

ICS 77.120
CCS H60



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

GB/T 22660.5-2008

**Chemical analysis methods of lithium fluoride - Part 5:
Determination of calcium content - Flame atomic absorption
spectrometric method**

氟化锂化学分析方法 第5部分：钙含量的测定 火焰原子吸收光谱法

Issued on: December 29, 2008

Implemented on: November 1, 2009

**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine of the People's Republic of China;
Standardization Administration of China**

Table of Contents

- 1 Scope
- 2 Normative references
- 3 Method summary
- 4 Reagents
- 5 Instruments and equipment

Foreword

GB/T 22660 "Methods for chemical analysis of lithium fluoride" is divided into eight sections.

- Part 1. Preparation and storage of test samples;
- Part 2. Determination of the weight of water in the wet method;
- Part 3. Determination of distillation of fluorine content - thorium nitrate volumetric method;
- Part 4. Determination of magnesium by flame atomic absorption spectrometry;
- Part 5. Determination of calcium content by flame atomic absorption spectrometry;
- Part 6. Determination of silicon dioxide content - Molybdenum blue spectrophotometric method;
- Part 7. Determination of iron oxide content phenanthroline spectrophotometry;
- Part 8. Determination of sulfate content of barium sulfate gravimetric method. This is Part 5 GB/T 22660 of. This part is proposed by the China Nonferrous Metals Industry Association. The non-ferrous metal part by the National Standardization Technical Committee. This section is responsible for drafting unit. Fluoride Chemicals Co., Ltd., China Nonferrous Metals Industry Standards and Metrology Institute for Quality. Participated in the drafting of this section. Hunan Nonferrous fluorine chemical limited liability company, Aluminum Corporation of China Zhengzhou Research Institute. The main drafters of this section. Han Shijun, Li Yongqiang, Xue Xu Jin, Vicky division, Xu army, BU Law See Zhu Liang, Li Zhijian, even Chen Xi, Lan Wen Hui. Methods for chemical analysis of lithium fluoride Part 5. Determination of calcium content Flame Atomic Absorption Spectrometry

1 Scope

GB/T 22660.5-2008 is the Chinese national standard on chemical analysis methods of

lithium fluoride - part 5: determination of calcium content - flame atomic absorption spectrometric method, in the field of metallurgy. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 29 December 2008 by the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China; Standardization Administration of China, and has been in force since 1 November 2009. Classification: ICS 77.120, CCS H60. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This section GB/T 22660 specifies the method for determination of lithium fluoride in calcium content. This section applies to the determination of lithium fluoride content of calcium. Measuring range. $\leq 0.50\%$.

2 Normative references

The following documents contain provisions which, through reference

GB/T 22660 in this section constitute provisions of this section. For dated reference documents Member, all subsequent amendments (not including errata content) or revised edition are not adapted to this section, however, encouraged to reach under this section Parties to research agreement to use the latest versions of these documents. For undated references, the latest edition of this adaptation section.

GB/T 22660.1-2008 Chemical analysis methods of lithium fluoride - Part 1. Sample Preparation and Storage

3 Method summary

Sample with perchloric catch fluorine, heated to high acid smokes do, dissolved in hydrochloric acid and water, in the presence of lanthanum nitrate, atomic absorption spectrometer wave Long 422.7nm at the air - acetylene flame measured calcium content.

4 Reagents

4.1 perchloric acid ($\rho 1.67\text{g/mL}$).

4.2 hydrochloric acid (1 + 1) pure class distinctions.

4.3 lithium solution (7.5mg/mL). Weigh accurately 6.5628g a purity of 99.9% $\text{LiOH} \cdot \text{H}_2\text{O}$, constant volume of water in 500mL capacity Flask.

4.4 lanthanum nitrate solution (200g/L). Weigh accurately 100g $\text{La}(\text{NO}_3)_3 \cdot \text{H}_2\text{O}$, constant volume of water in 500mL flask.

4.5 Calcium standard stock solution. Weigh accurately 1.2486g pre-drying at 110 °C and cooled in the dryer baseline calcium carbonate placed 250mL beaker, covered with a watch glass, was added 50mL of water, add 10mL of hydrochloric acid (4.2) micro heat, until the reaction is complete, cool, moved 500mL volumetric flask, dilute with water to volume, and mix. 1mL solution containing calcium ions 1.0000mg.

4.6 Calcium standard solution. Pipette calcium standard stock solution (4.5) 10mL placed in 250mL volumetric flask, dilute to volume, mix, then the solution Solution concentration. 40μg/mL.

5 Instruments and equipment

5.1 platinum dish. diameter 80mm, high 35mm.

5.2 Atomic absorption spectrometer, with a calcium hollow cathode lamp. Under optimum working conditions, who can be used to achieve the following indicators.

--- Characteristic concentration. in the measurement of the sample matrix was consistent with the characteristic concentration of calcium should not exceed 0.24μg/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% With the lowest concentration of standard solution (not "zero" concentration of the standard) measuring the absorbance of 10 times, the standard deviation should not exceed the maximum 0.5% concentration of the standard average absorbance.