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

YS/T 710.2-2009

Replacing YS/T 256-2000

**Methods for chemical analysis of cobalt oxide. Part 2:
Determination of sodium content. Flame atomic absorption
spectrometry method**

氧化钴化学分析方法 第2部分：钠量的测定 火焰原子吸收光谱法
(English Translation)

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Table of Contents

Foreword
1 Scope
2 Method summary
3 Reagents
3.1 Commercially available reagents
3.2 Solution
3.3 Standard solution
4 Instrument

Foreword

YS/T 710 "cobalt oxide chemical analysis method" is divided into six sections.

- Part 1. Determination of cobalt content potentiometric titration;
- Part 2. Determination of sodium content by flame atomic absorption spectrometry;
- Part 3. Determination of the amount of sulfur by high frequency combustion infrared absorption method;
- Part 4. Determination of arsenic content by atomic fluorescence spectrometry;
- Part 5. Determination of silicon content - Molybdenum blue spectrophotometric method;
- Part 6. calcium, cadmium, copper, iron, magnesium, manganese, nickel, lead and zinc content - Inductively coupled plasma atomic emission spectrometry.

This section YS/T Part 2 710.

The partial replacement of YS/T 256-2000 "cobalt oxide" in Appendix B. Compared with YS/T 256-2000 "cobalt oxide" in Appendix B, this section the main changes are as follows.

- Of YS/T 256-2000 "cobalt oxide" B text has been modified Appendix;
- Complements the precision and quality assurance and control provisions.

The non-ferrous metal part by the National Standardization Technical Committee and centralized.

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1 Scope

YS/T of the provisions of section 710 of the method for the determination of the amount of sodium cobalt oxide.

This section applies to the determination of the amount of sodium cobalt oxide.

Measurement range. 0.0010% to 0.020%.

2 Method summary

Sample decomposition with hydrochloric acid, hydrochloric acid medium, cesium chloride as an inhibitor, atomic absorption spectrometer at a wavelength of 589nm, the use of air-Acetylene flame measured absorbance sodium. Calculate the amount of sodium by the working curve method.

3.1 Commercially available reagents

Hydrochloric acid ($\rho=1.19\text{g/mL}$), pure class distinctions.

3.2 Solution

Cesium chloride solution (5g/L). formulated with spectroscopically pure cesium chloride.

3.3 Standard solution

3.3.1

Sodium standard stock solution. Weigh 0.2542g sodium chloride (excellent pure) (pre-dried in an oven at 110 °C 2h and dried Vessel was cooled to room temperature), placed in a quartz 150mL beaker, deionized water and dissolved moved 1L volumetric flask, dilute with deionized water to Mark, moved into a plastic bottle. This standard stock solution containing sodium 1mL 0.1mg.

3.3.2

Sodium standard solution. Pipette 5.00mL sodium standard stock solution (3.3.1) into 100mL flask, diluted with deionized water to Mark, shake and then transferred to a plastic bottle for storage. This solution 1mL containing 5 μg sodium.

4 Instrument

Atomic absorption spectrometer, with a sodium hollow cathode lamp.

Under optimum working conditions for those who can reach the following indicators can be

used.

--- Characteristic concentration. in the measurement sample solution matrix consistent solution, characterized in sodium concentration should not exceed 0.25 μ g/mL.

--- Precision. standard solution with the highest concentration of 10 times the absorbance measurements, the standard deviation should not exceed the average absorbance of 1.0%;

The lowest concentration of standard solution used (instead of "zero" standard solution) absorbance measured 10 times, and the standard deviation should not exceed the maximum concentration 0.5% of the mean absorbance of standard solution.

Linear curve. The curve is divided into five sections according to concentration, than the difference between the absorbance of the absorbance difference between the highest and the lowest segment, it should not be less than 0.7.

AAS Reference operating conditions.

--- Wavelength of 589nm;

--- Lamp current 2.0mA;

--- Stoichiometric flame atomic zone determination.