

Paints and varnishes - Determination of solvents in
water-thinnable coating materials -
Gas-chromatographic method (ISO 22518:2019)

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 22518:2020 sisaldab Euroopa standardi EN ISO 22518:2020 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 22518:2020 consists of the English text of the European standard EN ISO 22518:2020.
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.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 09.12.2020.	Date of Availability of the European standard is 09.12.2020.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

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

ICS 87.040

Standardite reprodutseerimise ja levitamise õigus kuulub Eesti Standardikeskusele

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

Kui Teil on küsimusi standardite autorikaitse kohta, võtke palun ühendust Eesti Standardikeskusega:
Koduleht www.evs.ee; telefon 605 5050; e-post info@evs.ee

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

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.

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

Homepage www.evs.ee; phone +372 605 5050; e-mail info@evs.ee

ICS 87.040

English Version

Paints and varnishes - Determination of solvents in water-thinnable coating materials - Gas-chromatographic method (ISO 22518:2019)

Peintures et vernis - Détermination des solvants dans des peintures diluables à l'eau - Méthode par chromatographie en phase gazeuse (ISO 22518:2019)

Beschichtungsstoffe - Bestimmung von Lösemitteln in wasserverdünnbaren Beschichtungsstoffen - Gaschromatographisches Verfahren (ISO 22518:2019)

This European Standard was approved by CEN on 30 November 2020.

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

The text of ISO 22518:2019 has been prepared by Technical Committee ISO/TC 35 "Paints and varnishes" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 22518:2020 by Technical Committee CEN/TC 139 "Paints and varnishes" the secretariat of which is held by DIN.

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 2021, and conflicting national standards shall be withdrawn at the latest by June 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.

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 22518:2019 has been approved by CEN as EN ISO 22518:2020 without any modification.

Contents

	Page
Foreword	iv
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Units	1
5 Principle	1
6 Apparatus	2
6.1 Gas chromatograph.....	2
6.1.1 General.....	2
6.1.2 Sample injection system.....	2
6.1.3 Oven.....	2
6.1.4 Detector.....	2
6.1.5 Capillary separation column.....	3
6.1.6 Injection syringe.....	3
6.2 Data acquisition.....	3
6.3 Sample vessel.....	3
7 Reagents	3
7.1 Gases.....	3
7.2 Internal standard.....	3
7.3 Calibration substances.....	3
7.4 Diluents.....	3
8 Sampling	4
9 Choice of sample injection system	4
10 Procedure	4
10.1 Gas chromatographic conditions.....	4
10.1.1 General.....	4
10.1.2 Example of hot injection and gas chromatography of a water-thinnable coating material.....	4
10.1.3 Cold injection and gas chromatography of a water-thinnable coating material (example).....	6
10.2 Injection volume.....	7
10.3 Calibration.....	7
10.4 Sample preparation and analysis.....	7
11 Expression of results	8
12 Precision	8
12.1 General.....	8
12.2 Repeatability.....	9
12.3 Reproducibility.....	9
13 Test report	9
Bibliography	11

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).

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).

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.

This document was prepared by Technical Committee ISO/TC 35, *Paints and varnishes*, Subcommittee SC 9, *General test methods for paints and varnishes*.

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.

Paints and varnishes — Determination of solvents in water-thinnable coating materials — Gas-chromatographic method

1 Scope

This document specifies a method for the gas-chromatographic determination of the solvents in water-thinnable paints and varnishes, binder solutions, emulsions and dispersions.

With the precision stated in [Clause 13](#), single components above 0,02 % (mass fraction) can be determined quantitatively.

The method defined in this document is not applicable for the determination of Volatile Organic Compounds (VOC) and Semi-Volatile Organic Compounds (SVOC) content.

NOTE For the determination of VOC and SVOC, see ISO 11890-2^[2].

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 4618, *Paints and varnishes — Terms and definitions*

ISO 15528, *Paints, varnishes and raw materials for paints and varnishes — Sampling*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 4618 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 <http://www.electropedia.org/>

4 Units

The analytical results are expressed as a percentage mass fraction.

5 Principle

After sample preparation, the components contained in the sample under test are separated by gas chromatography. Either a hot or a cold sample injection system can be used, depending on the product type. After the components have been identified, they are quantified from the peak areas using the internal standard method.