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YS

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

YS/T 581.16-2008

**Chemical analysis methods and determination of physical performance
of industrial aluminium fluoride. Part 16: X-ray fluorescence
spectrometric method for the determination of elements content**

氟化铝化学分析方法和物理性能测定方法 第16部分：X射线荧光光谱分析法测定
元素含量

(English Translation)

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Foreword

YS/T 581 "aluminum fluoride chemical analysis methods and determination of physical performance" is divided into 16 parts.

- Part 1. Determination of the content of water in wet weight method;
- Part 2. Determination of burning reductions;
- Part 3. distillation - thorium nitrate volumetric method for the determination of fluorine content;
- Part 4. Determination of aluminum content - EDTA volumetric method;
- Part 5. Determination by flame atomic absorption spectrometry sodium content;
- Part 6. molybdenum blue spectrophotometric determination of silicon dioxide content;
- Part 7. phenanthroline spectrophotometric determination of ferric oxide content;
- Part 8. Determination of sulfate content barium sulphate gravimetric method;
- Part 9. molybdenum blue spectrophotometric determination of phosphorus pentoxide content;
- Part --- Article 10. X-ray fluorescence spectrometric method for the determination of sulfur content;
- Part 11. sample preparation and storage;
- Part 12. Determination of particle size distribution - sieving method;
- Part 13. Determination of angle of repose;
- Part 14. Determination of bulk density;
- Part 15. Determination of free alumina content;

--- Part 16. Determination of Elements in X-ray fluorescence spectroscopy.

This is Part 16.

Appendix A of this section is an informative annex.

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

This part of the Aluminum Corporation of China Zhengzhou Research Institute, China Nonferrous Metals Industry Institute of Standards Metrology and Quality is responsible for drafting.

This section is more fluoride Chemical Co., Neimengguhuo coal Hongjunlvodian limited liability company, Fujian Nanping Aluminium Co., Ltd. participated Drafted.

1 Scope

This section provides aluminum fluoride, fluorine, aluminum, sodium, silicon, iron, sulfur, phosphorus content (F, Al, Na, SiO₂, Fe₂O₃, SO₂-4, P₂O₅ represented) Measurement method.

This section applies to fluorine, aluminum, sodium, silicon, iron, sulfur, aluminum fluoride determination of phosphorus content. Determination of the range in Table 1.

Table 1

Component measuring range /% F 50.00 ~ 68.00 Al 25.00 ~ 36.00 Na 0.020 ~ 10.00 SiO₂ 0.010 ~ 0.60 Component measuring range /% Fe₂O₃ 0.010 ~ 0.50 SO₂-4 0.10 ~ 2.00 P₂O₅ 0.0020 ~ 0.30

2 Principle of the method

Sample anhydrous lithium tetraborate and lithium metaborate mixed flux melted, add a small amount of lithium bromide (or iodide) as a release agent. In the melt prototype Melted into glass samples. Measured by X-ray fluorescence spectrometer. Theoretical coefficient alpha or fundamental parameter calibration between the absorbent element -Enhancement.

3 Reagents

3.1

anhydrous lithium tetraborate and lithium metaborate mixed flux [Li₂B₄O₇ (67%) + LiBO₂ (33%)]. at 700 °C burning 2h, dry place Dryer saved.

3.2

remover. a saturated solution of lithium bromide or ammonium iodide solution (300g/L).

3.3

Sample Monitoring. Monitor sample should be stable glass, contains all the elements of calibration, so that its content should be less than the statistical error count rate or equal to the count rate calibration element statistical error.

4 Instrument

Platinum 4.1 - gold alloy crucible (95% Pt + 5% Au).

4.2

platinum - gold alloy casting (95% Pt + 5% Au). bottom mold material thickness of about 1mm, making it difficult to deformation.

Note: The sample vessel melt casting mold can be combined. If the sample in the crucible directly after melt molding, the bottom surface of the inner wall of the crucible is required smooth.

4.3

fusion machine. automatic flame melt melting prototype or high-frequency inductors, if other types of prototype melting temperature not lower than 1100 °C, and can be controlled Temperature, control accuracy of ± 15 °C.

4.4

wavelength dispersive X-ray fluorescence spectrometer. end window rhodium anode X-ray tube.

5 Sample

The specimen shall conform YS/T 581.11 in 3.3 requirements.