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GB/T 16484.20-2009

Chemical analysis methods of rare earth chloride and light rare earth carbonate - Part 20: Determination of nickel oxide, manganese oxide, lead oxide, aluminum oxide, zinc oxide, thorium oxide content - Inductively coupled plasma mass spectrometry

氯化稀土、碳酸轻稀土化学分析方法 第20部分：氧化镍、氧化锰、氧化铅、氧化铝、氧化锌、氧化钍量的测定 电感耦合等离子体质谱法

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Foreword

GB/T 16484-2009 "rare earth chloride and light rare earth carbonate chemical analysis method" is divided into 22 parts.

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--- Part 3. 15 with a rare earth element oxide component measured by inductively coupled plasma atomic emission spectrometry;

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1 Scope

GB/T 16484.20-2009 is the Chinese national standard on chemical analysis methods of

rare earth chloride and light rare earth carbonate - part 20: determination of nickel oxide, manganese oxide, lead oxide, aluminum oxide, zinc oxide, thorium oxide content - inductively coupled plasma mass spectrometry, 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 30 October 2009 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 May 2010. Classification: ICS 77.120.99, CCS H14. 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 16484 in the provisions of this part of the earth chloride and light rare earth carbonate, nickel oxide, manganese oxide, lead oxide, aluminum oxide, zinc oxide, Determination of the amount of thorium. This section applies to earth chloride and light rare earth carbonate, nickel oxide, manganese oxide, lead oxide, aluminum oxide, zinc oxide, thorium contents. Determination of the range in Table 1. Table

1 Oxide content range (mass fraction) /% oxide content in the range of (mass fraction) /% Alumina Nickel oxide Lead oxide 0.0020 ~ 0.10 0.0010 to 0.010 0.0010 to

0.010 Manganese oxide Zinc oxide Thoria 0.0010 to 0.10

0.010 to 0.20 0.0005 ~ 0.30

2 Principle of the method

The sample is dissolved in nitric acid in acid medium, ionized argon plasma source mass spectrometry directly, into the determination of standard method Line correction.

3 Reagents and materials

3.1 nitrate (rho1.42g/mL), pure class distinctions.

3.2 nitric acid (1 + 1).

3.3 nitric acid (1 + 199).

3.4 standard aluminum stock solution. Accurately weigh 1.0000g pure aluminum metal [w1 (Al) >=99.99%] in 300mL beaker, add 50mL of hydrochloric acid (1 + 1), a drop of mercury, dissolved by heating, cooled and transferred to 1000mL volumetric flask, dilute to the mark with water and mix. This solution 1mL containing 1mg aluminum.

3.5 manganese standard stock solution. Accurately weigh 1.0000g pure manganese metal [w1 (Mn) >=99.95%] in 300mL beaker, add 50mL of nitric acid (3.2), dissolved by heating,

cooling, transferred to 1000mL volumetric flask, dilute with water to volume, and mix. This solution containing 1mL 1mg manganese.

3.6 Nickel standard stock solution. Accurately weigh 0.2000g of pure nickel [w1 (Ni) >=99.95%] in 300mL beaker, add 20mL Nitric acid (3.2), dissolved by heating, cooling, transferred to 1000mL volumetric flask, dilute with water to volume, and mix. This solution containing 1mL 200μg nickel.

3.7 standard zinc stock solution. Accurately weigh 1.0000g of pure zinc metal [w1 (Zn) >=99.99%] in 300mL beaker, add 50mL Nitric acid (3.2), dissolved by heating, cooling, transferred to 1000mL volumetric flask, dilute with water to volume, and mix. This solution containing 1mL 1mg zinc.

3.8 lead standard stock solution. Accurately weigh 0.2500g pure metallic lead [w1 (Pb) >=99.99%] in 300mL beaker, add 20mL Nitric acid (3.2), dissolved by heating, cooling, transferred to 1000mL volumetric flask, dilute with water to volume, and mix. This solution containing 1mL