



SLOVENSKI STANDARD
SIST EN ISO 11489:1998

01-april-1998

Določevanje platine v zlitinah za nakit iz platine - Gravimetrična metoda po redukciji z živosrebrovim(I) kloridom (ISO 11489:1995)

Determination of platinum in platinum jewellery alloys - Gravimetric method after reduction with mercury(I) chloride (ISO 11489:1995)

Bestimmung von Platin in Platin-Schmucklegierungen - Gravimetrische Bestimmung durch Reduktion mit Quecksilber(I)-chlorid (ISO 11489:1995)

Dosage du platine dans les alliages de platine pour la bijouterie-joaillerie - Méthode gravimétrique après réduction au chlorure de mercure(I) (ISO 11489:1995)

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Ta slovenski standard je istoveten z: EN ISO 11489:1995

ICS:

39.060

Nakit

Jewellery

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en

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EUROPEAN STANDARD

EN ISO 11489

NORME EUROPÉENNE

EUROPÄISCHE NORM

May 1995

ICS 39.060

Descriptors: platinum alloys, chemical analysis, determination of content, platinum, gravimetric analysis

English version

**Determination of platinum in platinum jewellery
alloys - Gravimetric method after reduction with
mercury(II) chloride (ISO 11489:1995)**

Dosage de platine dans les alliages de platine
pour la bijouterie-joaillerie - Méthode
gravimétrique après réduction au chlorure de
mercure(II) (ISO 11489:1995)

Bestimmung von Platin in
Platin-Schmucklegierungen - Gravimetrische
Bestimmung durch Reduktion mit
Quecksilber(II)-Chlorid (ISO 11489:1995)

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Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

The European Standards exist in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

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CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

Foreword

The text of the International Standard ISO 11489:1995 has been prepared by Technical Committee ISO/TC 174 "Jewellery" in collaboration with CEN/TC 283 "Precious metals - Applications in jewellery and associated products". It has been submitted to Parallel Vote and has been approved by CEN on 1995-04-27 as a European Standard.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by November 1995, and conflicting national standards shall be withdrawn at the latest by November 1995.

According to the CEN/CENELEC Internal Regulations, the following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.

Endorsement notice

The text of the International Standard ISO 11489:1995 was approved by CEN as a European Standard without any modification.

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Annex ZA (normative)**Normative references to international publications
with their relevant European publications**

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN</u>	<u>Year</u>
ISO 9202	1991	Jewellery - Fineness of precious metal Alloys	EN 29202	1992

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INTERNATIONAL
STANDARD

ISO
11489

First edition
1995-05-01

**Determination of platinum in platinum
jewellery alloys — Gravimetric
determination by reduction with mercury(I)
chloride**

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*Dosage du platine dans les alliages de platine pour la
bijouterie-joaillerie*

*Dosage gravimétrique par réduction au chlorure de
mercure(I)*

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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 11489 was prepared by Technical Committee ISO/TC 174, *Jewellery*.

Annex A of this International Standard is for information only.

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Determination of platinum in platinum jewellery alloys — Gravimetric determination by reduction with mercury(II) chloride

1 Scope

This International Standard specifies a gravimetric method for the determination of platinum in platinum jewellery alloys, preferably within the range of fineness stated in ISO 9202.

The procedure applies specifically to platinum alloys incorporating palladium, iridium, rhodium, copper, cobalt, gold, ruthenium, gallium, chromium, indium and less than 5 % tungsten. Some modifications are indicated where palladium, iridium, rhodium, gold or ruthenium are present.

2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the edition indicated was 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 edition of the standard indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 9202:1991, *Jewellery — Fineness of precious metal alloys*.

3 Principle

The sample is dissolved in *aqua regia*. After elimination of all nitrates by evaporation, the residue is dissolved in hydrochloric acid. The platinum is then precipitated from this solution by reduction with mercury(II) chloride. The mercury is eliminated by ignition and the platinum is weighed. If present, gold

and palladium will also be precipitated by this reduction procedure. Their content shall be determined separately by, for example, atomic absorption or inductively coupled plasma (ICP) emission spectrometry, and a correction applied.

4 Reagents

During the analysis, unless otherwise stated, use only reagents of recognized analytical grade and only distilled water or water of equivalent purity.

4.1 Hydrochloric acid, 36 % (m/m) to 38 % (m/m), $\rho_{20} = 1,19 \text{ g/cm}^3$.

4.2 Dilute hydrochloric acid, 18 % (m/m), $\rho_{20} = 1,09 \text{ g/cm}^3$.

4.3 Dilute hydrochloric acid, 8,5 % (m/m), $\rho_{20} = 1,04 \text{ g/cm}^3$.

4.4 Nitric acid, 69 % (m/m), $\rho_{20} = 1,41 \text{ g/cm}^3$.

4.5 Mercury(II) chloride (Hg_2Cl_2), in suspension.

Dissolve 200 g of mercury(II) nitrate dihydrate [$\text{Hg}_2(\text{NO}_3)_2 \cdot 2\text{H}_2\text{O}$] in 300 ml of water in a beaker and add approximately 50 ml of nitric acid; just sufficient to ensure that the basic mercury(II) nitrate is redissolved. Dilute the solution with water to 4 litres and add 400 ml of cold saturated ammonium chloride solution. Allow the precipitate of mercury(II) chloride to settle, decant and wash about 20 times to ensure that it is nitrate free. Add 2 litres of water and store in a closed flask.

NOTE 1 This suspension is stable and can be used even after storage for a few months.