

საქართველოს სტანდარტი

სსკ: 67.250; 81.060.20; 81.040.30; 97.040.60

კერამიკული ნაწარმი, მინის კერამიკული ნაწარმი და საკვებთან შეხებაში
მყოფი მინის ჭურჭელი. ტყვიისა და კადმიუმის გამოყოფა - ნაწილი 1:
გამოცდის მეთოდი

საინფორმაციო მონაცემები

1 მიღებულია და დაშვებულია გამოქმედდეს: სსიპ-საქართველოს სტანდარტებისა და მეტროლოგიის ეროვნული სააგენტოს გენერალური დირექტორის 17/12/2021 წლის № 77 განკარგულებით

2 მიღებულია „თავფურცლის“ თარგმნის მეთოდით: სტანდარტიზაციის საერთაშორისო ორგანიზაციის (ისო) სტანდარტი ისო 6486-1:2019 „კერამიკული ნაწარმი, მინის კერამიკული ნაწარმი და საკვებთან შეხებაში მყოფი მინის ჭურჭელი. ტყვისა და კადმიუმის გამოყოფა - ნაწილი 1: გამოცდის მეთოდი“

3 პირველად

4 რეგისტრირებულია: სსიპ-საქართველოს სტანდარტებისა და მეტროლოგიის ეროვნული სააგენტოს რეესტრში: 17/12/2021 წლის №268-1.3-021709

წინამდებარე სტანდარტის ნებისმიერი ფორმით გავრცელება სააგენტოს ნებართვის გარეშე აკრძალულია

საინფორმაციო ნაწილი. სრული ტექსტის სანახავად შეიძინეთ სტანდარტი.

**Ceramic ware, glass ceramic ware
and glass dinnerware in contact
with food — Release of lead and
cadmium —**

**Part 1:
Test method**

*Vaisselle en céramique, vaisselle en vitrocéramique et vaisselle de
table en verre en contact avec les aliments — Émission de plomb et de
cadmium —*

Partie 1: Méthode d'essai





COPYRIGHT PROTECTED DOCUMENT

© ISO 2019

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Fax: +41 22 749 09 47
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

Page

Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Principles	3
5 Reagents and materials	4
5.1 Reagents.....	4
5.2 Materials and supplies.....	4
6 Apparatus	4
6.1 Analytical techniques.....	4
6.2 Accessories.....	4
7 Sampling	5
7.1 Priority.....	5
7.2 Sample size.....	5
7.3 Preparation and preservation of test samples.....	5
8 Procedures	5
8.1 Determination of reference surface area for flatware.....	5
8.2 Preparation of articles which cannot be filled.....	5
8.3 Extraction.....	6
8.3.1 Extraction temperature.....	6
8.3.2 Leaching.....	6
8.3.3 Sampling of the extraction solution for analysis.....	6
8.3.4 Drinking rim test.....	6
8.4 Articles used in repeated contact with foodstuffs.....	6
9 Analytical methods	7
9.1 General.....	7
9.2 Calculation of release of lead and cadmium from ceramic hollowware.....	7
9.3 Calculation of release of lead and cadmium from flatware.....	7
9.4 Calculation of release of lead and cadmium from drinking rim.....	7
10 Test report	7
Annex A (informative) Analytical method using ICP-MS	9
Annex B (informative) Analytical method using FAAS	17
Annex C (informative) Analytical method using ICP-OES	20
Bibliography	25

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).

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).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

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 166, *Ceramic ware, glassware and glass ceramic ware in contact with food*.

This third edition cancels and replaces the second edition (ISO 6486-1:1999), which has been technically revised. The main changes to the previous edition are as follows:

- technical procedures updated and permissible limits for metal release brought in line with current regulatory limits in major markets and in harmony with as many regional or national standards as is practical.

A list of all parts in the ISO 6486 series can be found on the ISO website.

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.

საინფორმაციო ტექნოლოგიების განვითარების ეროვნული ცენტრი

Introduction

Release of potentially toxic metals, particularly lead and cadmium, from ceramic and glassware surfaces is an issue which requires effective means of control to ensure the protection of the population against possible hazards arising from the use of improperly formulated and/or processed ceramic, glass-ceramic and glass dinnerware used for the preparation, cooking, serving and storage of food and beverages.

As a secondary consideration, different requirements from country to country for the control of the release of toxic metals from the surfaces of ceramic ware present non-tariff barriers to international trade in these commodities. Accordingly, there is a need to maintain internationally accepted methods of testing ware for the release of potentially toxic metals.

The revision of this document was necessary to take into consideration recent developments in the application of the analytical technique inductively coupled plasma mass spectrometry (ICP-MS).

The test method is a combination of a leach procedure, which is the core of the document, and of the analytical method.

ICP-MS is the reference analytical method as it is generally considered to be the most accurate analytical method, although other methods have their own merits. Flame atomic absorption is kept as an alternative method. Other validated analytical methods, such as graphite furnace atomic absorption spectrometry (GFAAS) or inductively coupled optical emission spectrometry (ICP-OES), may also be used, considering the appropriate accuracy to the level of release of lead and cadmium to be measured.

The limits in ISO 6486-2 are set on the basis of a single extraction into the extraction solution. This document specifies that all repeat-use articles are tested three times with fresh extraction solution and the results of the third test reported for conformity with the permissible limits. It has been demonstrated that metal release into the third extraction is always less than the release into the first extraction. Therefore, data from a third extraction will show false conformity with the limits specified in ISO 6486-2. New limits that are appropriate to third extraction data are currently being agreed.