SLOVENSKI STANDARD
oSIST prEN 15458:2020

01-junij-2020

Barve in laki - Laboratorijska metoda za preskušanje učinkovitosti konzervansov filma v premazih proti algam

Paints and varnishes - Laboratory method for testing the efficacy of film preservatives in a coating against algae

Beschichtungsstoffe - Laborverfahren für die Prüfung der Wirksamkeit von Filmkonservierungsmitteln in einer Beschichtung gegen Algen

Peintures et vernis - Méthode d'essai en laboratoire permettant de déterminer l'efficacité des préservateurs du feuil d'un revêtement contre les algues

Ta slovenski standard je istoveten z: **prEN 15458**

ICS:

87.040	Barve in laki	Paints and varnishes

oSIST prEN 15458:2020 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

DRAFT
prEN 15458

April 2020

ICS 87.040

Will supersede EN 15458:2014

English Version

Paints and varnishes - Laboratory method for testing the efficacy of film preservatives in a coating against algae

Peintures et vernis - Méthode d'essai en laboratoire permettant de déterminer l'efficacité des produits de préservation du feuil d'un revêtement contre les algues

Beschichtungsstoffe - Laborverfahren für die Prüfung der Wirksamkeit von Filmkonservierungsmitteln in einem Beschichtungstoff gegen Algen

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 139.

If this draft becomes a European Standard, 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.

This draft European Standard was established by CEN 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.

Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

Warning : This document is not a European Standard. It is distributed for review and comments. It is subject to change without notice and shall not be referred to as a European Standard.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Contents

Page

European foreword

This document (prEN 15458:2020) has been prepared by Technical Committee CEN/TC 139 “Paints and varnishes”, the secretariat of which is held by DIN.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 15458:2014.

The main changes compared to the previous versionare as follows:

a) new terms and definitions added;

b) use of terms and definitions throughout the document corrected;

c) document editorially revised.

Introduction

This document identifies criteria to assess efficacy of film preservatives in a coating against fungi. The results of the method allow evaluation of an active substance with regard to its inclusion in Annex I of the Biocidal Product Regulation 528/2012 (Regulation EU No 528/2012 of the European Parliament and of the Council of 22 May 2012 concerning the placing of biocidal products on the market – BPR).

The characteristics of the biocide treated coating material should conform to national regulations with regard to health, safety and the environment.

1 Scope

This document specifies a laboratory test method for determining the biocidal/biostatic efficacy of single active substances or combinations thereof used in film preservatives in a coating against algal growth. The document does not apply to coatings not susceptible to algal growth. The test method comprises only active substances for film preservation, not the protection of the substrate itself, e.g. wood, which is dealt with in another standard. The test method is applicable for active substances used for wood and masonry coatings. It is not applicable to marine coatings.

Safety, health and environmental aspects are not in the scope of this document.

Determination of the performance of film preservatives in coatings by applying ageing procedures is not within the scope of this document.

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.

EN 12469, *Biotechnology — Performance criteria for microbiological safety cabinets*

EN 23270, *Paints and varnishes and their raw materials — Temperatures and humidities for conditioning and testing (ISO 3270)*

EN ISO 1513, *Paints and varnishes — Examination and preparation of test samples (ISO 1513)*

3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— IEC Electropedia: available at https://www.electropedia.org/

— ISO Online browsing platform: available at https://www.iso.org/obp

3.1
active substance
substance or micro-organism that has an action on or against harmful organisms

[SOURCE: Biocidal Product Regulation (BPR, Regulation (EU) 528/2012), Article 3.1 (c), modified – the article “a” between “or” and “micro-organism” was deleted]

3.2
sample
portion of coating material to be tested

3.3
test sample
strip of filter paper without biocidal effect coated with the coating material to be tested

Note 1 to entry: See also Figure A.1.

3.4
test specimen
punched-out portion of a test sample

Note 1 to entry: See also Figure A.1.

4 Principle

For the determination of the algicidal efficacy of film preservatives in a coating, the coating material is applied to a substrate, conditioned according to EN 23270, placed onto an agar surface, inoculated with a standard algal suspension and incubated over a certain period of time under conditions appropriate for algal growth. Conclusions can be drawn with regard to the algicidal efficacy of the film preservatives in a coating from the intensity of the algal growth on the coated surface of the test specimen after incubation. The method described in this document is a semiquantitative, comparative method between coatings with and without film preservatives.

5 Apparatus and materials

5.1 Cutting device for preparing the test specimens (coated filter paper, with a diameter of 55 mm).

5.2 Autoclave for sterilization.

5.3 Incubator, capable of maintaining (23 ± 2) °C.

5.4 Pipette, in the range between 100 µl to 1 000 µl, with sterile tips or combi-tips of 12,5 ml.

5.5 Filter paper without biocidal effect (e.g. cellulose with a pore size of 0,45 µm and a thickness of 650 µm).

5.6 Automatic welding apparatus to seal the bags.

5.7 Sterilized glass bottles (100 ml, 0,5 l, 1 l).

5.8 Sterilized test tubes or **other sterilized glassware** for preparing the slant agar cultures.

5.9 Bold modified Basal medium as specified in the method (see 8.1).

5.10 Stock solution (see 8.2).

5.11 Culture flask with cap (0,5 l or 1 l).

5.12 Laboratory balance, capable of weighing to an accuracy of 0,1 g.

5.13 Microscope

5.14 Device to determine cell count (commercially available counting chamber, e.g. Thoma chamber).

5.15 Device for applying the coating

5.16 Sterile Petri dishes (with a diameter of 94 mm and a height of 16 mm).

5.17 Sterile tweezers

5.18 Sterile water

5.19 Class 1 microbiological safety cabinet according to EN 12469.

5.20 Luxmeter

5.21 Cold white or **daylight lamp**

6 Microorganisms

— Blue-green algae *Nostoc commune* SAG[1)] 1453-3;

— Blue-green algae *Gloeocapsa atrata* Kützing (syn. *Anacystis montana*) CCAP[2)] 1430/1;

— Green algae *Klebsormidium flaccidum* SAG 335-5*;*

— Green algae *Stichococcus bacillaris* SAG 379-1a = CCAP 379/1A.

From these four microorganisms one blue-green and one green algae are selected.

7 Sampling and preparation of test samples and of test specimens

7.1 Sampling

Take a representative sample of the coating material or coating system for testing in accordance with EN ISO 1513.

7.2 Preparation of test samples (see Annex A)

Coat a strip of filter paper without biocidal effect with the coating material/system to be tested. The application rate shall be that recommended by the coating manufacturer for normal use.

7.3 Conditioning of the test samples

Condition the test samples in a horizontal position for at least 5 days at (23 ± 2) °C and (50 ± 5) % relative humidity, in accordance with EN 23270.

NOTE The conditioning time might vary according to the coating material and end use corresponding to information given by the manufacturer.

---

1) SAG = (Sammlung von Algenkulturen (Culture Collection of Algae), Göttingen; available at: Georg-August Universität Göttingen, Germany.

2) CCAP = Culture Collection of Algae and Protozoa; SAMS Research Services Ltd, Scottish Marine institute Oban, Scotland, UK.

7.4 Preparation and number of test specimens

After conditioning, three test specimens, each of a diameter of 55 mm shall be prepared from the test samples. The test specimens shall be sealed in a plastics bag and sterilized using gamma radiation of ≥ 10 kGy. Other methods of sterilization may be agreed upon between the parties.

For each test series, three test specimens coated with coating material containing the film preservative, three test specimens coated with the same coating material without film preservative and three test specimens of the uncoated substrate shall be tested.

8 Procedure

8.1 Preparation of Bold's Basal Medium [3)]

For the algal nutritive solution the following substances are required:

a) 10 ml each of stock solutions a) to f) in 8.2;

b) 1 ml each of trace element stock solutions g) to j) in 8.2;

c) 940 ml demineralized or distilled water;

d) 15 g agar (only for the solid nutritive medium).

The solution shall be sterilized in the autoclave. For the test both solid (with 1,5 % agar) and also liquid nutritive medium are required.

8.2 Preparation of the stock solutions

Stock solutions:

a)	$NaNO_3$	10,0 g	Distilled water	400 ml
b)	$CaCl_2 \cdot 2H_2O$	1,0 g	Distilled water	400 ml
c)	$MgSO_4 \cdot 7H_2O$	3,0 g	Distilled water	400 ml
d)	K_2HPO_4	3,0 g	Distilled water	400 ml
e)	KH_2PO_4	7,0 g	Distilled water	400 ml
f)	NaCl	1,0 g	Distilled water	400 ml

3) Bischoff, H. W. & Bold, H. C. (1963): Phycological Studies. IV. Some soil algae from Enchanted Rock and related algal species. – Univ. Texas Publ. 6318: p. 1-95