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ORIGINAL

**Feather and down —
Test methods —
Determination of the oil and
fat content**



The European Standard EN 1163 : 1996 has the status of a
British Standard

ICS 59.040

Committees responsible for this British Standard

The preparation of this British Standard was entrusted to Technical Committee TCI/67, Household textiles, upon which the following bodies were represented:

British Apparel and Textile Confederation
 British Fire Services' Association
 British Furniture Manufacturers' Federation
 British Interior Textiles Association
 British Retail Consortium
 Child Accident Prevention Trust
 Confederation of British Wool Textiles Limited
 Consumer Policy Committee of BSI
 Fabric Care Research Association Ltd.
 Institute of Trading Standards Administration
 National Children's Wear Association
 Natural Fillings Producers' Association
 North East Lancashire Textile Manufacturers' Association
 Qualitas Furnishing Standards Ltd.
 Textile Finishers' Association

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This British Standard, having been prepared under the direction of the Sector Board for Materials and Chemicals, was published under the authority of the Standards Board and comes into effect on 15 April 1997

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Amendments issued since publication

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National foreword

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This British Standard has been prepared by Technical Committee A/1163 and is the English language version of EN 1163 : 1996 *Feather and down — Test methods — Determination of the oil and fat content* published by the European Committee for Standardization (CEN).

Cross-references

Publication referred to	Corresponding British Standard
EN 21039 : 1992	BS EN 20139 : 1992 <i>Textiles. Standard atmospheres for conditioning and testing</i>
EN 20187 : 1993	BS EN 20187 : 1993 <i>Paper, board and pulps. Standard atmosphere for conditioning and testing and procedure for monitoring the atmosphere and conditioning of samples</i>
ISO 3819 : 1985	BS 6523 : 1984 <i>Specification for glass beakers for laboratory use</i>
ISO 4793 : 1980	BS 1752 : 1983 <i>Specification for laboratory sintered or fritted filters including porosity grading</i>
ISO 4797 : 1981	BS 6352 : 1983 <i>Specification for flasks with ground glass joints</i>

Compliance with a British Standard does not of itself confer immunity from legal obligations.

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.

ICS 67.120.20; 97.160

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

English version

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

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

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

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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

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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.

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

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 $(105 \pm 2) ^\circ\text{C}$ (in accordance with ISO 3819).
- 5.10 *Drying oven*, capable of being controlled at a temperature of $(105 \pm 2) ^\circ\text{C}$.

6 Conditioning and testing

Test specimens 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 $4 \text{ g} \pm 0,05 \text{ g}$ to $5 \text{ g} \pm 0,05 \text{ g}$.
- 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 put 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 $(105 \pm 2) ^\circ\text{C}$.
- 7.4 Repeat the operations in 7.1 to 7.3 on the second test specimen.

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8 Expression of results

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

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

where:

- M_s is the percentage of matter soluble in dichloromethane;
- 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.

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