

Jewellery - Determination of platinum in platinum jewellery alloys - Gravimetric method after precipitation of diammonium hexachloroplatinate (ISO 11210:2014)

## EESTI STANDARDI EESSÕNA

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See Eesti standard EVS-EN ISO 11210:2016 sisaldab Euroopa standardi EN ISO 11210:2016 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 11210:2016 consists of the English text of the European standard EN ISO 11210:2016.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
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English Version

**Jewellery - Determination of platinum in platinum  
jewellery alloys - Gravimetric method after precipitation of  
diammonium hexachloroplatinate (ISO 11210:2014)**

Joaillerie, bijouterie - Dosage du platine dans les  
alliages de platine pour la bijouterie-joaillerie -  
Méthode gravimétrique après précipitation de  
l'hexachloroplatinate de diammonium (ISO  
11210:2014)

Schmuck - Bestimmung von Platin in Platin-  
Schmucklegierungen - Gravimetrische Bestimmung  
durch Fällung als Diammoniumhexachloroplatinat (ISO  
11210:2014)

This European Standard was approved by CEN on 26 August 2016.

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**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

## European foreword

The text of ISO 11210:2014 has been prepared by Technical Committee ISO/TC 174 “Jewellery” of the International Organization for Standardization (ISO) and has been taken over as EN ISO 11210:2016.

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of an identical text or by endorsement, at the latest by April 2017, and conflicting national standards shall be withdrawn at the latest by April 2017.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN ISO 11210:1995.

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### Endorsement notice

The text of ISO 11210:2014 has been approved by CEN as EN ISO 11210:2016 without any modification.

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## Introduction

The following definitions apply in understanding how to implement an ISO International Standard and other normative ISO deliverables (TS, PAS, IWA).

- “shall” indicates a requirement
- “should” indicates a recommendation
- “may” is used to indicate that something is permitted
- “can” is used to indicate that something is possible, for example, that an organization or individual is able to do something

ISO/IEC Directives, Part 2 (sixth edition, 2011), 3.3.1 defines a requirement as an “expression in the content of a document conveying criteria to be fulfilled if compliance with the document is to be claimed and from which no deviation is permitted.”

ISO/IEC Directives, Part 2 (sixth edition, 2011), 3.3.2 defines a recommendation as an “expression in the content of a document conveying that among several possibilities, one is recommended as particularly suitable, without mentioning or excluding others, or that a certain course of action is preferred but not necessarily required, or that (in the negative form) a certain possibility or course of action is deprecated but not prohibited.”

# Jewellery — Determination of platinum in platinum jewellery alloys — Gravimetric method after precipitation of diammonium hexachloroplatinate

## 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.

These alloys can contain 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 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 11596, *Jewellery — Sampling of precious metal alloys for and in jewellery and associated products*

## 3 Principle

The sample is dissolved in aqua regia. After converting the sample solution to a slightly acid medium, the platinum is precipitated as diammonium hexachloroplatinate. The precipitate is converted to metallic platinum. Coprecipitated alloying elements are tested in the re-dissolved platinum sponge and measured using, for example, an atomic absorption spectrometer (AAS) or an inductively coupled plasma optical emission spectrometer (ICP-OES), 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 (HCl)**, approximately 30 % to 37 % HCl (mass fraction).

**4.2 Dilute hydrochloric acid**, 18 % HCl (mass fraction).

**4.3 Nitric acid (HNO<sub>3</sub>)**, approximately 65 % to 69 % HNO<sub>3</sub> (mass fraction).

**4.4 Ammonium chloride solution (NH<sub>4</sub>Cl)**, cold saturated solution.

**4.5 Reducing gas**, such as hydrogen or a hydrogen/nitrogen mixture.

**4.6 Inert gas**, such as carbon dioxide or nitrogen.

**4.7 Aqua regia**, mix three volumes of hydrochloric acid ([4.1](#)) and one volume of nitric acid ([4.3](#)).