

<b>STN</b>	<b>Sklené a porcelánové smalty Uvoľňovanie zo smaltovaných predmetov prichádzajúcich do styku s potravinami Skúšobné metódy a medzné hodnoty (ISO 4531: 2022)</b>	<b>STN EN ISO 4531</b>  94 5064
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Vitreous and porcelain enamels - Release from enamelled articles in contact with food - Methods of test and limits (ISO 4531:2022)

Táto norma obsahuje anglickú verziu európskej normy.  
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 07/22

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Supersedes EN ISO 4531:2018

English Version

## Vitreous and porcelain enamels - Release from enamelled articles in contact with food - Methods of test and limits (ISO 4531:2022)

Émaux vitrifiés - Libération depuis les articles émaillés en contact avec les aliments - Méthode d'essai et limites (ISO 4531:2022)

Emails - Freisetzung aus emaillierten Gegenständen für den Kontakt mit Lebensmitteln - Prüfverfahren und zulässige Grenzwerte (ISO 4531:2022)

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**EN ISO 4531:2022 (E)**

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## **European foreword**

This document (EN ISO 4531:2022) has been prepared by Technical Committee ISO/TC 107 "Metallic and other inorganic coatings" in collaboration with Technical Committee CEN/TC 262 "Metallic and other inorganic coatings, including for corrosion protection and corrosion testing of metals and alloys" the secretariat of which is held by BSI.

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of an identical text or by endorsement, at the latest by November 2022, and conflicting national standards shall be withdrawn at the latest by November 2022.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN ISO 4531:2018.

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## **Endorsement notice**

The text of ISO 4531:2022 has been approved by CEN as EN ISO 4531:2022 without any modification.

# INTERNATIONAL STANDARD

# ISO 4531

Second edition  
2022-04

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## **Vitreous and porcelain enamels — Release from enamelled articles in contact with food — Methods of test and limits**

*Émaux vitrifiés — Libération depuis les articles émaillés en contact  
avec les aliments — Méthode d'essai et limites*



Reference number  
ISO 4531:2022(E)

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## ISO 4531:2022(E)

### 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](http://www.iso.org/directives)).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

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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](http://www.iso.org/iso/foreword.html).

This document was prepared by the European Committee for Standardization (CEN) Technical Committee CEN/TC 262, *Metallic and other inorganic coatings, including for corrosion protection and corrosion testing of metals and alloys*, in collaboration with ISO Technical Committee ISO/TC 107, *Metallic and other inorganic coatings*, in accordance with the agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 4531:2018), which has been technically revised.

The main changes are as follows:

- the release limit and explanatory information on release limit for aluminium has been updated;
- the Bibliography has been updated;
- the requirement to carry out testing on the same day has been added;
- the requirements of test reports have been updated.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).



## **Introduction**

The release of metal-ions from enamelled articles requires effective means of control to ensure protection against possible hazards arising from the use of improperly formulated, applied and fired enamels and/or inorganic decorations on food contact surfaces of enamelled articles used for the preparation, cooking, serving and storage of foodstuffs.

As a secondary consideration, different requirements from country to country for the control of the release of ions from the surfaces of enamelled articles present non-tariff barriers to international trade in these commodities. Accordingly, there is a need to establish internationally accepted methods of testing enamelled articles for the release of metal-ions.

# Vitreous and porcelain enamels — Release from enamelled articles in contact with food — Methods of test and limits

## 1 Scope

This document specifies a simulating method of test for determination of the release of metal-ions from enamelled articles, which are intended to come into contact with food.

This document also specifies limits for the release of metal-ions from enamelled articles, which are intended to come into contact with food.

This document is applicable to enamelled articles, including tanks and vessels, which are intended to be used for the preparation, cooking, serving and storage of food.

## 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 648, *Laboratory glassware — Single-volume pipettes*

ISO 1042, *Laboratory glassware — One-mark volumetric flasks*

ISO 3585, *Borosilicate glass 3.3 — Properties*

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

ISO 4788, *Laboratory glassware — Graduated measuring cylinders*

ISO 28764, *Vitreous and porcelain enamels — Production of specimens for testing enamels on sheet steel, sheet aluminium and cast iron*

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