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Third edition
2019-08

Glass hollowware in contact with food — Release of lead and cadmium —

Part 1: Test method

*Vaisselle creuse en verre en contact avec les aliments — Émission de
plomb et de cadmium —*

Partie 1: Méthode d'essai



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

This third edition cancels and replaces the second edition (ISO 7086-1:2000), which has been technically revised. The main changes to the previous edition are as follows:

- technical procedures have been updated;
- permissible limits for metal release have been 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 7086 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.

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Introduction

Release of potentially toxic metals, particularly lead and cadmium, from 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 glass hollowware used for the preparation, 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 glassware present non-tariff barriers to international trade in these commodities. Accordingly, there is a need to maintain internationally accepted methods of testing glassware for potentially toxic metal release.

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 as 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 7086-2 are set on the basis of a single extraction into the extraction solution. ISO 7086-2:2000, 8.5 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 7086-2. New limits that are appropriate to third extraction data are currently being agreed.