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

YS/T 63.23-2012

**Carbonaceous materials used in the production of aluminium.
Part 23: Baked anodes. Determination of the reactivity to air.
Thermogravimetric method**

铝用炭素材料检测方法 第23部分：预焙阳极空气反应性的测定 热重法
(English Translation)

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Foreword

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

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This is Part 23.

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

This section is non-arbitration.

This section uses the translation method identical with ISO 12989.2:2004 "carbonaceous materials used in the production of aluminum and prebaked anode carbon block air side Determination of reactivity - Part 2 thermal gravimetry. " This part of ISO 12989.2:2004 made the following editorial changes.

- Removed 12989.2.2004 directory, foreword, introduction, and references;
- Standard name in accordance with the requirements of the standard in this series have been modified;

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

This section is responsible for drafting units. Aluminum Corporation of China Zhengzhou Research Institute, 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 method of thermogravimetric (TGA) was measured prebaked anode reactivity to air.

This section applies to the determination of prebaked anode air reactivity thermogravimetric (TGA). Since the heating conditions, the sample size, material, quality measurement Too many losses and subsequent reaction rate of the diversity of available devices. This section provides the sample size, reaction temperature, surface gas flow Degree and reaction time, so that the results of different devices measured are comparable.

2 Terms and definitions

The following terms and definitions apply to this document.

Off rate airdustingrate α_{phd} .

During the test, the unit area per unit time from the falling amount of charcoal dust.

End stage air reactivity finalairreactivity α_{phf} .

The carbon block, the reaction chamber is exposed to the air atmosphere last 30min, the sample mass loss ratio of the original surface area.

Note: milligrams per square centimeter per hour ($\text{mg}/(\text{cm}^2 \cdot \text{h})$).

The initial phase of the reactivity to air initialairreactivity α_{phai} .

The carbon block, the reaction chamber is exposed to an air atmosphere during the first 30min, the sample mass loss ratio of the original surface area.

Note: milligrams per square centimeter per hour ($\text{mg}/(\text{cm}^2 \cdot \text{h})$).

The overall reaction of the air totalairreactivity α_{phaT} .

Charcoal in the reaction chamber is exposed to an air atmosphere within the total time 180min, loss of quality (including dust and amount) with the original specimen surface area Ratio.

Note: milligrams per square centimeter per hour ($\text{mg}/(\text{cm}^2 \cdot \text{h})$).

3 PRINCIPLE OF THE METHOD

Cylindrical carbon block surface by a given flow rate of air flow, isothermal reaction conditions and within the specified time, to determine the loss rate, early Initial stage, the end of the stage and the overall reactivity to air. Continuous monitoring by the sample mass loss was measured continuously reactivity. Loss rate by the collector and in measuring the reaction process falling on carbon block carbon particles is determined.

4 Test device

4.1

Air reactive equipment. devices should be as simple as possible. The reaction rate was measured require isothermal conditions, the reaction should not be the instrument