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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 13747.16-2017

Replacing GB/T 13747.16-1992

Methods for chemical analysis of zirconium and zirconium alloys - Part 16: Determination of chloric content - Silver chloride nephelometry and ion selective electrode method

锆及锆合金化学分析方法 第16部分：氯量的测定 氯化银浊度法和离子选择性电极法

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Table of Contents

Foreword

GB/T 13747 "zirconium and zirconium alloy chemical analysis method" is divided into 27 parts.

--- Part 1. Determination of tin content potassium iodate titration and phenylfluorone - polyethylene glycol octyl phenyl ether spectrophotometry;

--- Part 2. Determination of iron content 1,10-phenanthroline spectrophotometry and inductively coupled plasma atomic emission spectrometry;

--- Part 3. Determination of nickel content dimethylglyoxime spectrophotometry and inductively coupled plasma atomic emission spectrometry;

--- Part 4. Determination of chromium content Diphenylcarbazide spectrophotometry and inductively coupled plasma atomic emission spectrometry;

--- Part 5. Determination of aluminum content chrome azure S-tetradecyl pyridine chloride spectrophotometry;

--- Part 6. Determination of copper content 2,9-dimethyl-1,10-phenanthroline spectrophotometry;

--- Part 7. Determination of manganese content potassium periodate spectrophotometry and inductively coupled plasma atomic emission spectrometry;

--- Part 8. Determination of cobalt content Nitroso R salt spectrophotometry;

--- Part 9. Determination of magnesium content by flame atomic absorption spectrometry;

--- Part 10. Determination of tungsten content thiocyanate spectrophotometry;

--- Part 11. Determination of molybdenum content thiocyanate spectrophotometry;

--- Part 12. Determination of silicon content Molybdenum blue spectrophotometry;

--- Part 13. Determination of lead content polarographic method;

1 Scope

GB/T 13747.16-2017 is the Chinese national standard on methods for chemical analysis of zirconium and zirconium alloys - part 16: determination of chloric content - silver chloride nephelometry and ion selective electrode method, in the field of metallurgy. 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 29 September 2017 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 2018. Classification: ICS 77.120.99, CCS H63. 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 13747 provisions of this part of zirconium and zirconium alloys Determination of chlorine. This section applies to sponge zirconium, zirconium and zirconium in the determination of chlorine. Method One Determination range .0.0010% ~ 0.030%; Method two test Setting range. 0.0004% ~ 0.020%. When the measurement method crosses, the method one is the arbitration method.

2 Method silver chloride turbidimetric method

2.1 Method summary Dissolved hydrofluoric acid sample, boric acid complex excess hydrofluoric acid, nitric acid medium, the silver and chloride ions to form silver chloride suspension, ethylene glycol Alcohol as a stabilizer, with a spectrophotometer to measure the turbidity value.

2.2 Reagents Unless otherwise specified, only reagents that are identified as analytically pure and laboratory-grade water are used in the analysis.

2.2.1 Ethylene glycol.

2.2.2 hydrofluoric acid (1 1), excellent grade pure.

2.2.3 boric acid saturated solution, excellent grade pure.

2.2.4 nitric acid (1 1), excellent grade pure.

2.2.5 silver nitrate solution (5g/L), stored in a brown bottle.

2.2.6 chlorine standard storage solution Weigh 0.1649g After 400 °C ~ 450 °C for 1h and cooled to room temperature sodium chloride (wNaCl >= 99.95%), dissolved in water, into a 1000mL volumetric flask, diluted with water to the mark, and mix. This solution 1 mL contains 100 μg of chlorine.

2.2.7 Chlorine standard solution Pipette 50.00mL chlorine standard stock solution (2.2.6) in 500mL volumetric flask, diluted with water to the mark, mixed uniform. 1 mL of this solution

contains 10 μg of chlorine.

2.3 Instruments Spectrophotometer.

2.4 sample Sponge zirconium, zirconium and zirconium alloy samples into chips.

2.5 Analysis steps

2.5.1 Sample According to Table 1 weighed sample (2.4), accurate to 0.1mg.