

Australian Standard[®]

**Copper, lead and zinc sulfide
concentrates—Chemical analysis**

**Part 1: Determination of gold and
silver—Fire assay gravimetric and flame
atomic absorption spectrometric
method**

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This Australian Standard® was prepared by Committee MN-005, Copper, Lead, Zinc and Nickel Ores and Concentrates. It was approved on behalf of the Council of Standards Australia on 24 January 2008.
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- CSIRO Minerals
- Minerals Council of Australia

Additional Interests:

- Minerals industry analytical laboratories
-

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Originally in part as AS 2917—1986, AS 2678.5—2002 and AS
4030.3—2002.

AS 2917.2—1994, AS 2678.5—2002 and AS 4030.3—2002 revised,
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PREFACE

This Standard was prepared by the Standards Australia Committee MN-005, Copper, Lead, Zinc and Nickel Ores and Concentrates, to supersede AS 2917.2—1994, AS 2678.5—2002 and AS 4030.3—2002.

The objective of this Standard is to provide those involved in the analysis of sulfide concentrates with a standardized fire assay procedure for the determination of gold and silver.

This Standard is identical with, and has been reproduced from ISO 10378:2005, *Copper, lead and zinc sulfide concentrates—Determination of gold and silver—Fire assay gravimetric and flame atomic absorption spectrometric method*

As this Standard is reproduced from an International Standard, the following applies:

- (a) Its number appears on the cover and title page while the International Standard number appears only on the cover.
- (b) In the source text ‘this International Standard’ should read ‘this Australian Standard’.
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- (d) Substitute ‘L’ for ‘l’ as the unit for litres.

References to International Standards should be replaced by references to Australian Standards, as follows:

<i>Reference to International Standard</i>	<i>Australian Standard</i>
ISO	AS
9599 Copper, lead and zinc sulfide concentrates—Determination of hygroscopic moisture in the analysis sample—Gravimetric method	2816 Copper, lead and zinc sulfide concentrates—Determination of hygroscopic moisture in the analysis sample—Gravimetric method

Only international references that have been adopted as Australian Standards have been listed.

The terms ‘normative’ and ‘informative’ have been used in this Standard to define the application of the annex to which they apply. A ‘normative’ annex is an integral part of a Standard, whereas an ‘informative’ annex is only for information and guidance.

CONTENTS

	<i>Page</i>
1	Scope 1
2	Normative references 1
3	Principle 2
3.1	Fusion 2
3.2	Cupellation 2
3.3	Parting 2
3.4	Retreatment 2
3.5	Correction for blank contamination 2
4	Reagents 2
5	Apparatus 4
6	Sample 5
6.1	Test sample 5
6.2	Test portion 5
7	Procedure 5
7.1	Number of determinations 5
7.2	Trial fusion 5
7.3	Blank tests 5
7.4	Charge preparation 6
7.5	Primary fusion 7
7.6	Cupellation 7
7.7	Retreatment of residues 8
7.8	Determination of gold in the primary bead 8
7.9	Determination of gold and silver in secondary beads and blanks, and of silver in prills 9
7.10	Determination of silver in the parting solution 11
8	Expression of results 11
8.1	Mass fraction of gold 11
8.2	Mass fraction of silver 12
9	Precision 13
9.1	Expression of precision 13
9.2	Method for obtaining the final result (see Annex H) 14
9.3	Precision between laboratories 15
9.4	Check of trueness 17
9.4.1	General 17
9.4.2	Type of certified reference material (CRM) or reference material (RM) 17
10	Test report 18
	Annex A (normative) Procedure for the preparation and determination of the mass of a predried test portion 19
	Annex B (normative) Trial fusion 21
	Annex C (normative) Blank determination 22
	Annex D (normative) Inquartation 23
	Annex E (normative) Determination of vaporization loss of silver during the cupellation process 24
	Annex F (normative) Sulfuric acid - Parting 25

Annex G (normative) Determination of impurities in parting solutions and washings.....	27
Annex H (normative) Flowsheet of the procedure for the acceptance of analytical values for test samples (see 9.2)	31
Annex I (informative) Flowsheet of the method.....	32
Annex J (informative) Roasting method.....	33
Annex K (informative) Guide to the preparation of dilutions for the determination of silver in parting solutions and residues.....	34
Annex L (informative) Derivation of precision equations.....	35
Bibliography	52

INTRODUCTION

This International Standard describes a method for the determination of the mass fraction of gold and silver in copper, lead and zinc sulfide concentrates. This International Standard was prepared to enable laboratories to determine the mass fraction of gold and silver in suitable samples using instrumental methods.

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AUSTRALIAN STANDARD

Copper, lead and zinc sulfide concentrates—Chemical analysis

Part 1:

Determination of gold and silver—Fire assay gravimetric and flame atomic absorption spectrometric method

WARNING — This International Standard may involve hazardous materials, operations and equipment. It is the responsibility of the user of this International Standard to establish appropriate health and safety practices and determine the applicability of regulatory limitations prior to use.

1 Scope

This International Standard specifies a fire assay gravimetric and flame atomic absorption spectrometric method for the determination of the mass fraction of gold and silver in copper, lead and zinc sulfide concentrates as follows:

— Copper concentrates:

The method is applicable to the determination of mass fractions of gold from 0,5 g/t to 300 g/t and of mass fractions of silver from 25 g/t to 1 500 g/t in copper sulfide concentrates containing mass fractions of copper from 15 % to 60 %.

— Lead concentrates

The method is applicable to the determination of mass fractions of gold from 0,1 g/t to 25 g/t and of mass fractions of silver from 200 g/t to 3 500 g/t in lead sulfide concentrates containing mass fractions of lead from 10 % to 80 %.

— Zinc concentrates

The method is applicable to the determination of mass fractions of gold from 0,1 g/t to 12 g/t and of mass fractions of silver from 10 g/t to 800 g/t in zinc sulfide concentrates containing mass fractions of zinc up to 60 %.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 385-1:1974, *Laboratory glassware — Burettes — Part 1: General requirements*

ISO 648:1977, *Laboratory glassware — One-mark pipettes*

ISO 1042:1998, *Laboratory glassware — One-mark volumetric flasks*

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

ISO 4787:1984, *Laboratory glassware — Volumetric glassware — Methods for use and testing of capacity*

ISO 9599:1991, *Copper, lead and zinc sulfide concentrates — Determination of hygroscopic moisture in the analysis sample — Gravimetric method*