

INTERNATIONAL STANDARD

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Dental casting alloys with noble metal content of at least 25 % but less than 75 %

*Alliages dentaires à couler avec une teneur en métaux précieux supérieure
ou égale à 25 % et strictement inférieure à 75 %*



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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.

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 8891 was prepared by Technical Committee ISO/TC 106, *Dentistry*, Subcommittee SC 2, *Prosthetic materials*.

This third edition cancels and replaces the second edition (ISO 8891:1993), of which it constitutes a technical revision.

Annexes A and B form an integral part of this International Standard. Annex C is for information only.

Introduction

Specific qualitative and quantitative requirements for freedom from biological hazard are not included in this International Standard but it is recommended that, in assessing possible biological hazards, reference should be made to ISO 10993-1 and ISO 7405.

At this time it has not been possible to set requirements for corrosion and tarnish resistance. However it is recommended that the static immersion test given in annex A should be used to provide information on the type and quantity of metal ions which leach from a dental casting alloy and the sodium sulfide tarnish test given in Annex B should be used to provide information on the probability of surface alteration as a result of tarnish.

When an International Standard (e.g. ISO 10271) for corrosion and tarnish testing of dental casting alloys is published, the test procedures given in annexes A and B will be revised to conform with that International Standard, and requirements for maximum permissible corrosion and tarnish will be set. At that time, the implementation of a test on the electrochemical behaviour of dental casting alloys should also be considered.

Dental casting alloys with noble metal content of at least 25 % but less than 75 %

1 Scope

This International Standard gives the classification of, and specifies requirements and test methods for, dental casting alloys with a noble metal content of at least 25 % (mass fraction) up to but not including 75 % (mass fraction).

It applies to casting alloys suitable for the fabrication of dental restorations and appliances.

NOTE 1 For dental casting gold alloys with noble metal content of 75 % and above, see ISO 1562.

NOTE 2 For dental alloys intended as the substructure of a metal-ceramic dental restorative system, see ISO 9693.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 3585:1998, *Borosilicate glass 3.3 — Properties*.

ISO 3696:1987, *Water for analytical laboratory use — Specification and test methods*.

ISO 6507-1:1997, *Metallic materials — Vickers hardness test — Part 1: Test method*.

ISO 6892:1998, *Metallic materials — Tensile testing at ambient temperature*.

ISO 9693:1991, *Dental ceramic fused to metal restorative materials*.

3 Classification

For the purposes of this International Standard, dental casting alloys are classified, according to their mechanical properties and the application for which they are recommended, as follows:

- **Type 1:** low-strength- for castings subject to very slight stress, e.g. inlays;
- **Type 2:** medium-strength- for castings subject to moderate stress, e.g. inlays, onlays, and full crowns;
- **Type 3:** high-strength- for castings subject to high stress, e.g. onlays, thin cast backings, pontics, crowns and saddles;
- **Type 4:** extra-high strength- for castings subject to very high stress and thin cross-section, e.g. saddles, bars, clasps, thimbles, unit castings and partial denture frameworks.