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

YS/T 820.22-2012

**Methods for chemical analysis of laterite nickel ores. Part 22:
Determination of magnesium content. EDTA titration**

红土镍矿化学分析方法 第22部分：镁量的测定 EDTA滴定法

(English Translation)

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Foreword

This section drafted in accordance with GB/T 1.1-2009 given rules.

YS/T 820-2012 "Methods for chemical analysis of nickel laterite ore" is divided into 26 parts.

- Part 1. Determination of nickel content by flame atomic absorption spectrometry;
- Part 2. Determination of the amount of nickel dimethylglyoxime spectrophotometry;
- Part 3. Determination of total iron content of dichromate method;
- Part 4. Determination of phosphorus content - Molybdenum blue spectrophotometric method;
- Part 5. Determination of cobalt content by flame atomic absorption spectrometry;
- Part 6. Determination of copper content - Flame atomic absorption spectrometry;
- Part 7. Determination of calcium and magnesium content by flame atomic absorption spectrometry;
- Part 8. Determination of the amount of silica silicon potassium fluoride titration;
- Part 9. scandium, cadmium determination by inductively coupled plasma - mass spectrometry;
- Part 10. calcium, cobalt, copper, magnesium, manganese, nickel, zinc and phosphorus content - Inductively Coupled Plasma - Atomic Emission Spectrometry;
- Part 11. Determination of the amount of fluorine and chlorine ion chromatography;
- Part 12. Determination of manganese content by flame atomic absorption spectrometry;
- Part 13. Determination of lead content by flame atomic absorption spectrometry;
- Part 14. Determination of zinc content - Flame atomic absorption spectrometry;

- Part 15. Determination of cadmium content by flame atomic absorption spectrometry;
- Part 16. Determination of the amount of carbon and sulfur by high frequency combustion infrared absorption spectroscopy;
- Part 17. arsenic, antimony, bismuth contents hydride generation - atomic fluorescence spectrometry;
- Part 18. Determination of mercury content - Cold atomic absorption spectrometry;
- Part 19. Determination of energy aluminum, chromium, iron, magnesium, manganese, nickel and silicon content dispersive X-ray fluorescence spectrometry;
- Part 20. Determination of aluminum content EDTA titration;
- Part 21. Determination of chromium content ammonium ferrous sulfate titration;
- Part 22. Determination of magnesium content EDTA titration;
- Part 23. cobalt, iron, nickel, phosphorus, aluminum oxide, calcium oxide, chromium oxide, magnesium oxide, manganese oxide, silicon dioxide and titanium dioxide volume Wavelength dispersive X-ray fluorescence spectrometry;
- Part 24. Determination of hygroscopic water weight method;
- Part 25. Determination of combined water content - Gravimetric method;
- Part 26. Determination of loss on ignition - Gravimetric method.

This part is Part 22 YS/T 820-2012 in.

This method is a method of arbitration.

This standard by the national non-ferrous metals Standardization Technical Committee (SAC/TC243) centralized.

This standard by the Beijing General Research Institute of Mining and Metallurgy, People's Republic of China Bayuquan Exit Inspection and Quarantine, Jinchuan Group Ltd, Drafted.

This section is drafted. Jinchuan Group Limited.

Participated in the drafting of this section. People's Republic of China, Nantong Exit Inspection and Quarantine, Beijing General Research Institute of Mining and Metallurgy, the People's Republic of China State Exit Inspection and Quarantine of Liaoning, Guangzhou Nonferrous Metal Research Institute, Zhongbao Binhai Nickel Industry Co., Ltd., Guangxi silver billion Technology Co., Ltd. Mining and Metallurgy.

1 Scope

This section YS/T 820 specifies the method for the determination of magnesium content laterite nickel ore.

This section applies to the determination of magnesium content laterite nickel ore.
Measuring range. 2.00% to 20.00%.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version suitable for use herein Member. For undated references, the latest edition (including any amendments) applies to this document.

YS/T 820.24-2012 Methods for chemical analysis of nickel laterite Part 24. hygroscopic water - Gravimetric method

3 Method summary

Sample decomposition with an acid, with hexamethylenetetramine, diethylamino dithio sodium (DDTC) a lot of precipitation of metal ions, in pH10, the chrome black T as indicator, titration with EDTA standard solution titration combined amount of calcium and magnesium; in pH12, the calcium acid for directions Agents, standard titration with EDTA titration of calcium content of the solution, obtained by subtraction magnesium content.

4 Reagents

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

4.1

hydrochloride (rho1.19g/mL).

Nitrate 4.2 (rho1.42g/mL).

4.3

Hydrofluoric acid (rho1.15g/mL).

4.4

perchloric acid (rho1.67g/mL).

4.5

Ammonia (rho0.90g/mL).

4.6

hydrochloride (11).

4.7

Aqueous ammonia (11).

4.8

hexamethylenetetramine solution (300g/L).

4.9

diethylamino sodium dithiophosphate (copper reagent) solution (200g/L).

Triethanolamine 4.10 (14).

4.11

potassium hydroxide solution (200g/L).

4.12

ammonia - ammonium chloride buffer solution (pH10). Weigh 200g ammonium chloride, dissolved in water, aqueous ammonia was added 1620mL (4.5), diluted with water to 3000mL.

4.13

calcium acid indicator. Weigh 0.2g of calcium acid indicator, 20g potassium placed in a mortar finely placed grinding mouth bottle, stored in a dry Vessel.

4.14

chrome black T indicator solution. Weigh 0.25g chrome black T, dissolved in 100mL of ethanol.

4.15

Zinc standard solution. Accurately weigh 1.2447g at 800 °C $\pm$ 5 °C temperature burning furnace to constant weight basis zinc oxide reagent with