

English Version

**Footwear - Critical substances potentially present in footwear
and footwear components - Test method to quantitatively
determine dimethyl fumarate (DMFU) in footwear materials
(ISO/TS 16186:2012)**

Chaussure - Substances critiques potentiellement
présentes dans la chaussure et les composants de
chaussure - Méthodes d'essai pour déterminer
quantitativement le diméthylfumarate (DMFu) dans les
matériaux de chaussure (ISO/TS 16186:2012)

Schuhe - Möglicherweise in Schuhen und
Schuhbestandteilen vorhandene kritische Substanzen -
Prüfverfahren zur quantitativen Bestimmung von
Dimethylfumarat (DMFU) in Schuhwerkstoffen (ISO/TS
16186:2012)

This Technical Specification (CEN/TS) was approved by CEN on 6 August 2012 for provisional application.

The period of validity of this CEN/TS is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the CEN/TS can be converted into a European Standard.

CEN members are required to announce the existence of this CEN/TS in the same way as for an EN and to make the CEN/TS available promptly at national level in an appropriate form. It is permissible to keep conflicting national standards in force (in parallel to the CEN/TS) until the final decision about the possible conversion of the CEN/TS into an EN is reached.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: Avenue Marnix 17, B-1000 Brussels

Foreword

This document (CEN ISO/TS 16186:2012) has been prepared by Technical Committee CEN/TC 309 "Footwear", the secretariat of which is held by AENOR, in collaboration with Technical Committee ISO/TC 216 "Footwear".

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

According to the CEN/CENELEC Internal Regulations, the national standards organisations of the following countries are bound to announce this Technical Specification: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Footwear — Critical substances potentially present in footwear and footwear components — Test method to quantitatively determine dimethyl fumarate (DMFU) in footwear materials

1 Scope

This Technical Specification gives a test method for determining the amounts of dimethyl fumarate (DMFU) in footwear materials, desiccant sachets and other commodities.

The test method is not applicable to metal parts. The materials to which it is applicable are given in ISO/TR 16178:2012, Table 1.

NOTE In Europe, DMFU is prohibited in biocidal products as per Directive 98/8/EC. The substance must be used with caution to avoid any health problems in the chemistry laboratory. More recently, EU Commission Decision 2009/251/EC requires EU member states to ensure that products containing the biocide DMFU are not placed or made available on the market in the European Union. Decision 2009/251/EC establishes a maximum concentration of DMFU in products and parts of products of 0,1 mg/kg.

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.

ISO 4787, *Laboratory glassware — Volumetric instruments — Methods for testing of capacity and for use*

ISO/TR 16178:2012, *Footwear — Critical substances potentially present in footwear and footwear components*

3 Principle of method

The sample is cut into small pieces and extracted with acetone in a sealed vial at a defined temperature in an ultrasonic bath. At this step, two different procedures are proposed, to be used depending on the material being tested:

- a) the first procedure, without purification and concentration of the extracted solution, can be used for samples giving a simple chromatograph, for example, textiles;
- b) the second procedure, with purification and concentration of the extract, can be used for samples with a complex matrix effect, such as leather.

4 Reagents

4.1 General

The substances given in Table 1 shall be used at a defined purity grade (at least 99,5 %).