks*.

3 Definition

For the purposes of this standard, the following definition applies.

hot water extract

the water solution obtained as a result of the hot extraction

NOTE In certain instances this extract can contain small amounts of suspended particles.

4 Principle

The sample is torn or cut and extracted with water for $2\text{ h } + \frac{0}{5}$ min in a water bath of $(80 \pm 2)^\circ\text{C}$, shaking occasionally. After extraction the extract is filtered if necessary. The extract or the filtrate (hot water extract) is used for the investigation of the extractives.

5 Reagents

5.1 Distilled water or water of equal purity.

NOTE The quality of the water should be in accordance with the requirements of the appropriate test method for the determination of the specific extractive.

6 Apparatus

Ordinary laboratory apparatus and:

6.1 *Balance*, accurate to 0,001 g.

6.2 *500 ml conical flask*, wide neck with ground glass stopper with tap (see ISO 1773).

6.3 *Filtration equipment*, fritted-glass filter porosity 4 (nom. size 90) with filter flask of 500 ml (see ISO 6556).

6.4 *Graduated measuring cylinder*, 250 ml.

6.5 *One-mark volumetric flask*, 250 ml (see ISO 1042).

6.6 *Protective gloves*

6.7 *Thermostatic water bath*, suitable to control temperature in the range of $(80 \pm 2)^\circ\text{C}$.

6.8 *Ceramic scissors* (needed only for the determination of metals).

7 Sampling

7.1 Sampling is carried out in accordance with ISO 186. Do not touch the test area of sample or test specimen with the fingers; use protective gloves (6.6).

7.2 A minimum of 10 g of sample is required.

7.3 If required, take a separate sample for the determination of the grammage in accordance with ISO 536 and/or for the determination of moisture content (see ISO 287).

8 Procedure

8.1 Tear or cut the sample as taken into pieces approx. 1 cm^2 to 2 cm^2 . Use protective gloves (6.6).

8.2 Weigh $(10 \pm 0,1)$ g of the test pieces to an accuracy of 0,01 g, put them into the conical flask (6.2), add 200 ml (6.4) of boiling water (5.1), and stopper the flask. Leave this preparation to stand for $2\text{ h } + \frac{0}{5}$ min in a water bath of $(80 \pm 2)^\circ\text{C}$, shaking occasionally.

Decant the solution and wash test pieces in the flask twice with water of 80°C . If necessary filter the hot preparation (6.3). Transfer the extract and washings or the filtrate to a marked volumetric flask (6.5), cool to $(23 \pm 2)^\circ\text{C}$ and fill up to the mark with water. Use the content of the flask for further investigation.

NOTE If necessary, scaling up can be done but not more than twice.

8.3 Before subsampling the extract is reheated.

NOTE If precipitation occurs the extract is stirred before subsampling.

National annex NA (informative) Committees responsible

The United Kingdom participation in the preparation of this European Standard was entrusted by the Consumer and Contract Goods Standards Policy Committee (CCM/-) to Technical Committee CCM/47 upon which the following bodies were represented:

Association of Metropolitan Authorities
Association of Public Analysts
British Paper and Board Industry Federation
British Plastics Federation
Ministry of Agriculture, Fisheries and Food
Pira International
Co-opted member

National annex NB (informative) Cross-references

Publication referred to	Corresponding British Standard
ISO 186:1985	BS 3430:1986 <i>Method for sampling to determine the average quality of paper and board</i>
ISO 536:1976	BS 3432:1980 <i>Method of determination of grammage of paper and board</i>
ISO 1042:1983	BS 1792:1982 <i>Specification for one-mark volumetric flasks</i>
ISO 1773:1976	BS 2734:1984 <i>Specification for boiling flasks (narrow-necked), conical, flat bottom and round bottom</i>
ISO 6556:1981	BS 1739:1982 <i>Specification for filter flasks</i>

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