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

YS/T 63.26-2012

**Carbonaceous materials used in the production of aluminium.
Part 26: Dense refractory bricks. Determination of cryolite
resistance**

铝用炭素材料检测方法 第26部分：耐火材料抗冰晶石渗透能力的测定
(English Translation)

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Table of Contents

- Foreword
- 1 Scope
- 3 Sampling
- 4 Reagents
- 5 Test device

Foreword

YS/T 63 "Carbonaceous material for aluminum," a total of 26 parts.

- Part 1. firing process, firing weightlessness measurement sample measurement cathode paste and green specimens apparent density;
- Part 2. Determination of cathode blocks and prebaked anodes room temperature resistivity;
- Part 3. Determination of the thermal conductivity of Comparative Law;
- Part 4. Determination of thermal expansion coefficient;
- Part 5. Determination of pressure at the bottom there is sodium expansion of carbon block;
- Part 6. Determination of open porosity hydrostatic law;
- Part 7. Determination of apparent density size method;
- Part 8. Determination of density in xylene Pyknometer;
- Part 9. Determination of true density of helium hydrometer method;
- Part 10. Determination of air permeability;
- Part 11. Determination of the reactivity to air mass loss method;
- Part 12. Determination of the reactivity prebaked anode CO₂ mass loss method;
- Part 13. Determination of Young's modulus of the static measurement method;
- Part 14. Determination of flexural strength of three-point method;
- Part 15. Determination of compressive strength;
- Part 16. Determination of Trace Elements in X-ray fluorescence spectrometry method;

- Part 17. Determination of volatile matter;
- Part 18. Determination of moisture content;
- Part 19. Determination of ash content;
- Part 20. Determination of sulfur;
- Part 21. cathode paste firing the expansion/contraction of determination;
- Part 22. Determination of equivalent temperature roasting degree method;
- Part 23. Determination of the reactivity to air prebaked anode thermal gravimetry;
- Part 24. Determination of prebaked anodes CO₂ reactivity thermogravimetric method;
- Part 25. Determination of pressure at the bottom there is sodium expansion of carbon block;
- Part 26. Determination of refractories cryolite penetration ability.

Part is divided into 26 sections.

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

This section uses the translation method identical with ISO 20292:2009 "carbonaceous materials used in aluminum refractories cryolite penetration measured set". This part identical with ISO 20292:2009, the Introduction and delete its references, the standard name in accordance with the requirements of this standard series We were unified.

The non-ferrous metal part by the National Standardization Technical Committee (SAC/TC243) centralized.

This section is responsible for drafting unit. Cable-Development Co., Ltd., Zhengzhou Research Institute, Aluminum Corporation of China, China Nonferrous Metals Industry Standards and Metrology Institute for Quality.

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1 Scope

YS/T of the provisions of section 63 of the determination of dense refractories cryolite with an excess of sodium permeability molten state approach.

This section applies to aluminum electrolytic refractories.

Principle 2

The dense refractory material to be measured made into a crucible type specimens loaded cryolite and sodium fluoride powder in the sample mixture (particle size

3 Sampling

Remove the number of pieces from the same batch of refractories, and then removed from at least two samples are prepared.

4 Reagents

4.1

powder cryolite (Na_3AlF_6). mass fraction of $\geq 97\%$, a particle size of less than $100\mu\text{m}$.

Powder 4.2 sodium fluoride (NaF). mass fraction of $\geq 99\%$, a particle size of less than $100\mu\text{m}$.

Important. during the electrolysis of aluminum, the electrolyte layer material will penetrate into charcoal, then penetrate refractories. Typically, electrolytic the reaction was mixed with refractory occurrence will prevent further penetration. Therefore, experiment with different refractory penetration resistance is very important. This test Industrial cells and infiltration occurs in good correlation.

5 Test device

5.1

water-cooled diamond saw.

5.2

Core drilling. with standard water-cooling rig.

5.3

Rig three components.

a) $\phi 50\text{mm}$ diamond core drill bit, drill a hole $\phi 57\text{mm} \pm 1\text{mm}$;

b) $\phi 30\text{mm}$ core drill bit;

c) mounted on the bar of $48\text{mm} \sim 50\text{mm}$ diameter steel disc. The bottom surface of the disc has a core drill diamond paste sheet thickness Degree of 3mm , a steel disc with the same radius of curvature (see Fig. 1).