

Plastics - Homopolymer and copolymer resins of vinyl chloride - Part 2: Preparation of test samples and determination of properties (ISO 24024-2:2021)

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 24024-2:2021 sisaldab Euroopa standardi EN ISO 24024-2:2021 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 24024-2:2021 consists of the English text of the European standard EN ISO 24024-2:2021.
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 24.02.2021.	Date of Availability of the European standard is 24.02.2021.
Standard on kättesaadav Eesti Standardimis-ja Akrediteerimiskeskusest.	The standard is available from the Estonian Centre for Standardisation and Accreditation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile [standardiosakond@evs.ee](mailto:standardiosakond@evs.ee).

ICS 83.080.20

Standardite reprodutseerimise ja levitamise õigus kuulub Eesti Standardimis- ja Akrediteerimiskeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonsesse süsteemi või edastamine ükskõik millises vormis või millisel teel ilma Eesti Standardimis- ja Akrediteerimiskeskuse kirjaliku loata on keelatud.

Kui Teil on küsimusi standardite autorikaitse kohta, võtke palun ühendust Eesti Standardimis- ja Akrediteerimiskeskusega: Koduleht [www.evs.ee](http://www.evs.ee); telefon 605 5050; e-post [info@evs.ee](mailto:info@evs.ee)

The right to reproduce and distribute standards belongs to the Estonian Centre for Standardisation and Accreditation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without a written permission from the Estonian Centre for Standardisation and Accreditation.

If you have any questions about copyright, please contact Estonian Centre for Standardisation and Accreditation:

Homepage [www.evs.ee](http://www.evs.ee); phone +372 605 5050; e-mail [info@evs.ee](mailto:info@evs.ee)

EUROPEAN STANDARD

**EN ISO 24024-2**

NORME EUROPÉENNE

EUROPÄISCHE NORM

February 2021

ICS 83.080.20

Supersedes EN ISO 1060-2:1999

English Version

**Plastics - Homopolymer and copolymer resins of vinyl chloride - Part 2: Preparation of test samples and determination of properties (ISO 24024-2:2021)**

Plastiques - Résines d'homopolymères et de copolymères de chlorure de vinyle - Partie 2: Préparation des échantillons pour essai et détermination des propriétés (ISO 24024-2:2021)

Kunststoffe - Homo- und Copolymere des Vinylchlorids - Teil 2: Herstellung von Probekörpern und Bestimmung von Eigenschaften (ISO 24024-2:2021)

This European Standard was approved by CEN on 8 February 2021.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

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.

CEN members are the national standards bodies of 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, Turkey and United Kingdom.



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 24024-2:2021) 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 2021, and conflicting national standards shall be withdrawn at the latest by August 2021.

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 1060-2:1999.

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, Turkey and the United Kingdom.

## Endorsement notice

The text of ISO 24024-2:2021 has been approved by CEN as EN ISO 24024-2:2021 without any modification.

# Contents

	Page
<b>Foreword</b> .....	<b>iv</b>
<b>1 Scope</b> .....	<b>1</b>
<b>2 Normative references</b> .....	<b>1</b>
<b>3 Terms and definitions</b> .....	<b>2</b>
<b>4 Preparation of test samples</b> .....	<b>2</b>
4.1 Sampling.....	2
4.2 Preparation of standard pastes.....	2
<b>5 Conditioning of test samples</b> .....	<b>3</b>
<b>6 Determination of properties</b> .....	<b>3</b>

## 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 first edition of ISO 24024-2 cancels and replaces ISO 1060-2:1998, which has been technically revised.

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

- the dated normative references have been replaced with undated reference.

A list of all parts in the ISO 24024 series can be found on the ISO website.

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).

# Plastics — Homopolymer and copolymer resins of vinyl chloride —

## Part 2: Preparation of test samples and determination of properties

### 1 Scope

This document specifies the methods of preparation of test samples and the test methods to be used in determining the properties of PVC resins. Requirements for handling test material and for conditioning the material before testing are given here. In addition, properties and test methods which are suitable and necessary to characterize PVC resins are listed.

### 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 60, *Plastics — Determination of apparent density of material that can be poured from a specified funnel*

ISO 1068, *Plastics — Homopolymer and copolymer resins of vinyl chloride — Determination of compacted apparent bulk density*

ISO 1158, *Plastics — Vinyl chloride homopolymers and copolymers — Determination of chlorine content*

ISO 1264, *Plastics — Homopolymer and copolymer resins of vinyl chloride — Determination of pH of aqueous extract*

ISO 1265, *Plastics — Poly(vinyl chloride) resins — Determination of number of impurities and foreign particles*

ISO 1269, *Plastics — Homopolymer and copolymer resins of vinyl chloride — Determination of volatile matter (including water)*

ISO 1385-1, *Phthalate esters for industrial use — Methods of test — Part 1: General*

ISO 1624, *Plastics — Vinyl chloride homopolymer and copolymer resins — Sieve analysis in water*

ISO 1628-2, *Plastics — Determination of the viscosity of polymers in dilute solution using capillary viscometers — Part 2: Poly(vinyl chloride) resins*

ISO 2555, *Plastics — Resins in the liquid state or as emulsions or dispersions — Determination of apparent viscosity using a single cylinder type rotational viscometer method*

ISO 2591-1, *Test sieving — Part 1: Methods using test sieves of woven wire cloth and perforated metal plate*

ISO 3219, *Plastics — Polymers/resins in the liquid state or as emulsions or dispersions — Determination of viscosity using a rotational viscometer with defined shear rate*

ISO 3451-5, *Plastics — Determination of ash — Part 5: Poly(vinyl chloride)*

ISO 4574, *Plastics — PVC resins for general use — Determination of hot plasticizer absorption*

ISO 4575, *Plastics — Poly(vinyl chloride) pastes — Determination of apparent viscosity using the Severs rheometer*

ISO 4608, *Plastics — Homopolymer and copolymer resins of vinyl chloride for general use — Determination of plasticizer absorption at room temperature*

ISO 4610, *Plastics — Vinyl chloride homopolymer and copolymer resins — Sieve analysis using air-jet sieve apparatus*

ISO 4612, *Plastics — Preparation of PVC pastes for test purposes — Planetary-mixer method*

ISO 6186, *Plastics — Determination of pourability*

ISO 6401, *Plastics — Poly(vinyl chloride) — Determination of residual vinyl chloride monomer — Gas-chromatographic method*

ISO 11468, *Plastics — Preparation of PVC pastes for test purposes — Dissolver method*

### 3 Terms and definitions

No terms and definitions are listed in this document.

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 <http://www.electropedia.org/>

### 4 Preparation of test samples

#### 4.1 Sampling

The sample of resin taken should be generally representative of the resin whose properties are to be determined and be sufficiently large to provide the number of test samples required by the test methods concerned.

In order to obtain reproducible and comparable test results, it is necessary to use the methods of sample preparation and conditioning and the test procedures specified herein. Values determined will not necessarily be identical to those obtained using different test samples, or test samples prepared using different procedures.

#### 4.2 Preparation of standard pastes

In order to carry out certain tests on paste resins, it is necessary to prepare standard pastes from the test sample concerned.

For designation purposes, one of two standard paste formulations, A and B, shall be used, but formulation A should be used in preference. Formulation B should be used when the resin to be designated does not form a paste with formulation A or if the temperature exceeds 35 °C during the preparation of the paste. Formulation B should also be used when it is not possible to measure the viscosities of the paste at both shear rates with formulation A.