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Australian STANDARD

Copper, lead, zinc and nickel sulfide concentrates—Determination of hygroscopic moisture content of the analysis sample—Gravimetric method

STANDARDS Australia

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- Australasian Institute of Mining and Metallurgy
- Australian X-ray Analytical Association
- CSIRO
- Minerals Council of Australia

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Australian Standard®

Copper, lead, zinc and nickel sulfide concentrates—Determination of hygroscopic moisture content of the analysis sample—Gravimetric method

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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 2816—1992, *Copper, lead and zinc sulfide concentrates—Determination of hygroscopic moisture in the analysis sample—Gravimetric method*.

The objective of this standard is to specify a gravimetric loss-in-mass method for the determination of the hygroscopic moisture content in analysis samples of copper, lead, zinc, and nickel sulfide concentrates.

This Standard is identical with, and has been reproduced from ISO 9599:2015, *Copper, lead, zinc and nickel sulfide concentrates—Determination of hygroscopic moisture content of the analysis sample—Gravimetric method*.

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

(a) In the source text 'this International Standard' should read 'this Australian Standard'.

(b) A full point substitutes for a comma when referring to a decimal marker.

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

Reference to International Standard		*Australian Standard*	
ISO		AS	
10251	Copper, lead, zinc and nickel concentrates—Determination of mass loss of bulk material on drying	2863	Copper, lead, zinc and nickel concentrates—Determination of mass loss of bulk material on drying
12743	Copper, lead, zinc and nickel concentrates—Sampling procedures for determination of metal and moisture content	2862 2862.1	Copper, lead, zinc and nickel concentrates—Sampling Part 1: Sampling procedures for determination of metal and moisture content

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

The term 'normative' has been used in this Standard to define the application of the annex to which it applies. A 'normative' annex is an integral part of a Standard.

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AUSTRALIAN STANDARD

Copper, lead, zinc and nickel sulfide concentrates—Determination of hygroscopic moisture content of the analysis sample—Gravimetric method

WARNING — Any chemical-reagent waste must be disposed of in an environmentally sound manner that does not injure the health or welfare of the environment, people, animals, vegetation, etc.

1 Scope

This International Standard specifies a gravimetric loss-in-mass method for the determination of the hygroscopic moisture content in analysis samples of copper, lead, zinc, and nickel sulfide concentrates.

The method is applicable to copper, lead, zinc, and nickel sulfide concentrates free from volatile organic flotation reagents, for example kerosene, and with hygroscopic moisture contents between 0,05 % (m/m) and 2 % (m/m). The hygroscopic moisture content is used to correct the analysis results from the equilibrated moisture level to the dry basis.

NOTE The result of the determination of hygroscopic moisture content using this International Standard should not be reported as part of the analysis of a concentrate sample. Whenever the bulk moisture content of a commercial shipment of concentrate is required, ISO 10251 should be used. The determination of hygroscopic moisture content and the determination of bulk moisture content are connected with each other. In both determinations, the same state of dryness has to be achieved, in order to ascertain the correct metal content of a lot.

This method is not applicable to sulfide concentrates that are susceptible to oxidation (see 6.3, note 2). Annex A sets out a modified procedure, which can be used for sulfide concentrates that are susceptible to oxidation.

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 10251, *Copper, lead, zinc and nickel concentrates — Determination of mass loss of bulk material on drying*

ISO 12743, *Copper, lead, zinc and nickel concentrates — Sampling procedures for determination of metal and moisture content*

3 Principle

Drying of a weighed test portion in air in an oven maintained at 105 °C ± 5 °C and calculation of the percentage moisture content from the loss in mass.

4 Reagents

4.1 Desiccant, such as self-indicating silica gel or anhydrous magnesium perchlorate.

5 Apparatus

Ordinary laboratory equipment, and the following.