

**Pigments and extenders - Methods of dispersion and assessment of dispersibility in plastics - Part 4: Determinations of colouristic properties and ease of dispersion of white pigments in polyethylene by two-roll milling**

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## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 13900-4:2004 sisaldab Euroopa standardi EN 13900-4:2004 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 27.08.2004 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 13900-4:2004 consists of the English text of the European standard EN 13900-4:2004.</p> <p>This document is endorsed on 27.08.2004 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p><b>Käsitlusala:</b></p> <p>This Part of EN 13900 specifies a method of determining the colouristic properties of a test pigment in polyethylene (PE) relative to a standard, and the ease of dispersion DHPE of pigments from the differences in tinting strength of dispersing colouring materials under various conditions.</p>	<p><b>Scope:</b></p> <p>This Part of EN 13900 specifies a method of determining the colouristic properties of a test pigment in polyethylene (PE) relative to a standard, and the ease of dispersion DHPE of pigments from the differences in tinting strength of dispersing colouring materials under various conditions.</p>
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**Võtmesõnad:** binders, castings, colorimetric analysis, colorimetric properties, materials, optical dispersion power, paints, pigments, plasticized polyvinyl chloride, plastics, polyethylene, polyvinyl chloride, properties, pvc-p, rolling, suspensions, testing, white pigments

English version

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assessment of dispersibility in plastics - Part 4: Determination of  
colouristic properties and ease of dispersion of white pigments  
in polyethylene by two-roll milling**

Pigments et matières de charge - Méthodes de dispersion  
et évaluation de l'aptitude à la dispersion dans les  
plastiques - Partie 4: Détermination des propriétés  
colorimétriques et de la facilité de dispersion des pigments  
blancs dans le polyéthylène par calandrage sur bicylindre

Pigmente und Füllstoffe - Dispergiervverfahren und  
Beurteilung der Dispergierbarkeit in Kunststoffen - Teil 4:  
Bestimmung der koloristischen Eigenschaften und der  
Dispergierhärte von Weißpigmenten in Polyethylen im  
Walztest

This European Standard was approved by CEN on 2 February 2004.

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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 Central Secretariat has the same status as the official versions.

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

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## Foreword

This document (EN 13900-4:2004) has been prepared 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 October 2004, and conflicting national standards shall be withdrawn at the latest by October 2004.

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

## 1 Scope

This Part of EN 13900 specifies a method of determining the colouristic properties of a test pigment in polyethylene (PE) relative to a standard, and the ease of dispersion  $DH_{PE}$  of pigments from the differences in tinting strength of dispersing colouring materials under various conditions.

The method is appropriate for use with white pigments.

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 can 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  $DH_{PE}$  is therefore used to designate the value obtained as specified in this Part of EN 13900.

## 2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text, and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN ISO 787—24:1995, *General method of tests for pigments and extenders — Part 24: Determination of relative tinting strength of coloured pigments and relative scattering power of white pigments — Photometric methods (ISO 787-24:1985)*.

EN ISO 15528, *Paints, varnishes and raw materials for paints and varnishes — Sampling (ISO 15528:2000)*.

ISO 7724—2:1984, *Paints and varnishes — Colorimetry — Part 2: Colour measurement*.

## 3 Terms and definitions

For the purposes of this European Standard, the following term and definition applies.

### 3.1

#### **ease of dispersion**

( $DH_{PE}$ )

measure of the rate at which or the degree to which a pigment or extender achieves a given level of dispersion when dispersed in a plastics material.

The  $DH_{PE}$  is derived from the increase in tinting strength achieved by two-roll milling as specified in 8.2, relative to the tinting strength achieved as specified in 8.1.

## 4 Principle

Using a two-roll mill, the pigment under test is dispersed at an appropriate temperature in the polymer. The cooled milled sheet obtained in this way is then subjected to the higher shearing forces resulting from two-roll milling at a narrower gap width. The resulting increase in tinting strength is a measure of the ease of dispersion  $DH_{PE}$ .