

ICS 77.120.60

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

中华人民共和国国家标准

GB/T 8151.10-2012

Replace GB/T 8151.10-2000

**Methods for chemical analysis of zinc
concentrates—Part 10: Determination of tin content—
Hydride generation—Atomic fluorescence
spectrometry**

锌精矿化学分析方法

第 10 部分：锡量的测定

氢化物发生-原子荧光光谱法

Issued on December 31, 2012

Implemented on October 01, 2013

**Issued by General Administration of Quality Supervision, Inspection
and Quarantine of the People's Republic of China**

**Standardization Administration of the People's Republic of
China**

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Foreword

GB/T 8151 *Methods for chemical analysis of zinc concentrates* consists of 20 parts are as follows:

- Part 1: Determination of zinc content—Precipitate separation-Na₂EDTA titrimetric method and extractive separation-Na₂EDTA titrimetric method;
- Part 2: Determination of sulfur content—The combustion neutralization titrimetric method;
- Part 3: Determination of iron content—Na₂EDTA titrimetric method;
- Part 4: Determination of silicon dioxide content—Molybdenum blue spectrophotometry;
- Part 5: Determination of lead content—The flame atomic absorption spectrometric method;
- Part 6: Determination of copper content—The flame atomic absorption spectrometric method;
- Part 7: Determination of arsenic content—Hydride generation-atomic fluorescence spectrometry and the potassium bromate titrimetric method;
- Part 8: Determination of cadmium content—The flame atomic absorption spectrometric method;
- Part 9: Determination of fluorine content—The ion selective electrode method;
- Part 10: Determination of tin content—Hydride generation-atomic fluorescence spectrometry;
- Part 11: Determination of antimony content—Hydride generation-atomic fluorescence spectrometry;
- Part 12: Determination of silver content—The flame atomic absorption spectrometric method;

- Part 13: Determination of germanium content—Hydride generation-atomic fluorescence spectrometry and the phenyl fluorone spectrophotometric method;
- Part 14: Determination of nickel content—The flame atomic absorption spectrometric method;
- Part 15: Determination of mercury content—Atomic fluorescence spectrometry method;
- Part 16: Determination of cobalt content—Flame atomic absorption spectrometer method;
- Part 17: Determination of zinc content—Hydroxide precipitation and Na₂ EDTA titrimetric method;
- Part 18: Determination of zinc content—Ion-exchange/Na₂EDTA titrimetric method;
- Part 19: Determination of silver and gold contents—Fire assay and flame atomic absorption spectrometric method using scorification or cupellation;
- Part 20: Determination of copper, lead, iron, arsenic, cadmium antimony, calcium, magnesium contents—Inductively coupled plasma atomic emission spectrometry

This is part 10 of GB/T 8151.

This part is drafted according to the rules specified in GB/T 1.1-2009

This part will replace GB/T 8151.10-2000 *Methods for chemical analysis of zinc concentrates-Determination of tin content*. Comparison with GB/T 8151.10-2000, main changes of this part are as follows:

- Deleted Method 2;
- Modified the text formatting;
- Supplemented precious and test reports.

This Standard is under the jurisdiction of National Technical Committee (SAC/TC 243) on Nonferrous Metals of Standardization Administration of China.

The responsible drafting organization of this part is Huludao Non-ferrous metal Group Co., Ltd, China Metallurgical Group.

The drafting organizations of this part are Huludao Non-ferrous metal Group Co., Ltd, China Metallurgical Group and Beijing General Research Institute of Mining and Metallurgy.

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This part replaces the following historical editions issued:

— GB/T 8151.10-1987, GB/T 8151.10-2000.

Methods for chemical analysis of zinc concentrates—Part

10: Determination of tin content—Hydride

generation—Atomic fluorescence spectrometry

1 Scope

This part of GB/T 8151 stipulates the methods for determination of tin content in zinc concentrates.

This part is applicable to the determination of tin content in zinc concentrates. Determination range is 0.0030%~0.50%.

2 Abstract of methods

Fuse and decompose the specimen with sodium carbonate and sodium peroxide. In hydride generation, tin is reduced to hydride with potassium borohydride with hydrochloric acid. Import the hydride into quartz furnace atomizer with argon and measure the fluorescence intensity on AFS (atomic fluorescence spectrometer).

3 Reagents

Use only the reagent confirmed as AR and distilled water or deionized water or water with certain purity unless otherwise stated.

3.1 Anhydrous sodium carbonate.

3.2 Sodium peroxide.

3.3 Sulfuric acid (ρ 1.84g/mL).

3.4 Hydrochloric acid (ρ 1.19g/mL).

3.5 Hydrochloric acid (1+1).

3.6 Hydrochloric acid (1+49).

3.7 Sulfuric acid (1+9).



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