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

GB/T 6609.25-2023

Replacing GB/T 6609.25-2004

**Chemical analysis methods and determination of physical
performance of alumina - Part 25: Method for the determination
of tapped and untapped density**

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Standardization Administration**

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5.1 Bulk density measuring device consists of the following.

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1. Structure and Drafting Rules of Standardization Documents"

Drafting.

This document is Part 25 of GB/T 6609 "Chemical Analysis Methods and Physical Properties Determination Methods of Alumina". GB/T 6609 has been

The following sections were published.

---Part 1. Determination of trace element content by inductively coupled plasma atomic emission spectrometry;

---Part 2. Determination of mass loss at 300 degrees C and 1000 degrees C;

---Part 3. Determination of silica content by molybdenum blue photometry;

---Part 4. Determination of ferric oxide content by photometric method of o-phenanthroline;

---Part 5. Determination of sodium oxide content;

---Part 6. Determination of potassium oxide content;

---Part 7. Determination of titanium dioxide content by photometric method using diantipyrimethane;

---Part 8. Determination of chromium trioxide content by diphenylcarbazide photometric method;

---Part 9. Determination of copper oxide content by new cuprophotometric method;

- Part 10.Determination of vanadium pentoxide content by benzoyl phenyl hydroxylamine extraction photometry;
- Part 11.Determination of manganese monoxide content by flame atomic absorption spectrometry;
- Part 12.Determination of zinc oxide content by flame atomic absorption spectrometry;
- Part 13.Determination of calcium oxide content by flame atomic absorption spectrometry;
- Part 14.Determination of fluorine content by lanthanum-alizarin complex ketone spectrophotometry;
- Part 15.Determination of chlorine content by iron thiocyanate photometric method;
- Part 16.Spectrophotometric determination of boron trioxide content in curcumin;
- Part 17.Determination of phosphorus pentoxide content by molybdenum blue spectrophotometry;
- Part 18.Determination of sulfate content by N,N-dimethyl-p-phenylenediamine spectrophotometry;
- Part 19.Determination of lithium oxide content by flame atomic absorption spectrometry;
- Part 20.Determination of magnesium oxide content by flame atomic absorption spectrometry;
- Part 21.Determination of gallium trioxide content by butylrhodamine B spectrophotometry;
- Part 22.Sampling;
- Part 23.Preparation and storage of specimens;
- Part 24.Determination of angle of repose;
- Part 25.Determination of loose and tapped density;
- Part 26.Determination of effective density by pycnometer method;
- Part 27.Particle size analysis and screening method;
- Part 29.Determination of adsorption index;
- Part 30.Determination of trace element content by wavelength dispersive X-ray fluorescence spectrometry;
- Part 31.Determination of flow angle;
- Part 32.Determination of alpha-aluminum oxide content by X-ray diffraction method;
- Part 33.Determination of wear index;

---Part 34.Calculation method of aluminum oxide content;

---Part 35.Determination of specific surface area by nitrogen adsorption method;

---Part 36.Determination of flow time.

This document replaces GB/T 6609.25-2004 "Methods for chemical analysis and physical properties of alumina - Measurement of bulk density."

"Standard", compared with GB/T 6609.25-2004, in addition to structural adjustments and editorial changes, the main technical changes are as follows.

- a) Changed the scope (see Chapter 1, Chapter 1 of the.2004 edition);
- b) Added the principle of tap density determination (see Chapter 4);
- c) Added the instruments required for tap density measurement (see Chapter 5);
- d) Added steps for tap density determination (see Chapter 6);
- e) Added the calculation of tap density measurement and analysis results (see Chapter 7);
- g) Increased tap density repeatability and reproducibility (see Chapter 8).

This document has been modified to adopt ISO 18842.2015 "Determination of loose and tapped density of alumina mainly used in aluminum production".

Compared with ISO 18842.2015, this document has many structural adjustments.

Comparison list of structure number changes between the two files

See Appendix A.

Compared with ISO 18842.2015, there are many technical differences between this document and the clauses involved in the outer margin of the page.

Single lines (I) are marked. A list of these technical differences and their causes is provided in Appendix B.

The following editorial changes have been made to this document.

---Modify the name of the standard to "Methods for chemical analysis and physical properties of alumina - Part 25.Bulk and tapped density"

Determination of "

Please note that some content in this document may be subject to patents. The publisher of this document assumes no responsibility for identifying patents.

Introduction

Alumina is the main raw material of the aluminum industry. In the standard system of the aluminum industry, GB/T 6609 "Chemical Analysis Methods and Materials of Alumina"

"Rational Performance Determination Method" is a very important part and plays an important role in ensuring the quality of alumina products. The standard service

It provides technical support for the high-quality development of my country's aluminum industry in alumina and electrolytic aluminum production, trade settlement, etc.

GB/T 6609 is a standard for chemical analysis methods and physical properties determination methods of alumina, including silicon, iron, sodium, potassium,

Methods for determination of titanium, chromium, copper, vanadium, manganese, zinc, calcium, fluorine, chlorine, boron, phosphorus, sulfate, lithium, magnesium, gallium, moisture, alpha-alumina and other components, and

The determination method of indicators such as angle of repose, density, particle size distribution, adsorption index, flow angle, wear index, specific surface area, flow time, etc., shall be determined in accordance with the test

The object is proposed to be divided into 35 parts.

GB/T 6609.25 is a method for determination of bulk density of alumina. This revision adds the measurement of tap density to meet daily monitoring and

Alumina trading needs.

Alumina chemical analysis methods and physical properties determination methods

Part 25.Determination of loose and tapped density

1 Scope

This document describes methods for the determination of bulk and tap density of alumina.

This document is applicable to the determination of bulk and tapped density of alumina. Aluminum hydroxide, fine alumina and other solid granular materials may refer to implement.

2 Normative reference documents

The contents of the following documents constitute essential provisions of this document through normative references in the text. Among them, the dated quotations

For undated referenced documents, only the version corresponding to that date applies to this document; for undated referenced documents, the latest version (including all amendments) applies to

this document.

GB/T 6609.22 Sampling methods for chemical analysis and physical property determination of alumina (GB/T 6609.22-2004, ISO