SLOVENSKI STANDARD
oSIST prEN ISO 7012-1:2024

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Barve in laki - Določanje konzervansov v premazih, topnih v vodi - 1. del: Določanje prostega formaldehida v pločevinki/posodi (ISO/DIS 7012-1:2024)

Paints and varnishes - Determination of preservatives in water-dilutable coating materials - Part 1: Determination of in-can free formaldehyde (ISO/DIS 7012-1:2024)

Lacke und Anstrichstoffe - Bestimmung von Konservierungsmitteln in wasserverdünnbaren Beschichtungsstoffen - Teil 1: Bestimmung des freien Formaldehyds in der Dose (ISO/DIS 7012-1:2024)

Peintures et vernis - Dosage des agents de préservation dans les produits de peinture diluables à l'eau - Partie 1: Dosage du formaldéhyde libre en pot (ISO/DIS 7012-1:2024)

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ICS:

87.040	Barve in laki	Paints and varnishes

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DRAFT International Standard

ISO/DIS 7012-1

Paints and varnishes — Determination of preservatives in water-dilutable coating materials —

Part 1: Determination of in-can free formaldehyde

ICS: 87.040

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ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

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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 www.iso.org/directives).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 35, *Paints and varnishes*, Subcommittee SC 16, *Chemical analysis*.

A list of all parts in the ISO 7012 series can be found on the ISO website.

Paints and varnishes — Determination of preservatives in water-dilutable coating materials —

Part 1: Determination of in-can free formaldehyde

1 Scope

The method describes the quantitative determination of the concentration of in-can free formaldehyde in water-dilutable coating materials.

NOTE The standard document can also be applied for polymer dispersions.

The determination method A for in-can free formaldehyde can be only of limited suitability for pigmented systems, as the inherent coloration of the material may have an influence on the detection.

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.

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

ISO 3696, *Water for analytical laboratory use — Specification and test methods*

ISO 4618, *Paints and varnishes — Vocabulary*

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

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:

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

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

3.1
ready for use
state of a product when it is mixed in accordance with the manufacturer's instructions in the correct proportions and thinned if required using the correct thinners so that it is ready for application by the approved method

[SOURCE: ISO 11890-2:2020, 3.47]

3.2
in-can free formaldehyde content
concentration of formaldehyde in [mg/kg] which is available in the coating as in-can preservative as determined by the method A according to 7.3, i.e. photometric detection after derivatisation with acetylacetone, or by method B according to 7.5, i.e. liquid chromatography after derivatisation with DNPH, or by the method C according to 7.6, i.e. liquid chromatography with post-column derivatisation with acetylacetone, using water as an extraction solvent for all three method.

Note 1 to entry: It corresponds to the amount of formaldehyde in milligrams, based on 1 kg of coating material or polymer dispersion, which is available unbound in the sample at the time of derivatisation.

Note 2 to entry: The unit milligram per kilogram corresponds to the unit ppm. The unit used in this document is milligrams per kilogram.

Note 3 to entry: Due to the fact that the free formaldehyde is in equilibrium with bound formaldehyde and the equilibrium can be influenced by the solvent, the content of free formaldehyde in water may differ from that in another solvent. Definition 3.1 is only valid with respect to water as extraction solvent.

3.3
in-can total formaldehyde content
concentration in [mg/kg]) of free and bound formaldehyde in the coating-material

3.4
bound formaldehyde content
concentration of formaldehyde (in [mg/kg] remaining bound to the depot substance after equilibrium is established between free formaldehyde and the depot substances, and which could potentially be released by a formaldehyde depot substance (difference between total formaldehyde concentration and free formaldehyde concentration)

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

[SOURCE: EN ISO 4618:2023-, term 3.48]

3.6
water-dilutable coating material
coating material (3.5) in which the binder is soluble in water

[SOURCE: EN ISO 4618:2023-05, term 2.272]

3.7
formaldehyde depot substance
compound that releases formaldehyde over a longer period of time

3.8
extinction
attenuation of a light beam traversing a medium through absorption and scattering. It depends on the wavelength of the radiation

[SOURCE: ISO 13320:2009, entry 3.1.7]

3.9
preservative
substance that prevents the growth of undesirable microorganisms

[SOURCE: ISO 8124-7, entry 3.6]