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

GB/T 38216.3-2023

**Steel slag-Determination of f-CaO-EDTA titration and
thermogravimetric analysis**

钢渣 游离氧化钙含量的测定 EDTA滴定和热重分析法

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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 3 of GB/T 38216 "Steel Slag": GB/T 38216 has released the following parts:

- GB/T 38216:1 Determination of chromium oxide content in steel slag diphenylcarbazide spectrophotometry;
- GB/T 38216:2 Determination of fluorine and chlorine content in steel slag by ion chromatography;
- GB/T 38216:3 Determination of free calcium oxide content in steel slag EDTA titration and thermogravimetric analysis:

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Introduction

Steel slag is a by-product produced during the steelmaking process and contains total iron, calcium oxide, magnesium oxide, sulfur trioxide, total carbon, silicon dioxide, trioxide, It contains aluminum oxide, phosphorus pentoxide, zinc oxide, chromium oxide and other ingredients, and also contains anions such as fluorine and chlorine: After steel slag treatment, some steel slag can be returned The steel industry serves as raw material; stabilized steel slag is a good green material and can replace some natural materials: Solid waste in metallurgy In the comprehensive utilization standard system of steel slag, the determination method of chemical composition of steel slag is a very important part and plays an important role in ensuring the quality of steel slag products:

To work: GB/T 38216 "Steel Slag" serves the handling, processing, trade and application of steel slag, and provides technology for the high-quality green development of the steel industry:

The technical support is planned to be composed of five parts:

- GB/T 38216:1 Determination of chromium oxide content in steel slag diphenylcarbazide spectrophotometry: The purpose is to standardize steel Determination of chromium oxide content in slag, accurate determination of chromium content in steel slag, harmless treatment and resource reuse of steel slag, especially In particular, the demand for green manufacturing is of great significance:
- GB/T 38216:2 Determination of fluorine and chlorine content in steel slag by ion chromatography: The purpose is to accurately measure the fluorine content in steel slag, The chlorine content can better meet the application of upstream and downstream industries:
- GB/T 38216:3 Determination of free calcium oxide content in steel slag EDTA titration and thermogravimetric analysis: The purpose is to regulate Determination of free calcium oxide content in steel slag: Steel slag is used as a substitute for raw materials in building materials, roads, construction and other industries:

Calcium oxide content has been strictly limited, and accurate determination of free calcium

oxide content is beneficial to the resource utilization of steel slag:

- GB/T 38216:4 Determination of total iron content in steel slag titanium trichloride-potassium dichromate titration method: The purpose is to accurately measure steel The full iron content in the slag ensures the quality and stability of the steel slag, promotes the application of steel slag in steel, building materials, roads and other industries, and improves the smelting The utilization of gold slag promotes the reuse of secondary resources:

- GB/T 38216:5 Determination of manganese oxide content in steel slag by flame atomic absorption spectrometry: The purpose is to standardize the oxygen content in steel slag The determination of manganese oxide and the manganese oxide content in steel slag play an important role in the performance evaluation and post-processing utilization of steel slag:

Determination of free calcium oxide content in steel slag EDTA titration and thermogravimetric analysis Warning: Personnel using this document should have formal laboratory work experience: This document does not identify all possible security issues: make Users are responsible for taking appropriate safety and health measures and ensuring compliance with the conditions stipulated in relevant national regulations:

1 Scope

This document describes the principles, reagents and materials, instruments and equipment, sampling and sample preparation, analysis steps for the determination of free calcium oxide content in steel slag: Precision and test reports:

This document is applicable to the determination of free calcium oxide content in steel slag: Free calcium oxide content (mass fraction) measurement range: 0:01%~ 20:00%:

2 Normative reference documents

GB/T 2007

GB/T 2007

GB/T 6379

GB/T 6379

GB/T 6682

GB/T 8170

GB/T 12805

GB/T 12806

GB/T 12807

GB/T 12808

3 Terms and definitions

There are no terms or definitions to be defined in this document:

4 Principles

The total amount of free calcium oxide and calcium hydroxide in steel slag was determined by chemical analysis, and the calcium hydroxide content was determined by thermogravimetry:

The difference is the content of free calcium oxide in the steel slag: The chemical analysis method uses ethylene glycol-EDTA chemical titration method, and thermogravimetric analysis method is used to measure hydrogen: