SLOVENSKI STANDARD
SIST EN 16105:2011

01-november-2011

Barve in laki - Laboratorijska metoda za ugotavljanje sproščanja snovi iz premazov ob občasnem stiku z vodo

Paints and varnishes - Laboratory method for determination of release of substances from coatings in intermittent contact with water

Beschichtungsstoffe - Laborverfahren zur Bestimmung der Freisetzung von Substanzen aus Beschichtungen in intermittierendem Kontakt mit Wasser

Peintures et vernis - Méthode de laboratoire pour la détermination de la libération de substances provenant de revêtements en contact avec l'eau par intermittence

Ta slovenski standard je istoveten z: **EN 16105:2011**

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87.040	Barve in laki	Paints and varnishes

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English Version

Paints and varnishes - Laboratory method for determination of release of substances from coatings in intermittent contact with water

Peintures et vernis - Méthode de laboratoire pour la détermination de la libération de substances provenant de revêtements en contact avec l'eau par intermittence

Beschichtungsstoffe - Laborverfahren zur Bestimmung der Freisetzung von Substanzen aus Beschichtungen in intermittierenden Kontakt mit Wasser

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Foreword

This document (EN 16105:2011) has been prepared 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of an identical text or by endorsement, at the latest by March 2012, and conflicting national standards shall be withdrawn at the latest by March 2012.

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Introduction

Leaching of substances from coatings into water needs to be quantified to enable an environmental risk assessment for the use of substances in coating materials. Substances can be leached from coatings, particularly by driving rain, and transferred into the environment.

1 Scope

This European Standard specifies a laboratory method to determine the leaching behaviour of substances from coatings into water over defined time intervals.

The release of substances from coatings under natural conditions cannot be determined with this method.

2 Normative references

The following referenced documents are indispensable for the application 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 23270, *Paints and varnishes and their raw materials — Temperatures and humidities for conditioning and testing (ISO 3270:1984)*

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

3 Terms and definitions

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

3.1
substance
single chemical element or compound, or a complex structure of compounds, that is contained in the coating and can potentially be extracted from the coating via water contact

3.2
target substance
substances to be tested according to 6.3.2

NOTE One or more target substances may be defined. For example, biocides can be the target substances (see Annex B).

3.3
biocide
additive added to a coating material to prevent organisms responsible for microbiological degradation from attacking a coating material or a film thereof

[EN ISO 4618:2006]

NOTE A list of biocides is given in Annex I and IA of the Biocidal Products Directive 98/8/EC (Directive 98/8/EC of the European Parliament and of the Council of 16 February 1998 concerning the placing of biocidal products on the market – BPD).

3.4
coating
continuous layer formed from a single or multiple application of a coating material to a substrate

[EN ISO 4618:2006]

3.5
coating material
product, in liquid, paste or powder form, that, when applied to a substrate, forms a film possessing protective, decorative and/or other specific properties

[EN ISO 4618:2006]

3.6
test specimen
body to be tested consisting of substrate with coating

3.7
emission
release of substances from a coating, which pass through the external surface of the coating under specific conditions into the environment

NOTE The emission is expressed in units of released mass per surface area, i.e. milligrams per square metre.

3.8
leaching
release of substances from a coating, which pass through the external surface of the coating under specific conditions into water

NOTE The leaching is expressed in units of released mass per surface area, i.e. milligrams per square metre.

3.9
immersion
exposure of test specimen to the leachant

3.10
immersion cycle
i
sequence consisting of 1 h immersion, 4 h drying and 1 h immersion

NOTE *i* is the running number of immersion cycles.

3.11
eluate
solution obtained by one immersion

3.12
merged eluate
solution obtained at a specific immersion cycle, consisting of the eluates of the two immersions

3.13
specific emission
E
released mass of a target substance from a coating through the surface during a specific immersion cycle

NOTE The unit is mass per surface area, i.e. milligrams per square metre.

3.14
leachant
liquid that is brought into contact with the test specimen in the leaching procedure

NOTE Standard leachant as specified in 4.1.

4 Reagents

4.1 Standard leachant.

Deionised water with a pH-value of (6 ± 1) and a water temperature of (23 ± 2) °C shall be used.

5 Apparatus

5.1 General

Check the materials and equipment specified in 5.2.1 to 5.2.6 before use for proper operation and absence of interfering elements that might affect the results of the test.

The equipment specified in 5.2.2 to 5.2.5 shall also be calibrated.

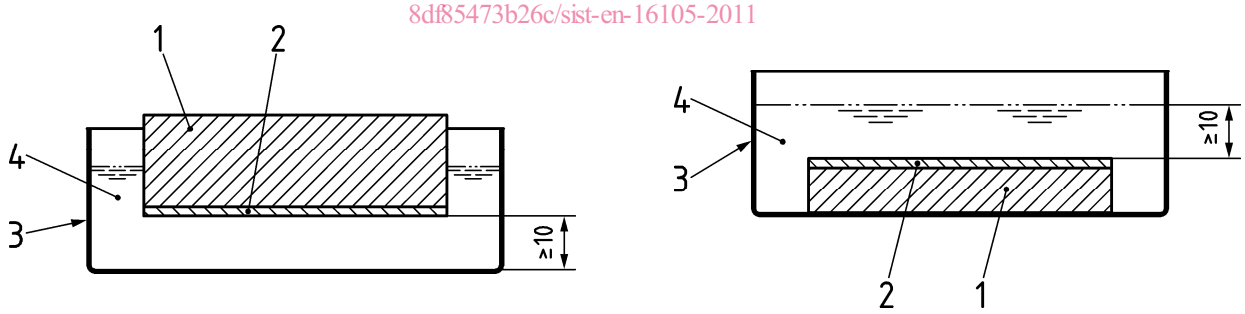
5.2 Equipment

5.2.1 Immersion container

The container for immersion shall be made of a material inert to the target substances in the eluates (e.g. glass, PTFE coated). The immersion container shall be large enough to allow the test specimens to have the coated face completely exposed to water and contain 25 l water per square metre exposed face. The water column below (see Figure 1 a)) or above (see Figure 1 b)) the test surface shall be ≥ 10 mm.

NOTE For example, a test specimen of 100 cm^2 requires 250 ml water.

Dimensions in millimetres



a) water column below **b) water column above**

Key
1 substrate
2 coating
3 immersion container
4 leachant

Figure 1 — Possible orientations of the test specimen in the immersion container during the immersion process

5.2.2 Analytical balance

Analytical balance, with an accuracy of ± 0,1 g.