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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 8152.10-2006

**Methods for chemical analysis of lead concentrates -- Determination of
silver and gold content -- Fire assay and flame atomic absorption
spectrometric method using scorification or cupellation**

(English Translation)

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Table of Contents

Foreword...	3
1 Scope...	6
2 Normative References...	6
3 Principle...	7
4 Reagents...	7
5 Apparatus...	10
6 Sample...	11
7 Procedure...	11
8 Expression of Results...	18
9 Precision...	18
10 Test report...	21

Foreword

GB/T 8152-2006 Methods for Chemical Analysis of Lead Concentrates has 10 parts in total:

- GB/T 8152.1 Methods for Chemical Analysis of Lead Concentrates -
Determination of Lead Content - EDTA Titration Method after Acid Digestion;
- GB/T 8152.2 Methods for Chemical Analysis of Lead Concentrates -
Determination of Lead Content - Back Titration of EDTA after Precipitation of
Lead Sulfate;
- GB/T 8152.3 Methods for Chemical Analysis of Lead Concentrates -
Determination of Aluminum (III) Oxide Content - Chromazurol S
Spectrophotometric Method;
- GB/T 8152.4 Methods for Chemical Analysis of Lead Concentrates -
Determination of Zinc Content - EDTA Titration Method;
- GB/T 8152.5 Methods for Chemical Analysis of Lead Concentrates -
Determination of Arsenic Content - Atomic Fluorescence Spectrometer Method;
- GB/T 8152.7 Methods for Chemical Analysis of Lead Concentrates -

Determination of Copper Content - Flame Atomic Absorption Spectrometric Method;

---GB/T 8152.9 Methods for Chemical Analysis of Lead Concentrates -

Determination of Magnesium Oxide Content - Flame Atomic Absorption Spectrometric Method;

---GB/T 8152.10 Methods for Chemical Analysis of Lead Concentrates -

Determination of Silver and Gold Content - Fire Assay and Flame Atomic Absorption Spectrometric Method Using Scorification or Cupellation;

---GB/T 8152.11 Methods for Chemical Analysis of Lead Concentrates -

Determination of Mercury Content - Atomic Fluorescence Spectrometer Method;

---GB/T 8152.12 Methods for Chemical Analysis of Lead Concentrates -

Determination of Cadmium Content - Flame Atomic Absorption Spectrometric Method.

GB/T 8152.6-1987 Methods for Chemical Analysis of Lead Concentrates - The Polarographic Method for the Determination of Bismuth Content and GB/T 8152.8-

1987 Methods for Chemical Analysis of Lead Concentrates - The DTPM

Spectrophotometric Method for the Determination of Bismuth Content remain unchanged.

This is the 10th part of GB/T 8152.

This Part equivalently adopts IEC 12740:1998(E) Lead Sulfide Concentrates - Determination of Silver and Gold Contents - Fire Assay and Flame Atomic Absorption Spectrometric Method Using Scorification or Cupellation.

In order to make it convenient for users, this Part makes the following editorial modifications:

a) Decimal point "." is used to replace ",", which acts as decimal point in the international standard;

- b) "this Part" is used to replace "this international standard";
- c) In accordance with the idiomatic ways in Chinese, the title of the standard is modified;
- d) The front page, contents, foreword and introduction in the international standard are deleted.

This Part serves as a replacement of GB/T 8152.9-1987 Methods for Chemical Analysis of Lead Concentrates - The Fire-assaying Methods for the Determination of Gold and Silver Content and GB/T 8152.10-1987 Methods for Chemical Analysis of Lead Concentrates - Determination of Silver Content - Flame Atomic Absorption Spectrophotometric Method. Due to the development of the international analytical techniques, the previous standards are outdated. In comparison with GB/T 8152.9 ~ GB/T 8152.10-1987, there are several changes as follows:

- a) This Part combines two methods in the previous national standards into one method, namely, it adopts scorification or cupellation for sample processing, and flame atomic absorption spectrometric method for determination.
- b) This Part adds normative technical elements, such as "precision" and "test report", so as to further improve the standard text.
- c) Annex A "Instrument Working Conditions" in the previous national standard is deleted.
- d) Annex A "Procedure for the Preparation and Determination of the Mass of a Predried Test Portion"; Annex B "Trial Fusion"; Annex C "Blank Determination"; Annex D "Flowsheet of the Procedure for the Acceptance of Analytical Values for the Test Samples"; Annex E "Derivation of Precision Equations"; Annex F "Bibliography" are added.

In this Part, Annex A, Annex B, Annex C and Annex D are normative; Annex E is informative.

This Part was proposed by China Nonferrous Metals Industry Association.

This Part shall be under the jurisdiction of National Technical Committee 243 on

Nonferrous Metals of Standardization Administration of China (SAC/TC 243).

The responsible drafting organization of this Part: Zhuzhou Smelter Group Company Limited.

1 Scope

This Part specifies a fire assay and flame atomic absorption spectrometric procedure for the determination of silver and gold contents of lead sulfide concentrates.

This Part is applicable to the determination of silver and gold in lead sulfide concentrates containing 10 % (mass fraction) to 80% (mass fraction) lead.

This Part is applicable to Ag contents from 200 g/t to 2,000 g/t and Au contents from

2 Normative References

The following standards contain provisions which, through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 385-1:1984, 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.

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