

INTERNATIONAL ISO  
STANDARD 4531-2

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## **Vitreous and porcelain enamels — Release of lead and cadmium from enamelled ware in contact with food —**

### **Part 2: Permissible limits**

*Émaux vitrifiés — Émission de plomb et de cadmium d'articles émaillés en  
contact avec les aliments —*

*Part 2: Limites admissibles*



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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 4531-2 was prepared by Technical Committee ISO/TC 107, *Metallic and other inorganic coatings*, Subcommittee SC 6, *Vitreous and porcelain enamels*.

ISO 4531 consists of the following parts, under the general title *Vitreous and porcelain enamels — Release of lead and cadmium from enamelled ware in contact with food*:

- *Part 1: Method of test*
- *Part 2: Permissible limits*

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## Introduction

The problem of lead and cadmium release from enamelled ware requires effective means of control to ensure the protection of the population against possible hazards arising from the use of improperly formulated, applied and fired enamels and/or decorations on the food contact surfaces of enamelled ware used for the preparation, serving and storage of foodstuffs.

As a secondary consideration, different requirements from country to country for the control of the release of toxic materials from the surfaces of enamelled ware present non-tariff barriers to international trade in these commodities. Accordingly, there is a need to establish internationally accepted permissible limits for the release of lead and cadmium from enamelled ware.

An expert panel convened by the World Health Organization (WHO) met in Geneva, in June 1976, and recommended the adoption of sampling methods, testing procedures and limits for the release of toxic materials from ceramic ware <sup>[3]</sup>. A further meeting was convened by the WHO in November 1979 <sup>[4]</sup>.

The permissible limits given in this International Standard are based on those WHO recommendations, because it was the sense of the WHO meeting that the term "ceramic" includes ceramics, glass, vitreous enamels and glass ceramics. However, the permissible limits have been reduced. As the capability of the industry increases, further efforts will be made to reduce these limits for lead and cadmium release.

If WHO recommendations were to include hot testing at any time then a new edition of this part of ISO 4531 should be considered. For the time being the cold test is also applied for cookware with reduced limit values compared with those specified for other foodware <sup>[5]</sup>.