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SOUTH AFRICAN NATIONAL STANDARD

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

This national standard is the identical implementation of ISO 11210:1995, and is adopted with the permission of the International Organization for Standardization.

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Table of changes

Change No.	Date	Scope
Nat. amdt 1	2007	Amended to change the designation from SABS to SANS, with no technical changes.

National foreword

This South African standard was approved by National Committee SABS/TC 1078, *Engineering materials – Non-ferrous metals*, in accordance with procedures of the SABS Standards Division, in compliance with annex 3 of the WTO/TBT agreement.

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This document will be reviewed every five years
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INTERNATIONAL STANDARD

ISO
11210

First edition
1995-05-01

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

*Dosage du platine dans les alliages de platine pour la bijouterie —
Joaillerie — Méthode gravimétrique après précipitation de
l'hexachloroplatinate de diammonium*



Reference number
ISO 11210:1995(E)

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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 11210 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 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 may 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 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 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 for in the redissolved platinum sponge and measured by, for example, atomic absorption and 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 Nitric acid, 69 % (m/m), $\rho_{20} = 1,41 \text{ g/cm}^3$.

4.4 Ammonium chloride solution (NH_4Cl), 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 3 volumes of hydrochloric acid (4.1) and 1 volume of nitric acid (4.3).

WARNING — Aqua regia is potentially hazardous and safety glasses or goggles must be used. Dissolution should be carried out in a well-ventilated fume cupboard.

5 Apparatus

Ordinary laboratory apparatus and