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

GB/T 31311-2014

**Metallurgical-grade fluorspar -- Determination of lead content --
Solvent extraction atomic absorption spectrometric method**

冶金级萤石 铅含量的测定 溶剂萃取原子吸收光谱法

(English Translation)

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Foreword

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

This standard uses the redrafted law revision using ISO 9779:1993 "Determination of metallurgical grade fluorspar solvent extraction atomic absorption of lead content Income spectroscopy. " this standard and ISO 9779:1993 as compared to the main job of the following changes.

- Normative references used in place of national standards with international standards corresponding;
- Increased sodium iodide reagent, ascorbic acid, trioctylphosphine oxide, lead oxide, mass fraction $\geq 99.9\%$, calcium carbonate and hydrochloric acid, $\rho = 1.19\text{g/mL}$ of terms;
- Increase the work requirement indicators atomic absorption spectrometer;
- Pear-shaped separating funnel volume 100mL revised to 125mL;
- Platinum dish is amended as platinum dish or polytetrafluoroethylene beaker;
- Increasing the number of measurements of the sample;
- Preparation of calibration solution obtained by dissolving the sample in line with the procedures carried out at the same time remove the Table 1;
- Increase in the content of the calculation results are shown;
- Increasing the precision of the standard;
- Added Appendix A to accept the results of sample analysis program flowchart;
- Made editorial changes, mergers and modify the description about the operation of the instrument and the calibration solution prepared.

The standard proposed by China Iron and Steel Association.

This standard by the National Steel Standardization Technical Committee (SAC/TC183) centralized.

This standard was drafted. Ningbo Inspection and Quarantine Institute of Science and Technology, Metallurgical Industry Information Standards Institute.

1 Scope

This standard specifies the fluorite solvent extraction of lead content by atomic absorption spectrometric method.

This standard applies to the determination of lead content in metallurgical grade fluorspar in measurement range (mass fraction) of 0.0006% to 0.01%.

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.

Basic dimensions GB/T 6005 Test sieves - Metal wire cloth, perforated plate and electroformed sheet mesh (GB/T 6005-2008, ISO 565:1990, MOD) GB/T 6682 analytical laboratory use specifications and test methods (GB/T 6682-2008, ISO 3696. 1987, MOD) GB/T 22564 fluorite sampling and sample preparation (GB/T 22564-2008, ISO 8868. 1989, IDT) Principle 3 Sample with nitric acid, a mixed acid of hydrofluoric acid and perchloric acid digestion, after evaporated, dissolved in hydrochloric acid salts, diluted with distilled water trioctyl 4-methyl-2-pentanone solution was extracted lead oxide to form a sample solution. By atomic absorption spectrometry, air - acetylene flame, the female lead in hollow Pole lamp, measuring the absorbance of lead test solution at a wavelength of 283.3nm place, according to the quantitative relationship between the analyte concentration and the absorbance is calculated Content measured elements.

4 Reagents

Unless otherwise stated, use only reagents of recognized analytical grade and in line with GB/T 6682 stipulated two water purity or rather their of water.

4.1

sodium iodide.

4.2

ascorbic acid.

4.3

trioctylphosphine oxide.

4.4

lead powder mass fraction $\geq 99.9\%$.

4.5

calcium carbonate.

4.6 4-methyl-2-pentanone.

Hydrochloric acid 4.7, $\rho = 1.19\text{g/mL}$.

Nitric acid 4.8, $\rho = 1.42\text{g/mL}$.