

Plastics - Ethylene/vinyl acetate copolymer (EVAC)  
thermoplastics - Determination of vinyl acetate content  
(ISO 8985:2022, Corrected version 2022-08)

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 8985:2022 sisaldab Euroopa standardi EN ISO 8985:2022 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 8985:2022 consists of the English text of the European standard EN ISO 8985:2022.
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 09.02.2022.	Date of Availability of the European standard is 09.02.2022.
Standard on kättesaadav Eesti Standardimis-ja Akrediteerimiskeskusest.	The standard is available from the Estonian Centre for Standardisation and Accreditation.

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English Version

Plastics - Ethylene/vinyl acetate copolymer (EVAC)  
thermoplastics - Determination of vinyl acetate content  
(ISO 8985:2022, Corrected version 2022-08)

Plastiques - Copolymères éthylène/acétate de vinyle  
(EVAC) thermoplastiques - Dosage de l'acétate de  
vinyle (ISO 8985:2022, Version corrigée 2022-08)

Kunststoffe - Ethylen-Vinylacetat-Copolymer (EVAC)-  
Thermoplasten - Bestimmung des Vinylacetatgehalts  
(ISO 8985:2022, korrigierte Fassung 2022-08)

This European Standard was approved by CEN on 25 December 2021.

This European Standard was corrected and reissued by the CEN-CENELEC Management Centre on 14 September 2022.

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

## European foreword

This document (EN ISO 8985:2022) has been prepared by Technical Committee ISO/TC 61 "Plastics" in collaboration with Technical Committee CEN/TC 249 "Plastics" the secretariat of which is held by NBN.

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 August 2022, and conflicting national standards shall be withdrawn at the latest by August 2022.

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 ISO 8985:1998.

Any feedback and questions on this document should be directed to the users' national standards body/national committee. A complete listing of these bodies can be found on the CEN website.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

## Endorsement notice

The text of ISO 8985:2022, Corrected version 2022-08 has been approved by CEN as EN ISO 8985:2022 without any modification.

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## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established 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. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 9, *Thermoplastic materials*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 249, *Plastics*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This third edition cancels and replaces the second edition (ISO 8985:1998), which has been technically revised.

The main changes compared to the previous edition are as follows:

- the normative references have been updated to the latest version;
- the mandatory terms and definitions clause has been added (see [Clause 3](#));
- a “thermogravimetry test method” has been added;
- infrared spectrometer has been modified to be Fourier infrared spectrometer;
- the example of infrared spectrum has been modified from transmission to absorbance;
- the example of calibration curve has been modified.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).

This corrected version of ISO 8985:2022 incorporates the following corrections:

- the missing content has been reinstated in subclauses [4.3.3.2.5](#), [4.3.5](#), [5.2.5.2](#) and [5.4.5.3](#);
- the values of [Formula \(6\)](#) has been corrected;
- the subtitles of [Figure 2](#) have been corrected;
- the unit in [Figure 5](#) has been corrected;

- the legend for [Formula \(11\)](#) has been corrected.

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# Plastics — Ethylene/vinyl acetate copolymer (EVAC) thermoplastics — Determination of vinyl acetate content

**SAFETY PRECAUTIONS** — Persons using this document should be familiar with normal laboratory practice, if applicable. This document does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user to establish appropriate safety and health practices.

## 1 Scope

This document specifies two categories of method for the determination of the vinyl acetate (VAC) content of ethylene/vinyl acetate (EVAC) copolymer, for use in the designation of such copolymers according to ISO 21301-1. One category is referred to as “reference methods”, the other as “test methods”.

The “reference methods” are used to calibrate the method used for the determination of the vinyl acetate content of ethylene/vinyl acetate copolymers.

The “test methods” are other methods which can be used for the determination if they are calibrated using one of the reference methods described in [Clause 4](#), provided they show a certain permissible repeatability.

## 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.

ISO 472, *Plastics — Vocabulary*

ISO 4799, *Laboratory glassware — Condensers*

ISO 11358-1:2014, *Plastics — Thermogravimetry (TG) of polymers — Part 1: General principles*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 472 apply.

ISO and IEC maintain terminological 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 Reference methods

### 4.1 Reference method 1: Hydrolysis and back titration

#### 4.1.1 Principle

A test portion is dissolved in xylene and the acetate groups are hydrolysed with alcoholic potassium hydroxide solution. An excess of sulfuric or hydrochloric acid is added. The acid is back titrated with a standard sodium hydroxide solution in the presence of phenolphthalein as indicator.