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

GB/T 8151.19-2012

**Methods for chemical analysis of zinc sulfide concentrates -- Part 19:
Determination of silver and gold contents -- Fire assay and flame atomic
absorption spectrometric method using scarification or cupellation**

锌精矿化学分析方法 第19部分：金和银含量的测定 铅析或灰吹火试金和火焰原子吸收光谱法

(English Translation)

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Foreword

GB/T 8151 "Methods for chemical analysis of zinc concentrates" is divided into 20 parts.

- Part 1. Determination of the amount of zinc Na₂EDTA precipitation titration and extraction separation Na₂EDTA titration;
- Part 2. Determination of sulfur content - Combustion neutralization titration method;
- Part 3. Determination of iron content Na₂EDTA titration;
- Part 4. Determination of silicon dioxide content - Molybdenum blue spectrophotometric method;
- Part 5. Determination of lead content by flame atomic absorption spectrometry;
- Part 6. Determination of copper content - Flame atomic absorption spectrometry;
- Part 7. Determination of arsenic content by hydride generation - atomic fluorescence spectrometry and potassium bromate titration;
- Part 8. Determination of cadmium content by flame atomic absorption spectrometry;
- Part 9. Determination of the amount of fluorine ion selective electrode method;
- Part 10. Determination of tin content by hydride generation - atomic fluorescence spectrometry;
- Part 11. Determination of antimony content hydride - atomic fluorescence spectrometry;
- Part 12. Determination of the amount of silver by flame atomic absorption spectrometry;
- Part 13. Determination of the amount of germanium hydride - atomic fluorescence spectroscopy and spectrophotometry Phenylfluoron;
- Part 14. Determination of nickel content by flame atomic absorption spectrometry;

- Part 15. Determination of the amount of mercury atomic fluorescence spectrometry;
- Part 16. Determination of cobalt content by flame atomic absorption spectrometry;
- Part 17. Determination of the amount of zinc hydroxide precipitation -Na₂EDTA titration;
- Part 18. Determination of the amount of zinc ion exchange -Na₂EDTA titration;
- Part 19. Determination of lead analysis or gray Chuihuo assay and gold and silver by flame atomic absorption spectrometric method;
- Part 20. Copper, lead, iron, arsenic, cadmium, antimony, calcium, magnesium content - Inductively coupled plasma atomic emission spectrometry.

This section GB/T 8151 Part 19.

Rules in this section in accordance with GB/T 1.1-2009 given draft.

This section identical with ISO 15248:1998 "Determination of gold and silver sulfide concentrates of lead content analysis or assay and flame atomic ash Chuihuo Absorption spectrometric method. " this part of ISO 15248:1998 main differences are as follows.

- With a decimal point instead of as a decimal in the international standards ", ". ";
- With a period instead of a full stop in the international standard. "" . "";
- With "this Part" instead of the "standard";
- According to Chinese customary change the standard name;
- Remove the cover of international standards, directory, foreword.

The non-ferrous metal part by the National Standardization Technical Committee (SAC/TC243) centralized.

This section drafted by. MCC Huludao Nonferrous Metals Group Co., Ltd., China Nonferrous Metals Industry Institute of Standards and Metrology and Quality.

1 Scope

This section GB/T 8151 provides for fire assay and flame atomic absorption spectrometry method zinc sulfide gold and silver content of the concentrate.

Determination of sulfide concentrates gold and silver content of this section applies to zinc content of not more than 60% (mass fraction) measurement range. Silver 10g/t ~ 500g/t, gold 0.1g/t ~ 12.0g/t.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated edition applies to this article Member. For undated references,

the latest edition (including all repair orders) applies to this document.

ISO 385 Laboratory Glassware Buret (Laboratoryglassware-Burettes) ISO 648 single laboratory glassware graduated pipettes (Laboratoryglassware-One-markpipettes) ISO 1042 single scale laboratory glassware volumetric flask (Laboratoryglassware-One-markvolumetric flasks) Water specifications and test methods (Waterforanalyticallaboratoryuse-Specification ISO 3696 laboratory analysis andtestmethods) ISO 4787 laboratory glassware containers test capacity and capacity use (Laboratoryglassware-Volumetricglassware-Methodsforuseandtestingofcapacity) ISO 9599 sulfide copper, lead and zinc concentrates hygroscopic moisture - Gravimetric method (Copper, leadandzincsulfideconcentrates-Determinationofhygroscopicmoistureintheanalysis sample-Gravimetricmethod)

3.1 Lead chromatography

Sample by fire assay melt, slag, lead generation quality deduction is reduced to 2g ~ 5g.

First of slag slag and slag generated in the process of re-processed to produce low levels of lead and silver buckle, reduced through the slag, lead quality buckle 2g ~ 5g.

The resulting lead button twice dissolved in nitric acid, the solution is filtered. Dissolving paper and gold, gold and silver content was measured by flame atomic absorption spectrometry.

3.2 Cupellation

Sample by fire assay melt blown gray, gold and silver together to give tablets.

First of slag and soot blowing ash pan re-processing of gold and silver together to get another grain.

Gold and silver together two tablets dissolved in nitric acid, the solution was filtered. Dissolving paper and gold, gold and silver content was measured by flame atomic absorption spectrometry.

GB/T 8151.19-2012/ISO 15248:1998