

XB

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

XB/T 617.2-2014

**Chemical analysis methods of neodymium iron boron alloy -
Part 2: Determination of fifteen REO relative contents**

钕铁硼合金化学分析方法 第2部分：十五个稀土元素量的测定 电感耦合等离子体
原子发射光谱法

(English Translation)

Issued on: October 14, 2014

Implemented on: April 1, 2015

**Issued by: Ministry of Industry and Information Technology of the
People's Republic of China**

Table of Contents

Foreword

1 Scope

2 Method 1: Inductively coupled plasma atomic emission spectrometry

3 Method 2: X-ray fluorescence spectrometry

4 Quality assurance and quality control

Foreword

This document was issued on 14 October 2014 by the Ministry of Industry and Information Technology of the People's Republic of China, and has applied since 1 April 2015.

It is an XB/T standard: a recommended industry standard of China's rare earth industry.

1 Scope

This part of XB/T 617 specifies the methods for the determination of fifteen REO relative contents in neodymium iron boron alloy, including Method 1: Inductively coupled plasma atomic emission spectrometry; Method 2: X-ray fluorescence spectrometry.

This part is applicable to the determination of fifteen REO relative contents in neodymium iron boron alloy. The determination range of Method 1 is shown in Table 1, and that of Methods 2 is shown in Table 2.

2.1 Principle

The test portion is digested with aqua regia. With the resulting solution being diluted to a dilute acid medium, the REO relative contents are directly determined by inductively coupled plasma emission spectrometry and calculated accordingly.

2.2 Reagents and materials

2.2.1

Y₂O₃, w(REO)>99.5%, w(Y₂O₃/REO)>99.99%, ignited at 900°C for 1 h.

2.2.2

La₂O₃, w(REO)>99.5%, w(La₂O₃/REO)>99.99%, ignited at 900°C for 1 h.

2.2.3

Ce₂O₃, w(REO)>99.5%, w(Ce₂O₃/REO)>99.99%, ignited at 900°C for 1 h.

2.2.4

Pr₂O₃, w(REO)>99.5%, w(Pr₂O₃/REO)>99.99%, ignited at 900°C for 1 h.

2.2.5

Nd₂O₃, w(REO)>99.5%, w(Nd₂O₃/REO)>99.99%, ignited at 900°C for 1 h.

2.2.6

Sm₂O₃, w(REO)>99.5%, w(Sm₂O₃/REO)>99.99%, ignited at 900°C for 1 h.

2.2.7

Eu₂O₃, w(REO)>99.5%, w(Eu₂O₃/REO)>99.99%, ignited at 900°C for 1 h.

2.2.8

Gd₂O₃, w(REO)>99.5%, w(Gd₂O₃/REO)>99.99%, ignited at 900°C for 1 h.

2.2.9

Tb₂O₃, w(REO)>99.5%, w(Tb₂O₃/REO)>99.99%, ignited at 900°C for 1 h.

2.2.10

Dy₂O₃, w(REO)>99.5%, w(Dy₂O₃/REO)>99.99%, ignited at 900°C for 1 h.

2.2.11

Ho₂O₃, w(REO)>99.5%, w(Ho₂O₃/REO)>99.99%, ignited at 900°C for 1 h.

2.2.12

Er₂O₃, w(REO)>99.5%, w(Er₂O₃/REO)>99.99%, ignited at 900°C for 1 h.

2.2.13

Tm₂O₃, w(REO)>99.5%, w(Tm₂O₃/REO)>99.99%, ignited at 900°C for 1 h.

2.2.14

Yb₂O₃, w(REO)>99.5%, w(Yb₂O₃/REO)>99.99%, ignited at 900°C for 1 h.

2.2.15

Lu₂O₃, w(REO)>99.5%, w(Lu₂O₃/REO)>99.99%, ignited at 900°C for 1 h.

2.2.16

H₂O₂ (30%).