ICS 73.060
CCS D43

# NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA



# GB/T 17416.2-2010

Replacing GB/T 17416.2-1998

## Method for chemical analysis of Zirconium ores - Part 2: Determination of Zirconium and Hafnium contents

锆矿石化学分析方法 第2部分：锆量和铪量测定

**Issued on: November 10, 2010** **Implemented on: February 1, 2011**

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

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## Foreword

GB/T 17416 "Zirconium ores chemical analysis method" has two parts.

--- Part 1. Determination of zirconium and hafnium together;

--- Part 2. Determination of zirconium and hafnium amount. This section GB/T 17416 "Zirconium ores chemical analysis methods," Part 2. This Part replaces GB/T 17416.2-1998 "Zirconium ores Chemical analysis of X-ray fluorescence spectrometry determination of the amount of zirconium and hafnium amount." This section compared with the GB/T 17416.2-1998, the main changes are as follows:

--- Modify this part of the English name;

--- Text format has been modified;

--- Increased alert, warnings;

--- Increased provision sample. This section presents the People's Republic of China Ministry of Land Resources. This part of the National Standardization Technical Committee under the jurisdiction of Land and Resources. This section is responsible for drafting. National geology test center. This section is drafted. Liaoning Provincial Institute of Geology. The main drafters of this section. Wang Ruimin, Shi Jun, Wang Fulin. This part of the standard replaces the previous editions are.

--- GB/T 17416.2-1998. Methods for chemical analysis of zirconium ores Part 2. Determination of zirconium and hafnium amount Warning. Use of this standard shall have a person experiences regular laboratory work. This standard does not point out all possible security issues. Users have the responsibility to take appropriate safety and health practices and to ensure compliance with the conditions relevant national regulations.

## 1 Scope

GB/T 17416.2-2010 is the Chinese national standard on method for chemical analysis of zirconium ores - part 2: determination of zirconium and hafnium contents, in the field of

mining and minerals. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 10 November 2010 by the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China; Standardization Administration of China, and has been in force since 1 February 2011. Classification: ICS 73.060, CCS D43. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

GB/T 17416 in this section specifies the method for determining the amount of zirconium and hafnium zirconium ores amount of X-ray fluorescence spectrometry. This section applies to zirconium ore, also applies to the determination of other rare metal ores amount of zirconium and hafnium content. Measurement range. 0.0016% to 8.7% (by mass) amount of zirconium (zirconium dioxide meter); 0.0034% to 3.0% (by mass) the amount of hafnium (Hafnium dioxide dollars). Principle



## 2 Sample with lithium tetraborate, lithium fluoride mixed flux to flux ratio

1.5 samples made of molten fuse, spectral measurement method using X-ray fluorescence set. Substance with national standard and spectral pure reagents according to national standards and standard samples prepared material appropriate proportion as the calibration standard, Theoretical influence coefficient method for correcting the absorption between elements - enhancing effect.

## 3 Reagents

The reagents used in this section, unless otherwise indicated, are in line with national standards for the use of chemical reagents analytical analysis.

3.1 zirconia (spectroscopically pure).

3.2 hafnium oxide (spectroscopically pure).

3.3 sodium carbonate.

3.4 magnesium oxide.

3.5 aluminum oxide.

3.7 potassium dihydrogen phosphate.

3.8 calcium carbonate.

3.10 manganese dioxide.

3.11 ferric oxide.

3.13 hafnium oxide.

3.14 strontium carbonate.

3.15 anhydrous lithium tetraborate. X-ray fluorescence spectrometry special agents, 700 °C burning 2h.

3.16 lithium fluoride (excellent pure).

## 4 Instruments and equipment

4.1 X-ray fluorescence spectrometer (Rh target end window X-ray tube, 50kV, 50mA).