Pigments and extenders - Methods of dispersion and assessment of dispersibility in plastics - Part 2: Determination of colouristic properties and ease of dispersion in plasticized polyvinyl chloride by two-roll milling (ISO 23900-2:2015)



#### EESTI STANDARDI EESSÕNA

#### NATIONAL FOREWORD

| See Eesti standard EVS-EN ISO 23900-2:2018 sisaldab Euroopa standardi EN ISO 23900-2:2018 ingliskeelset teksti.           | This Estonian standard EVS-EN ISO 23900-2:2018 consists of the English text of the European standard EN ISO 23900-2:2018.          |  |
|---|--|--|
| 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<br>Euroopa standardi rahvuslikele liikmetele<br>kättesaadavaks 10.01.2018. | Date of Availability of the European standard is 10.01.2018.   |  |
| Standard on kättesaadav Eesti<br>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 <u>standardiosakond@evs.ee</u>.

#### ICS 87.060.10

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 <a href="www.evs.ee">www.evs.ee</a>; telefon 605 5050; e-post <a href="mailto:info@evs.ee">info@evs.ee</a>

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

## EUROPEAN STANDARD

### NORME EUROPÉENNE

**EUROPÄISCHE NORM** 

January 2018

EN ISO 23900-2

ICS 87.060.10

Supersedes EN 13900-2:2003

#### **English Version**

Pigments and extenders - Methods of dispersion and assessment of dispersibility in plastics - Part 2:

Determination of colouristic properties and ease of dispersion in plasticized polyvinyl chloride by two-roll milling (ISO 23900-2:2015)

Pigments et matières de charge - Méthodes de dispersion et évaluation de l'aptitude à la dispersion dans les plastiques - Partie 2: Détermination des propriétés colorimétriques et de la facilité de dispersion dans le polychlorure de vinyle plastifié par calandrage sur bicylindre (ISO 23900-2:2015)

Pigmente und Füllstoffe - Dispergierverfahren und Beurteilung der Dispergierbarkeit in Kunststoffen -Teil 2: Bestimmung der koloristischen Eigenschaften und der Dispergierhärte in weichmacherhaltigen Polyvinylchlorid (PVC-P) - Formmassen im Walztest (ISO 23900-2:2015)

This European Standard was approved by CEN on 4 January 2018.

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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, 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 23900-2:2015 has been prepared by Technical Committee ISO/TC 256 "Pigments, dyestuffs and extenders" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 23900-2:2018 by Technical Committee CEN/TC 298 "Pigments and extenders" 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 July 2018, and conflicting national standards shall be withdrawn at the latest by July 2018.

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 13900-2:2003.

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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

#### **Endorsement notice**

The text of ISO 23900-2:2015 has been approved by CEN as EN ISO 23900-2:2018 without any modification.

| COI  | itents   |                                       | Page        |
|------|--|---------------------------------------|-------------|
| Fore | word   |                                       | iv          |
| 1    | Scope  |                                       | 1           |
| 2    | Normative references   |                                       | 1           |
| 3    | Terms and definitions  |                                       | 1           |
| 4    | Principle  |                                       | 2           |
| 5    | Material   |                                       | 2           |
| 6    | Apparatus  |                                       | 2           |
| 7    | Sampling   |                                       | 2           |
| 8    | 8.1 Milling at (160 ± 5) ° 8.1.1 Premixing o 8.1.2 Two-roll mil 8.1.3 Pressing | f the test materials<br>lling         | 3<br>3<br>3 |
| 9    | 0 (  | it                                    |             |
| 10   | <b>Evaluation</b> 10.1 Evaluation of colouri                                   | istic properties in a white reduction | 4           |
| 11   |  |                                       |             |
| 12   | Precision  |                                       | 5           |
|      |  | n of the basic compound               |             |
|      |  |                                       |             |
|      |  |                                       |             |
|      |  |                                       |             |

#### 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 <a href="www.iso.org/directives">www.iso.org/directives</a>).

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 <a href="https://www.iso.org/patents">www.iso.org/patents</a>).

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

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT), see the following URL: Foreword — Supplementary information.

The committee responsible for this document is ISO/TC 256, *Pigments, dyestuffs and extenders*.

ISO 23900 consists of the following parts, under the general title *Pigments and extenders — Methods of* dispersion and assessment of dispersibility in plastics:

- Part 1: General introduction
- Part 2: Determination of colouristic properties and ease of dispersion in plasticized polyvinyl chloride by two-roll milling
- Part 3: Determination of colouristic properties and ease of dispersion of black and colour pigments in polyethylene by two-roll milling
- Part 4: Determination of colouristic properties and ease of dispersion of white pigments in polyethylene by two-roll milling
- Part 5: Determination by filter pressure value test
- Part 6: Determination by film test

## Pigments and extenders — Methods of dispersion and assessment of dispersibility in plastics —

#### Part 2:

# Determination of colouristic properties and ease of dispersion in plasticized polyvinyl chloride by two-roll milling

#### 1 Scope

This part of this ISO 23900 specifies a method of determining the colouristic properties of a test pigment relative to a standard, and the ease of dispersion  $DH_{PVC-P}$  of pigments from the differences in colour strength on dispersing colouring materials under various conditions in plasticized polyvinyl chloride (PVC-P) compounds.

The method is appropriate for use with organic and inorganic black and colour pigments and for pigment preparations.

The ease of dispersion determined in this way is valid only for the dispersion equipment, dispersion conditions and dispersion medium being used. The use of test conditions differing from those specified may give different results; this applies both to the absolute magnitude and to the relation between values of the ease of dispersion of various pigments. The subscript  $DH_{PVC-P}$  is therefore used to designate the value obtained as specified in this part of ISO 23900.

The principle of this part of ISO 23900 may also be used for routine quality control purposes by reference to the photometric data generated from the sheets milled at  $130\,^{\circ}$ C. For quality control purposes, the ratio of pigment to  $TiO_2$  may be agreed between the interested parties. Ratios of 1:10 for organic pigments and 0,2 to 0,5:1 for inorganic pigments are suggested as convenient and widely used standard ratios.

Annex A is informative and gives a description of a suitable basic compound.

#### 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 787-24:1985, General methods of test for pigments and extenders — Part 24: Determination of relative tinting strength of coloured pigments and relative scattering power of white pigments — Photometric methods

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

ISO 18314-1<sup>1)</sup>, Analytical colorimetry — Part 1: Practical colour measurement

EN 12877-1, Colouring materials in plastics — Determination of colour stability to heat during processing of colouring materials in plastics — Part 1: General introduction

#### 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

<sup>1)</sup> To be published.