AS 4119—2007
Reconfirmed 2018

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Australian Standard®

Determination of platinum and palladium in gold and gold bearing alloys—Flame atomic absorption spectrometry (FAAS) or inductively coupled plasma atomic emission spectrometry (ICP-AES) (fire assay methods)

STANDARDS
Australia

This Australian Standard® was prepared by Committee CH-010, Analysis of Metals. It was approved on behalf of the Council of Standards Australia on 25 October 2007.
This Standard was published on 20 December 2007.

The following are represented on Committee CH-010:

- Australasian Institute of Mining and Metallurgy
- Australian Aluminium Council
- Institute of Materials Engineering Australasia
- International Precious Metals Institute
- National Association of Testing Authorities Australia
- The Royal Australian Chemical Institute

This Standard was issued in draft form for comment as DR 06637.

Standards Australia wishes to acknowledge the participation of the expert individuals that contributed to the development of this Standard through their representation on the Committee and through the public comment period.

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STANDARDS AUSTRALIA

RECONFIRMATION

OF
AS 4119–2007
Determination of platinum and palladium in gold and gold bearing alloys – Flame atomic absorption spectrometry (FAAS) or inductively coupled plasma-atomic emission spectrometry (ICP-AES) (fire assay methods)

RECONFIRMATION NOTICE

Technical Committee CH-010 has reviewed the content of this publication and in accordance with Standards Australia procedures for reconfirmation, it has been determined that the publication is still valid and does not require change.

Certain documents referenced in the publication may have been amended since the original date of publication. Users are advised to ensure that they are using the latest versions of such documents as appropriate, unless advised otherwise in this Reconfirmation Notice.

Approved for reconfirmation in accordance with Standards Australia procedures for reconfirmation on 26 April 2018.

The following are represented on Technical Committee CH-010:

Australian Chamber of Commerce and Industry
Bureau of Steel Manufacturers of Australia
Geoscience Australia
International Copper Association Australia
Jewellers Association of Australia
Materials Australia
National Association of Testing Authorities Australia
Perth Mint

NOTES

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee CH-010, Analysis of Metals.

After consultation with stakeholders in both countries, Standards Australia and Standards New Zealand decided to develop this Standard as an Australian Standard rather than an Australian/New Zealand Standard.

The objective of this Standard is to provide a procedures for the determination of platinum and palladium in gold and gold bearing alloys by flame atomic absorption spectrometry (FAAS) or inductively coupled plasma atomic emission spectrometry (ICP-AES).

This Standard is one of a series of Standards for the determination of gold and gold bearing alloys.

An interlaboratory test program was organized to provide information on the repeatability and reproducibility of the method. The following laboratories participated in the test program to provide the data given in Table 1:

AGR Matthey Newburn

AGR Matthey Thomastown

EBS & Associates

Spectrometer Services

Umpire Assay Laboratories

The term ‘informative’ has been used in this Standard to define the application of the appendix to which it applies. An ‘informative’ appendix is only for information and guidance.

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Australian Standard

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1 SCOPE

This Standard sets out spectrometric procedures for the determination of platinum and palladium in gold and gold bearing alloys by initial fire assay followed by flame atomic absorption spectrometry (FAAS) or inductively coupled plasma-atomic emission spectrometry (ICP-AES).

The methods are applicable to gold and gold alloys containing less than 10% palladium and less than 10% platinum.

NOTES:

1 Recommended methods of sampling gold alloys for use with this Standard are provided in Appendix A.

2 The presence of the following elements may cause difficulties in obtaining a homogeneous sample: iron, lead, antimony, nickel or arsenic.

2 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS	
2134	Recommended practice for chemical analysis by atomic absorption spectrometry
2134.1	Part 1: Flame atomic absorption spectrometry (FAAS)
2243	Safety in laboratories (series)
2508	Safe storage and handling information cards for hazardous materials
2162	Verification and use of volumetric apparatus
2162.1	Part 1: General—Volumetric glassware
2162.2	Part 2: Guide to the use of piston-operated volumetric apparatus (POVA)
2164	Laboratory glassware—One-mark volumetric flasks
2166	Laboratory glassware—One-mark pipettes
2167	Graduated straight pipettes
2850	Chemical analysis—Interlaboratory test programs—For determining precision of analytical method(s)—Guide to the planning and conduct
3641	Recommended practice for atomic emission spectrometric analysis
3641.1	Part 1: Principles and techniques
3641.2	Part 2: Inductively coupled plasma excitation
AS ISO/IEC	
17025	General requirements for the competence of testing and calibration laboratories