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SN

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

SN/T 0838.1-2015

Replacing SN/T 0838.1-1999

**Determination of chromium in boric acid and borax for import
and export. Flame atomic absorption spectrometry**

进出口硼酸和硼砂中铬含量测定方法 火焰原子吸收分光光度法

(English Translation)

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Foreword

SN/T 0838 is divided into 5 parts.

--- SN/T 0838.2-2015 Determination of cobalt content in boric acid and borax - Atomic absorption spectrophotometric method;

--- SN/T 0838.3-2015 Determination of nickel content in boric acid and borax - Atomic absorption spectrophotometric method;

--- SN/T 0838.4-2015 Determination of manganese content in boric acid and borax - Atomic absorption spectrophotometric method;

--- SN/T 0838.5-2015 Determination of copper content in boric acid and borax - Atomic absorption spectrophotometric method.

This part is the first part of SN/T 0838.

This part is drafted in accordance with the rules given in GB/T 1.1-2009.

This part replaces SN/T 0838.1-1999 "Determination of the content of boric acid and borax chromium". This part and SN/T 0838.1-Compared with 1999, the main technical changes are as follows.

--- Increased flame atomic absorption spectrophotometry;

--- Removed the standard for sampling in the normative references;

--- Removed the "3.4 Sampling" section.

This part is proposed and managed by the National Certification and Accreditation Administration.

This section drafted by. Jilin Entry-Exit Inspection and Quarantine Bureau of the People's Republic of China.

1 Scope

This part of SN/T 0838 specifies a method for the determination of chromium in boric acid and borax by flame atomic absorption spectrophotometry.

This section applies to the determination of chromium content in the import and export of boric acid and borax, the measurement range is 0.40mg/kg~75.00mg/kg.

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only dated versions apply to this article.

Pieces. For undated references, the latest edition (including all amendments) applies to this document.

GB/T 6682 Analytical laboratory water specifications and test methods

3 Method summary

The sample was dissolved in 6% nitric acid in a boiling water bath, and then in a nitric acid medium, using an atomic absorption spectrophotometer at a wavelength of 357.9 nm.

The absorbance of chromium is determined by an air-acetylene flame.

4 Reagents and materials

Unless otherwise stated, only use chemical reagents identified as superior grade or treated by a steam acid system. Water is specified in GB/T 6682.

Secondary water.

4.1

Nitric acid ($\rho = 1.4 \text{ g/mL}$).

4.2 6% nitric acid solution. Mix appropriate amount of nitric acid (4.1) and water at a volume ratio of 6.94.

4.3

Chromium standard stock solution. The concentration is 1000 $\mu\text{g/mL}$, and the commercially available certified chromium element standard solution is used.

4.4

Chromium standard working solution. accurately transfer appropriate amount of chromium standard stock solution (4.3), and gradually dilute with 6% nitric acid solution (4.2) to make solution concentration it is 10 µg/mL.

5 Instruments and equipment

5.1

Atomic absorption spectrophotometer. equipped with a chrome hollow cathode lamp, see Appendix A for working conditions.

5.2

Analytical balance. The sensitivity is 0.1 mg.

5.3

Volumetric flask. 50mL, 100mL.

5.4

Tube. 25 mL.

5.5

Pipette. 1mL, 5mL, 10mL.

6.1 Blank test

A blank test was performed along with the sample.