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CCS F46



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

GB/T 17863-2008

Replacing GB/T 17863-1999

Determination of thorium in thorium ores

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Table of Contents

Foreword

1 Scope

About this edition

Classification and status

How a Chinese national standard is set out

About this English translation

Foreword

This standard replaces GB/T 17863-1999 "Determination of thorium thorium ores N263 separation EDTA titration." This standard compared with GB/T 17863-1999 main changes are as follows:

--- In the case of N263 separation EDTA titration main technical content unchanged, the measurement range N263 separation EDTA titration Like ~% from 0.02% (1 < state < 10) to 0.1% to 10%, and the written expression and the result of the calculation has been modified.

--- Thorium content of 0.02% to 0.2% of the samples, an increase of N263 Extraction Chromatography arsenazo III spectrophotometry. The standard proposed by China National Nuclear Corporation. This standard by the National Standardization Technical Committee of nuclear energy. This standard was drafted. Nuclear Industry Beijing Institute of Geology. The main drafters of this standard. Pei Lingyun. This standard replaces the previous editions of the standard.

--- GB/T 17863-1999. Determination of thorium thorium ores

1 Scope

GB/T 17863-2008 is the Chinese national standard on determination of thorium in thorium ores, in the field of energy and heat transfer engineering. 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 2 July 2008 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 April 2009. Classification: ICS 27.120.30, CCS F46. 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.

This standard specifies the thorium thorium ores N263 separation EDTA titration spectrophotometric measurement principle and N263 separation arsenazo III, Steps, reagents and instruments, the results of calculation and precision of the method. N263 separation EDTA titration method is suitable for granite, volcanic rocks determined by basic types of thorium thorium content of the ore, but also to oxidation Determination of thorium content of thorium compounds thorium. Measurement range 0.1% to 10%. Less than or equal to 20mg strontium (II), 20mg zirconium (IV), 100mg lanthanum (III), 100mg cerium (IV), 25mg ytterbium (III), 20mg Yttrium (III), 40mg of uranium (VI), 20mg zinc (II), 100mg magnesium (II), 200mg calcium (II), 200mg of iron (III), 52mg titanium (III), 55mg barium (II), 100mg of aluminum (III) does not interfere with the determination. N263 separation Arsenazo III spectrophotometric method for the determination of granite, volcanic rocks, alkaline rocks type thorium thorium content of the ore. Determination Fan Around 0.02% to 0.2%. Less than or equal to 200mg of uranium (VI), iron (III), 100mg of titanium (III), zirconium (IV), calcium (II), magnesium (II), Aluminum (III), Zn (II), Cu (II), 50mg of lanthanum (III), cerium (IV), ytterbium (III), yttrium (III), 20mg of vanadium (V) does not interfere with the determination. 2 N263 separation EDTA titration

2.1 Method summary Sample temperature molten sodium peroxide decomposition, adding an appropriate amount of ferric chloride extraction carrier (in case of phosphates impurities or more samples instead three Ethanolamine and EDTA coarse separation), the test solution through the N263 extraction column separation, the vast majority of the element thorium measure the interference is removed. in Acidic solution pH1.65 ~

1.70 in, EDTA and thorium complex is 1 + 1. Display with titration end point jump clear of XO - half XO - Naphthol Green B ternary complex indicator to EDTA standard solution titration solution turns bright yellow-green or bright pink to the purple end.

2.2 Reagents Unless otherwise indicated in the analysis using only recognized as analytical grade reagents and distilled or deionized water.

2.2.1 sodium peroxide.

2.2.2 ferric chloride solution, 150g/L.

2.2.3 triethanolamine solution, 1 + 1.

2.2.4 EDTA solution, 50g/L.

2.2.5 hydrochloric acid solution, 1 + 1.

2.2.6 sodium hydroxide solution, 10g/L.

2.2.7 nitric acid - tartaric acid solution 2g of tartaric acid was dissolved in water, was added 30mL of nitric acid ($\rho = 1.42\text{g/cm}^3$), dilute with water to 100mL.

2.2.8 nitric acid solution Added 15mL of nitric acid ($\rho = 1.42\text{g/cm}^3$ in 100mL flask 3), dilute with water to 100mL.

2.2.9 nitric acid - tartaric acid solution 2g of tartaric acid was dissolved in water, was added 15mL of nitric acid ($\rho = 1.42\text{g/cm}^3$), dilute with water to 100mL.

2.2.10 hydrochloric acid solution, 1 + 3.

2.2.11 N263 (methyl chloride trialkylamine). 200

2.2.12 gasoline.

2.2.13 The second octanol.

2.2.15 fiberglass, washed with hydrochloric acid (2.2.10) boiling 0.5h, water wash stand.