SLOVENSKI STANDARD
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Odtisi in tiskarske barve - Določanje odpornosti na jedilna olja in maščobe

Prints and printing inks -- Determination of the resistance of prints to edible oils and fats

Impressions et encres d'imprimerie -- Détermination de la résistance des impressions aux huiles et graisses alimentaires

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INTERNATIONAL STANDARD ISO 2842

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Prints and printing inks — Determination of the resistance of prints to edible oils and fats

Impressions et encres d'imprimerie — Détermination de la résistance des impressions aux huiles et graisses alimentaires

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FOREWORD

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO Member Bodies). The work of developing International Standards is carried out through ISO Technical Committees. Every Member Body interested in a subject for which a Technical Committee has been set up has the right to be represented on that Committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work.

Draft International Standards adopted by the Technical Committees are circulated to the Member Bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 2842 was drawn up by Technical Committee ISO/TC 130, *Graphic technology*, and circulated to the Member Bodies in August 1972.

It has been approved by the Member Bodies of the following countries :

Australia	India	Sweden
Chile	Ireland	Switzerland
Czechoslovakia	New Zealand	Thailand
Denmark	Poland	Turkey
Egypt, Arab Rep. of	Romania	United Kingdom
France	South Africa, Rep. of	
Germany	Spain	

The Member Bodies of the following countries expressed disapproval of the document on technical grounds :

Austria
Finland
Italy

Printed in Switzerland

Prints and printing inks — Determination of the resistance of prints to edible oils and fats

0 INTRODUCTION

This International Standard is in technical conformity with CEI specification 09-60 of the European Committee of the Paint and Printing Ink Manufacturers' Associations.

1 SCOPE

This International Standard specifies a method for determining the resistance of prints to edible fats and oils.

2 FIELD OF APPLICATION

This International Standard applies to all printing substrates such as paper, board, metals (thin metal sheets and plate) and plastics materials, and to all printing processes : letterpress, lithographic and gravure.

3 REFERENCE

ISO/R 105/1, *Tests for colour fastness of textiles — Part 3.*

4 DEFINITION

By **resistance of a print to edible fats and oils** is meant the resistance of a print, prepared according to any printing process, to the products used for the test.

The print is considered to be resistant to the edible fats and oils under test when, under the test conditions and provided that the substrate has undergone no change, any deterioration is only negligible and bleeding is below grade 4 of the grey scale.[1)]

5 TEST METHOD

5.1 Principle

In the case of fats solid at 20 °C, the printed side of a test piece is applied as perfectly as possible, in direct contact with the fat to be tested.

In the case of edible fats liquid at 20 °C, the printed side of a test piece is pressed against filter papers which have previously been impregnated with oil or spread with soft fat.

An assessment is made of any changes to the print and of any bleeding of the colour into the grease or onto the filter paper.

5.2 Apparatus and reagent

5.2.1 Fats solid at 20 °C.

5.2.1.1 Petri dish.

5.2.1.2 The fat used for the test.

5.2.2 Edible fats liquid at 20 °C and **edible oils.**

5.2.2.1 Filter paper for quantitative analysis, with a very smooth, non-hardened surface. The size of the strips of filter paper should be 60 mm × 90 mm.

5.2.2.2 The edible oil or fat, used for the test.

NOTE — Liquid emulsions of fat, of the water-in-oil type (for example, mayonnaise) shall not have separated before or after testing.

5.2.2.3 Glass slides, 60 mm × 90 mm.

5.2.2.4 Grey scale for assessment of bleeding. (According to ISO/R 105/1 — Part 3.)

5.3 Procedure

5.3.1 *Fats solid at 20 °C*

Put the fat to be tested (either melted or compressed) into a Petri dish; ensure that the surface is as flat as possible.

Place a 20 mm × 50 mm test piece with its printed side directly on the surface of the fat; apply it with gentle pressure to obtain as perfect a contact as possible.

1) Certain national bodies in charge of food products require more stringent conditions.

Allow to stand for 24 h[1] at an ambient temperature of 20 ± 2 °C; place the dish and test piece in a refrigerator for 1 h at 4 °C[2] to facilitate the detachment of the test piece.

NOTE – Emulsions of solid fats of the water-in-oil type (butter, margarine) shall not have separated before or during testing. For example, butter shall not have melted.

5.3.2 *Edible fats liquid at 20 °C and edible oils*

Place a 20 mm × 50 mm test piece with its printed side on a layer of at least three thicknesses of filter paper previously immersed in the fat or oil to be tested, then allowed to drip in such a way that it is completely saturated with the reagent, and arranged on a glass slide.

NOTE – In the case of viscous products (fats, oils or emulsions) where soaking is inconvenient, spread the product on both sides of the filter papers in order that it may thoroughly penetrate the paper.

Cover with a second glass slide and leave under a 1 kg weight for 24 h at an ambient temperature of 20 ± 2 °C before detaching the test piece from the filter paper.

5.4 Assessment of results

5.4.1 *Fats solid at 20 °C*

Note if the surface of the fat in contact with the print shows any coloration or not.

Note if the coloration of the print shows any change or not.

5.4.2 *Edible fats liquid at 20 °C and edible oils*

Compare the test piece with an untreated test piece.

Examine for any staining of the filter paper which has been in contact with the test piece. Bleeding is considered to have occurred if grade 4 of the grey scale is reached.

NOTE – In all cases, any change in the print caused by absorption or by the deposit of a thin film of the product tested is not considered to be deterioration within the meaning of this International Standard.

Examine whether the ink film is basically intact and if its adhesion is maintained.

5.5 Test report

Quoting this International Standard, state :

a) the reagent (fat or oil) used for the test;

b) the condition of the reagent used (solid or liquid);

c) the alterations noted if the print colour has changed; and give precise details of any changes attributable to the substrate, to absorption or to the deposit of a thin film of the product in question;

d) the coloration – or absence of coloration – of the filter paper in contact with the print.

1) During this period it is recommended that emulsions particularly of fat be kept in an atmosphere saturated with humidity so that the reagents do not dry out.

2) Unless otherwise specified a tolerance of ± 2 °C is usually permitted.