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

YS/T 820.25-2012

**Methods for chemical analysis of laterite nickel ores. Part 25:
Determination of combined water content. Gravimetric method**

红土镍矿化学分析方法 第25部分：化合水量的测定 重量法

(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 section YS/T 820-2012 Part 25.

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.

1 Scope

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

This section applies to a nickel laterite ore compounds measured amount of water.

Measurement range. from 5.00% to 13.00%.

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

In dry nitrogen stream at 1000 °C for heating water sample so that the compound is separated and collected in the water-absorbing agent containing the absorption tube Determined by gravimetric method.

4 Reagents

Unless otherwise indicated in the analysis using only recognized as analytical reagents.

4.1

water absorbing agent. anhydrous magnesium perchlorate, size 1mm ~ 3mm; or anhydrous calcium chloride, particle size 2mm ~ 5mm.

4.2

lead chromate - a mixture of lead oxide (21). Weigh 20g and 10g of lead chromate lead oxide, placed in 150mL beaker or porcelain crucible, add A small amount of asbestos and a small amount of acidic water, stir well, having a diameter of about 3mm ~ 5mm ball, heated at 500 °C ~ 600 °C high temperature furnace 1h. After cooling spare placed in a desiccator.

4.3

sulfate (rho1.84g/mL).

4.4

silver Volume. wire diameter of about 0.25mm.

4.5

Nitrogen. 99.9%.

5.1 Purification System

5.1.1

Gas Flow Meter. Measuring range 0mL/min ~ 150mL/min.

5.1.2

scrubber. packages containing sulfuric acid (4.3).

5.1.3

gas drying tower. built-in water-absorbing agent (4.1).

5.2 High-temperature heating system

5.2.1

tube furnace. two section furnace, diameter of about 35mm. Section furnace length 230mm, can be heated to $1000\text{ }^{\circ}\text{C} \pm 50\text{ }^{\circ}\text{C}$; s