SLOVENSKI STANDARD
SIST EN 15519:2008

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Papir, karton in lepenka, namenjeni neposrednemu stiku z živili - Priprava ekstrakta organskega topila

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

Papier und Pappe vorgesehen für den Kontakt mit Lebensmitteln - Herstellung eines organischen Lösemittelextraktes

Papier et carton destinés a entrer en contact avec les denrées alimentaires - Préparation d'un extrait au solvant organique

Ta slovenski standard je istoveten z: **EN 15519:2007**

ICS:

67.250	Materiali in predmeti v stiku z živili	Materials and articles in contact with foodstuffs
85.060	Papir, karton in lepenka	Paper and board

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EUROPEAN STANDARD

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

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Foreword

This document (EN 15519:2007) 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of an identical text or by endorsement, at the latest by May 2008, and conflicting national standards shall be withdrawn at the latest by May 2008.

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1 Scope

This European Standard specifies a test method for the assessment of substitute tests performed with volatile test media for the determination of migration from paper and board intended to come into contact with fatty foodstuffs at all temperatures and for any period of time.

NOTE At the time that this European Standard was prepared, the EU directives for material coming into contact with food required use iso-octane or 95 % *v*/*v* aqueous ethanol.

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 1186-1:2002, *Materials and articles in contact with foodstuffs — Plastics — Part 1: Guide to the selection of conditions and test methods for overall migration*

EN ISO 186, *Paper and board — Sampling to determine average quality (ISO 186:2002)*

3 Terms and definitions

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

solvent extract
filtered solvent solution obtained as a result of the extraction

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

4 Principle

The sample is cut and extracted with iso-octane or 95 % *v*/*v* aqueous ethanol. The conditions used for simulating contact with fatty foodstuffs in general are 2 h at 20 °C for short time simulating contact or 24 h at 20 °C for long time simulating contact. For baking or cooking applications the test conditions to use are 2 h at 60 °C. In special cases other conditions are possible and they shall be stated in the test report. After extraction, the extract, if necessary, has to be filtered. The extract or the filtrate (solvent extract) is used for investigation of the extractives.

NOTE Test times longer than 24 h are not necessary. Test temperatures more than 60 °C are not possible due to the boiling point of the solvents.

5 Materials and equipment

Ordinary laboratory apparatus and:

5.1 Analytical balance, capable of determining a change in mass of 0,01 mg.

5.2 500 ml conical glass flasks, wide neck with ground glass stopper with tap (see ISO 1773).

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

5.4 Graduated measuring cylinder made of glass, 250 ml.

5.5 One-mark volumetric glass flask, 250 ml (see EN ISO 1042).

5.6 Protective gloves (e.g. cotton).

5.7 Thermostatically controlled oven, incubator or refrigerator capable of maintaining a temperature within the range of 20 °C to 60 °C and within the tolerances as specified in EN 1186-1:2002, Table B.2.

WARNING — The interior/sample space of the oven, incubator or refrigerator should not have any exposed heating elements, to minimise safety hazards arising from any loss of the flammable solvents from the tubes during the test period.

6 Reagents

6.1 General

All reagents shall be of a recognized analytical quality, unless otherwise specified.

6.2 Iso-octane, (2,2,4-trimethyl pentane), purity 98,5 % (*v*/*v*) or greater, CAS No. 540-84-1.

6.3 Ethanol, purity 96 % (*v*/*v*) or greater, CAS No. 64-17-5. Prepare from this a 95 % aqueous ethanol solution. The solvent ratio used should be adjusted to allow for the initial water content (if any) of the 96 % purity ethanol reagent so that the final test medium contains 95 % ethanol and 5 % water *v*/*v*.

WARNING — Both solvents are flammable. Take care at all times when handling these solvents to prevent contact with sources of ignition.

7 Sampling

7.1 Sampling is carried out in accordance with EN ISO 186. Do not touch the test area of the sample or specimen with fingers. Protective gloves (5.6) shall be used.

7.2 A minimum of 10 g of the sample is required.

7.3 If required, take a separate sample for the determination of the grammage in accordance with EN ISO 536 and/or for the determination of moisture content (see EN 20287).

8 Procedure

8.1 Cut the sample as taken into pieces of approximately 1 cm² to 2 cm². Use protective gloves (5.6).

8.2 Weigh (10 ± 0,1) g of the test pieces and put them into the conical flasks (5.2). Add 200 ml of the appropriate solvent and stopper the volumetric glass flask (5.5). Leave the preparation to stand under the selected conditions and shake from time to time. If testing above ambient temperature for less than 24 h then preheat the solvent in the conical flask to 60 °C and then add the sample to the warm solvent.

Decant the solution and wash the test pieces in the flask twice with small portions of fresh solvent. If necessary, filter the extract using equipment as defined in 5.3. Transfer the extract and washings or the filtrate to a marked volumetric flask (5.5) and fill up to the mark with the solvent. Use the content of the flask for further investigations.

NOTE If more than 250 ml of organic solvent extract is required, appropriate scaling up can be used.

9 Expression of results

Express the amount of measured component extracted into the solvent as milligram per square decimetre of the specimen taking into account the grammage and counting only the simple area of the specimen (e. g. 10 cm × 10 cm square specimen is taken in calculations as 1 dm² and not as the 2 dm² surface area).

10 Test report

The test report shall include the following information:

a) reference to this European Standard (EN 15519:2007);

b) information necessary for complete identification of the sample, such as chemical type, supplier, trade mark, grade, batch number, grammage;

c) conditions of time and temperature of exposure to the solvent and the solvent used;

d) departure from the specified procedure that may have affected the result;

e) individual test results, and mean of these, expressed in milligrams residue per square decimetre of sample;

f) relevant comments on the test results.