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Textiles and textile products - Determination of certain residual solvents - Part 1: Determination of aprotic solvents, method using gas chromatography

EESTI STANDARDIMIS- JA AKREDITEERIMISKESKUS
ESTONIAN CENTRE FOR STANDARDISATION AND ACCREDITATION

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 17131-1:2025 sisaldab Euroopa standardi EN 17131-1:2025 ingliskeelset teksti.	This Estonian standard EVS-EN 17131-1:2025 consists of the English text of the European standard EN 17131-1:2025.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 03.12.2025.	Date of Availability of the European standard is 03.12.2025.
Standard on kättesaadav Eesti Standardimis-ja Akrediteerimiskeskusest.	The standard is available from the Estonian Centre for Standardisation and Accreditation.

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ICS 59.080.01

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 17131-1

December 2025

ICS 59.080.01

Supersedes EN 17131:2019

English Version

Textiles and textile products - Determination of certain residual solvents - Part 1: Determination of aprotic solvents, method using gas chromatography

Textiles et produits textiles - Détermination de certains solvants résiduels - Partie 1 : Détermination des solvants aprotiques, méthode par chromatographie en phase gazeuse

Textilien und textile Erzeugnisse - Bestimmung bestimmter Lösungsmittelrückstände - Teil 1: Bestimmung aprotischer Lösemittel, Verfahren mittels Gaschromatographie

This European Standard was approved by CEN on 19 October 2025.

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

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European foreword

This document (EN 17131-1:2025) has been prepared by Technical Committee CEN/TC 248 “Textiles and textile products”, the secretariat of which is held by BSI.

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 June 2026, and conflicting national standards shall be withdrawn at the latest by June 2026.

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

This document supersedes EN 17131:2019.

This document includes the following significant technical changes with respect to EN 17131:2019:

— the title has been changed;

— *N*,*N*-dimethylacetamide (DMAC) and *N*-methyl-2-pyrrolidone (NMP) have been included in the Introduction;

— Clause 1: The scope has been extended to include the analytes DMAC, NMP and *N*-ethyl-2-pyrrolidone (NEP);

— Clause 5: DMAC, NMP and NEP have been added;

— 5.7: The descriptions of the preparation of stock solutions have been changed in order to consider the additional analytes DMAC, NMP and NEP;

— 8.2: The description of the determination with GC-MS has been changed in order to consider the additional analytes DMAC, NMP and NEP;

— 9.1: The headline has been added and the description of the calculation has been changed in order to consider the additional analytes DMAC, NMP and NEP;

— 9.2 and 9.3: Precision of the method including the limit of quantification of the test method has been added;

— Clause 10 has been rephrased;

— Annex A has been extended to include the analytes DMAC, NMP and NEP;

— Annex B: Reliability of the method has been added including certain statistical data of an interlaboratory trial to determine the reliability of the method.

This document is Part 1 of the EN 17131 series of standards under the title *Textiles and textile products — Determination of certain residual solvents*:

— *Part 1: Determination of aprotic solvents, method using gas chromatography* (this document);

— *Part 2: Determination of benzene, method using headspace gas chromatography*.

A list of all parts in a series can be found on the CEN website: www.cencenelec.eu.

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Introduction

In Europe according to Regulation (EU) 2018/1513 amending Annex XVII to Regulation (EC) No 1907/2006 (REACH) by Entry 72 [1], (a) clothing or related accessories; (b) textiles other than clothing which, under normal or reasonably foreseeable conditions of use, come into contact with human skin to an extent similar to clothing; (c) footwear are not to be placed on the market after 1 November 2020, if they contain more than 3 000 mg/kg of *N,N*-dimethylformamide (DMF), *N,N*-dimethylacetamide (DMAC) or *N*-methyl-2-pyrrolidone (NMP).

This restriction does not apply to: (a) clothing, related accessories or footwear, or parts of clothing, related accessories or footwear, made exclusively of natural leather, fur or hide; (b) non-textile fasteners and non-textile decorative attachments; (c) second-hand clothing, related accessories, textiles other than clothing or footwear; (d) wall-to-wall carpets and textile floor coverings for indoor use, rugs and runners. It also does not apply to clothing, related accessories, textiles other than clothing, or footwear within the scope of Regulation (EU) 2016/425 on personal protective equipment or Regulation (EU) 2017/745 on medical devices. The restriction on textiles other than clothing does not apply to disposable textiles. “Disposable textiles” means textiles that are designed to be used only once or for a limited time and are not intended for subsequent use for the same or a similar purpose.

Although the Regulation [1] excludes non-textile fastenings and decorative items, this document is also suitable for such components.

WARNING — The use of this document involves hazardous materials. It does not purport to address all of the safety or environmental problems associated with its use. It is the responsibility of users of this document to take appropriate measures to ensure the safety and health of personnel and the environment prior to application of the document and fulfil statutory and regulatory requirements for this purpose.

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1 Scope

This document specifies a method using gas chromatography with mass selective detector (GC-MS) for detection and quantification of extractable *N,N*-dimethylformamide (DMF), *N,N*-dimethylacetamide (DMAC), *N*-methyl-2-pyrrolidone (NMP) and *N*-ethyl-2-pyrrolidone (NEP) in filaments and coatings of textile products.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 ISO 4787, *Laboratory glass and plastic ware — Volumetric instruments — Methods for testing of capacity and for use (ISO 4787)*

3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp/

— IEC Electropedia: available at https://www.electropedia.org/

4 Principle

The sample is cut into small pieces and extracted with methanol, in a sealed vial at 70 °C, in an ultrasonic bath. An aliquot of the extract is analysed using a gas chromatograph with mass selective detector (GC-MS).

5 Reagents

Unless otherwise specified, analytical grade chemicals shall be used.

5.1 ***N,N*-dimethylformamide (DMF)**, CAS Registry Number®[1] (CAS RN®) 68-12-2, reference standard of certified purity.

5.2 ***N,N*-dimethylformamide-d7 (DMF-d7)**, CAS RN® 4472-41-7, reference standard of certified purity.

5.3 ***N,N*-dimethylacetamide (DMAC),** CAS RN® 127-19-5, reference standard of certified purity.

5.4 ***N*-methyl-2-pyrrolidone (NMP)**, CAS RN® 872-50-4, reference standard of certified purity.

5.5 ***N*-ethyl-2-pyrrolidone (NEP)**, CAS RN® 2687-91-4, reference standard of certified purity.

5.6 **Methanol**, CAS RN® 67-56-1.

[1] CAS Registry Number® (CAS RN®) is a trademark American Chemical Society (ACS). This information is given for the convenience of users of this document and does not constitute an endorsement by CEN of the product named. Equivalent products may be used if they can be shown to lead to the same results.

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