
Dentistry — Corrosion test methods for dental amalgam

*Médecine bucco-dentaire — Essais de corrosion des amalgames
dentaires*



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Published in Switzerland

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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).

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 on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 106, *Dentistry*, Subcommittee SC 1, *Filling and restorative materials*.

This is the first edition of ISO/TS 17988, *Dentistry — Corrosion test methods for dental amalgam*. Part of the subject matter in this Technical Specification was formerly contained in two annexes to ISO 24234:2004, *Dentistry — Mercury and alloys for dental amalgam*.

Introduction

Dental amalgam alloy and dental mercury are the essential and only components of dental amalgam restorative material. This Technical Specification, of which this is the first edition, gives the practical details of three test methods for the measurement of the resistance to corrosion of dental amalgam. These corrosion test methods are laboratory procedures for evaluating the relative performances of dental amalgam alloy products. They are designed to produce a measurable effect (and differences between products) within a relatively short time period, a time period appropriate for a comparative laboratory evaluation.

The results of these tests are not intended to be used directly for any biocompatibility claims, for which their use is inappropriate.

Should other corrosion test procedures emerge as suitable for application to dental amalgam and use in the comparative evaluations of products, they will be included in future editions of this Technical Specification.

Dentistry — Corrosion test methods for dental amalgam

1 Scope

This Technical Specification gives details of test procedures for evaluating the corrosion resistance of dental amalgam produced from a dental amalgam alloy product.

It is applicable to dental amalgam formed from products that are within the scope of ISO 24234, *Dentistry — Dental amalgam*.

It is not applicable to dental metallic materials that are within the scope of ISO 22674, *Dentistry — Metallic materials for fixed and removable restorations and appliances*.

This Technical Specification is not applicable to metallic materials in which an alloy powder reacts with a liquid alloy to produce a solid metallic material intended for dental restoration.

NOTE Dental mercury is at least 99,99 % pure, and as such it is a metallic element of high commercial purity, and not an alloy.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 286-2, *Geometrical product specifications (GPS) — ISO code system for tolerances on linear sizes — Part 2: Tables of standard tolerance classes and limit deviations for holes and shafts*

ISO 1942, *Dentistry — Vocabulary*

ISO 3585, *Borosilicate glass 3.3 — Properties*

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

ISO 6344-1, *Coated abrasives — Grain size analysis — Part 1: Grain size distribution test*

ISO 7488, *Dental amalgamators*

ISO 13565-2, *Geometrical Product Specifications (GPS) — Surface texture: Profile method; Surfaces having stratified functional properties — Part 2: Height characterization using the linear material ratio curve*

ISO 13897, *Dentistry — Amalgam capsules*

ISO 24234, *Dentistry — Dental amalgam*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 1942 and the following apply.

3.1

dental amalgam alloy

alloy in fine particles, composed mainly of silver, tin and copper, which when mixed with dental mercury produces a dental amalgam for dental restoration