



SLOVENSKI STANDARD SIST EN 13900-1:2003

01-april-2003

Dij[a Ybh]b`dc`b]U!`A YrcXYX]gdYfn]Y`b`i [cHj`Ub`YX]gdYfn]j bcgh]j `d`Ugh] b]\
a UgU `!`%`XY. `Gd`c`yb]i j cX

Pigments and extenders - Methods of dispersion and assessment of dispersibility in plastics - Part 1: General introduction

Pigmente und Füllstoffe - Dispergierverfahren und Beurteilung der Dispergierbarkeit in Kunststoffen - Teil 1: Allgemeine Einleitung

Pigments et matieres de charge - Méthodes de dispersion et évaluation de l'aptitude a la dispersion dans les plastiques - Partie 1: Introduction générale

[https://standards.iteh.ai/catalog/standards/sist/e458d41a-fdcd-41b5-b3b7-](https://standards.iteh.ai/catalog/standards/sist/e458d41a-fdcd-41b5-b3b7-d27116bea90b/sist-en-13900-1-2003)

[d27116bea90b/sist-en-13900-1-2003](https://standards.iteh.ai/catalog/standards/sist/e458d41a-fdcd-41b5-b3b7-d27116bea90b/sist-en-13900-1-2003)

Ta slovenski standard je istoveten z: EN 13900-1:2003

ICS:

83.040.30	Pomožni materiali in aditivi za polimerne materiale	Auxiliary materials and additives for plastics
-----------	---	--

SIST EN 13900-1:2003

en

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 13900-1:2003

<https://standards.iteh.ai/catalog/standards/sist/e458d41a-fdcd-41b5-b3b7-d27116bea90b/sist-en-13900-1-2003>

EUROPEAN STANDARD

EN 13900-1

NORME EUROPÉENNE

EUROPÄISCHE NORM

February 2003

ICS 83.040.30

English version

Pigments and extenders - Methods of dispersion and assessment of dispersibility in plastics - Part 1: General introduction

Pigments et matières de charge - Méthodes de dispersion et évaluation des caractéristiques de dispersibilité dans les plastiques - Partie 1: Introduction générale

Pigmente und Füllstoffe - Dispergiervverfahren und Beurteilung der Dispergierbarkeit in Kunststoffen - Teil 1: Allgemeine Einleitung

This European Standard was approved by CEN on 12 December 2002.

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 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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovak Republic, Spain, Sweden, Switzerland and United Kingdom.

<https://standards.iteh.ai/catalog/standards/sist/e458d41a-fdcd-41b5-b3b7-d27116bea90b/sist-en-13900-1-2003>



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

Management Centre: rue de Stassart, 36 B-1050 Brussels

EN 13900-1:2003 (E)**Foreword**

This document (EN 13900-1:2003) 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 August 2003, and conflicting national standards shall be withdrawn at the latest by August 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, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovak Republic, Spain, Sweden, Switzerland and the United Kingdom.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 13900-1:2003

<https://standards.iteh.ai/catalog/standards/sist/e458d41a-fdcd-41b5-b3b7-d27116bea90b/sist-en-13900-1-2003>

1 Scope

This part of this European Standard provides an introduction to the various parts of this European Standard which describe methods for dispersing pigments and extenders in plastics materials in order to determine their dispersion characteristics and colouristic properties.

Methods of assessing dispersion characteristics are described in the subsequent parts of this European Standard.

The various procedures described permit comparison to be made between similar pigments (for example between a test sample and an agreed reference pigment). The results provide an indication of relative dispersibility under practical conditions of use, provided that the test procedure and plastics material selected are appropriate.

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 13900-2, *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.*

EN 13900-3, *Pigments and extenders - Methods of dispersion and assessment of dispersibility in plastics – Part 3: Determination of colouristic properties and ease of dispersion of black and colour pigments in polyethylene by two-roll milling.*

prEN 13900-4, *Pigments and extenders - Methods of dispersion and assessment of dispersibility in plastics – Part 4: Determination of colouristic properties and ease of dispersion of white pigments in polyethylene by two-roll milling.*

3 Terms and definitions

For the purposes of this part of this European Standard the following terms and definitions apply.

