SLOVENSKI STANDARD
SIST EN 1163:2000

01-december-2000

Feather and down - Test methods - Determination of the oil and fat content

Feather and down - Test methods - Determination of the oil and fat content

Federn und Daunen - Prüfverfahren - Bestimmung des Öl- und Fettgehaltes

Plumes et duvets - Méthodes d'essai - Détermination du contenu en huiles et graisses

Ta slovenski standard je istoveten z: **EN 1163:1996**

ICS:

59.040 Pomožni materiali za tekstilije Textile auxiliary materials

SIST EN 1163:2000 **en**

EUROPEAN STANDARD **EN 1163**

NORME EUROPÉENNE

EUROPÄISCHE NORM August 1996

ICS 67.120.20; 97.160

Descriptors: stuffings, feathers, tests, extraction, oils, greases, soluble matter, solvents, dichloromethane

English version

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CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

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Foreword

This European Standard has been prepared by the Technical Committee CEN/TC 222 "Feather and down as filling material for any article, as well as finished articles filled with feather and down", the secretariat of which is held by UNI.

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of an identical text or by endorsement, at the latest by February 1997, and conflicting national standards shall be withdrawn at the latest by February 1997.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of 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.

0 Introduction

Feather and down can contain varying quantities of oils and fats. It is suspected that adding mineral oil has the effect of binding impurities into the feathers and down, giving the impression of a cleaner product.

1 Scope

This European Standard specifies a method for determining the amount of solvent soluble matter in dichloromethane.

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.

EN 20139	Textiles - Standard atmospheres for conditioning and testing (ISO 139:1973)
EN 20187	Paper, board and pulps - Standard atmosphere for conditioning and testing and procedure for monitoring the atmosphere and conditioning of samples (ISO 187:1990)
ISO 3074	Wool - Determination of dichloromethane-soluble matter in combed sliver
ISO 3819	Laboratory glassware - Beakers
ISO 4793	Laboratory sintered (fritted) filters - Porosity grading, classification and designation
ISO 4797	Laboratory glassware - Flasks with conical ground joints
ISO 4797-1	Laboratory apparatus - Vocabulary relating to apparatus made essentially from glass, porcelain or vitreous silica - Part 1: Names for items of apparatus

3 Principle

Extraction of a known amount of feathers and down in a Soxhlet apparatus with dichloromethane; filtration of the dichloromethane solution, evaporation of the solvent and determination of the mass of the residue.

4 Reagents

Purified, distilled dichloromethane (in accordance with ISO 3074)

5 Apparatus

5.1 Analytical balance (with sensitivity of 0,1 mg)

5.2 Soxhlet extractor, capacity 100 ml with condenser (in accordance with ISO 4797-1)

5.3 Extractor flasks, capacity 250 ml (in accordance with ISO 4797)

5.4 Fat free paper thimbles or sintered base glass

5.5 Condenser

5.6 Sintered (fritted) filter P 100 (ISO 4793) or fat free paper filter of equal porosity

5.7 Waterbath or hot plate

5.8 Desiccator with desiccating agent

5.9 Tared glass beaker, capacity 100 ml, dried at (105 ± 2) °C (in accordance with ISO 3819)

5.10 Drying oven, capable of being controlled at a temperature of (105 ± 2) °C

6 Conditioning and testing

Test specimen of a representative part of the laboratory bulk sample shall be conditioned for a minimum period of 24 h in accordance with EN 20139 and the temperature and relative humidity shall be measured in accordance with EN 20187.

7 Procedure

7.1 Take one conditioned test specimen of mass from 4 g ± 0,05 g to 5 g ± 0,05 g

7.2 Put the conditioned test specimen into the extraction thimble, which is placed in the Soxhlet extractor. Attach the condenser and extraction flask, and with enough solvent to maintain siphoning. Place the connected flask in the waterbath or on the hot plate so that satisfactory siphoning occurs, at the rate of not less than 6 cycles per hour and then extract the individual sample.

7.3 Extract the test specimen for not less than 20 siphonings. Filter the content of the extraction flask through a sintered filter or fat free paper filter into a tared beaker, remove the bulk of the solvent by distillation, dry to constant mass in a well ventilated oven at (105 ± 2) °C.

7.4 Repeat the operations in 7.1 to 7.3 on the second test specimen.

8 Expression of results

The dichloromethane soluble matter (in percent) is calculated as follows:

$$M_s = \frac{A - B}{C} x 100$$

where:

M_s is dichloromethane soluble matter, in percent;
A is the mass of the beaker containing the residue in grams;
B is the mass of the beaker in grams;
C is the mass of the conditioned test specimen in grams.

The result is expressed as the average of at least two determinations, rounded to one decimal place.

9 Test report

The test report shall include at least the following information:

- the reference to this standard;
- date and place of testing;
- identification mark of the individual sample tested;
- the mean result to one decimal place in accordance with 8;
- any departure from the procedure and any other circumstances that can have affected the result.