3.1 dispersibility

ease and extent to which pigments or extenders can, by wetting, elimination of air and by mechanical disagglomeration, be distributed homogeneously in a plastics material under standardized conditions of processing

NOTE Dispersibility is generally assessed in terms of colour strength development, colouristic properties and frequency and size of agglomerates.

3.2 ease of dispersion (DH)

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

3.3 aggregate

primary particles so joined together that they cannot be broken down during normal pigment/extender dispersing processes

EN 13900-1:2003 (E)**3.4****agglomerate**

primary particles or aggregates or a mixture of the two so joined together that they may be broken down during normal pigment/extender dispersing processes

4 Methods of dispersion and methods of assessment**4.1 Preliminary agreements**

Agreement shall be reached between the interested parties on:

- a) the plastics material to be used;
- b) the method of dispersion;
- c) the assessment method;

as all of these influence the results.

4.2 Plastics materials

A large variety of plastics materials is available with greatly differing properties. It is therefore not possible, in this part of this European Standard, to stipulate which plastics material shall be used. In other parts of this European Standard, general indications are given as to the relevance of the procedures described to the most commonly used plastics materials.

(standards.iteh.ai)

4.3 Methods of dispersion

There are many differences in the equipment and processing conditions used in practice for dispersing pigments and extenders in plastics materials. It is therefore not possible to specify a single procedure for dispersing a pigment for testing purposes. In other parts of this European Standard, general indications are given as to the relevance in practice of the procedure described.

4.4 Methods of assessment

There are different methods of characterising dispersibility of pigments in plastics materials. These are described in the relevant parts of this European Standard.

5 Procedures**5.1 Determination of colouristic properties and ease of dispersion in plasticized polyvinyl chloride by two-roll milling**

Using a two-roll mill, the pigment under test is dispersed at $160\text{ °C} \pm 5\text{ °C}$ in the basic compound. The milled sheet obtained in this way is then subjected to the higher shearing forces resulting from two-roll milling at $130\text{ °C} \pm 5\text{ °C}$. The resulting increase in colour strength is a measure of the ease of dispersion DH_{PVC-P} .

For details see EN 13900-2.

5.2 Determination of colouristic properties and ease of dispersion of black and colour pigments in polyethylene by two-roll milling

Using a two-roll mill, the pigment under test is dispersed at a appropriate temperature in the polymer. The 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 colour strength is a measure of the ease of dispersion DH_{PE} .

For details see EN 13900-3.

5.3 Determination of colouristic properties and ease of dispersion of white pigments in polyethylene by two-roll milling

Using a two-roll mill, the pigment under test is dispersed at a appropriate temperature in the polymer. The 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} .

For details see prEN 13900-4.

5.4 Determination of dispersibility of pigments by filter value test

The increase in pressure when pressing a pigmented polymer of defined composition through a filter pack in an extruder under defined conditions is a measure of the dispersibility of the pigment under test.

For details see prEN 13900-5 (draft standard in preparation).

5.5 Determination of dispersibility of pigments by film test

The assessment based on the size and frequency of agglomerates in a pigmented polymer film of defined composition and thickness is a measure of the dispersibility of the pigment under test. The method can be used both for transparent and non-transparent films.

For detail see prEN 13900-6 (draft standard in preparation).

iTeh STANDARD PREVIEW (standards.iteh.ai)

6 Precision

Statements on precision of the methods are given in the subsequent parts of this European Standard. These will generally be limited by the dependence of the results on the choice of plastics material and the method of dispersion employed.

<https://standards.iteh.ai/catalog/standards/sist/e458d41a-fdcd-41b5-b3b7-d27116bea90b/sist-en-13900-1-2003>