YS

NONFERROUS MEAL INDUSTRY STANDARD

OF THE PEOPLE'S REPUBLIC OF CHINA

ICS 71.040.40

CCS H 30

YS/T 575.22-2021

Replacing YS/T 575.22-2007

Methods for chemical analysis of bauxite - Part 22: Determination of hydroscopic moisture - Gravimetric method

铝土矿石化学分析方法 第 22 部分：湿存水含量的测定 重量法

Issued on: March 05, 2021 **Implemented on: July 01, 2021**

Issued by: Ministry of Industry and Information Technology

Table of Contents

Foreword

This document was drafted in accordance with the provisions of GB/T 1.1-2020 "Directives for standardization - Part 1: Rules for the structure and drafting of standardizing documents".

This document is Part 22 of YS/T 575 "Methods for chemical analysis of bauxite". YS/T 575 has published the following parts:

- Part 1: Determination of aluminium oxide content EDTA titrimetric method;
- Part 2: Determination of silicon dioxide content - Gravimetric-molybdenum blue photometric method;
- Part 3: Determination of silicon dioxide content molybdenum blue photometric method;
- Part 4: Determination of iron oxide content - Dichromate titrimetric method;
- Part 5: Determination of iron oxide content - Orthophenanthroline photometric method;
- Part 6: Determination of titanium dioxide content - Diantipyrylmethane photometric method;
- Part 7: Determination of calcium oxide content - Flame atomic absorption spectrophotometric method;
- Part 8: Determination of magnesium oxide content - Flame atomic absorption spectrophotometric method;
- Part 9: Determination of potassium oxide and sodium oxide content - Flame atomic absorption spectrophotometric method;
- Part 10: Determination of manganese oxide content - Flame atomic absorption spectrophotometric method;
- Part 11: Determination of chromium oxide content - Flame atomic absorption spectrophotometric method;
- Part 12: Determination of vanadium pentoxide content - N-benzoy-N-phenylhydroxylamine photometric method;
- Part 13: Determination of zinc content flame - Atomic absorption spectrophotometric method;
- Part 14: Determination the total content of rare earth oxide - Tribromo-arsenazo

Methods for chemical analysis of bauxite - Part 22: Determination of hydroscopic moisture - Gravimetric method

1 Scope

This document specifies the method for determining the air-equilibrium hygroscopic moisture content in bauxite.

This document is applicable to the determination of the hygroscopic moisture content of air-equilibrium hygroscopic moisture in the calibration loss on ignition or sample weighing operation of powdered bauxite ores, such as bauxite ore and concentrate, which has a determination range of ≤ 5.00%.

This document is not applicable to the hygroscopic moisture trade settlement process of powdered bauxite ores.

2 Normative references

The contents of the following documents constitute essential clauses of this document through normative references in the text. Among them, for dated references, only the version corresponding to the date applies to this document; for undated references, the latest version (including all amendments) applies to this document.

GB/T 8170 Rules of rounding off for numerical values and expression and judgement of limiting values

YS/T 575.20 Methods for chemical analysis of bauxite ores - Part 20: Preparation of pre-dried samples

3 Terms and definitions

There are no terms and definitions that need to be defined in this document.

4 Principle

The specimen that has been left to stand in the air (so that the water content in the specimen reaches equilibrium with the water content in the air) is placed in a 110 °C ±

5 °C oven and dried, until the mass remains constant. The mass loss before and after drying is the air-equilibrium moisture content.

5 Instruments

5.1 Plate: Flat bottom, the bottom area of which shall be greater than 100 cm^2.

5.2 Dryer: Contains activated alumina (heated at 300 °C ± 10 °C for 5 h before use) or color-changing silica gel (heated at 120 °C ± 5 °C for 4 h before use).

5.3 Oven: The temperature can be controlled at 110 °C ± 5 °C; air flow is guaranteed in the oven.

5.4 Analytical balance: The actual graduation value is 0.0001 g.

5.5 Weighing bottle: It has a lid, which is large enough to hold the required specimen amount.

6 Specimen

The sample is ground to pass through a 150 μm standard sieve.

7 Test steps

7.1 Test material

Take about 10 g of the specimen (6). Place it on a plate (5.1). Spread it evenly and let it stand in the air in the laboratory for not less than 2 h.

7.2 Parallel test

Perform two tests in parallel and take the average value.

7.3 Determination

7.3.1 Place the weighing bottle (5.5) in an oven (5.3) at 110 °C ± 5 °C for 1 h. Take it out and place it in a desiccator (5.2) to cool to room temperature. Gently open the lid and quickly cover it. Weigh it, to an accuracy of 0.0002 g. Record the mass (m_0).

7.3.2 Use an analytical balance (5.4) to weigh 2.0 g ± 0.1 g of the pre-air-equilibrium sample (7.1). Place it in a weighing bottle (7.3.1), that has been dried and weighed to a constant weight. Record the mass (m_1).

7.3.3 Place the opened weighing bottle together with the lid in an oven (5.3). Dry at 110 °C ± 5 °C for 1 h. Take it out. Cover the weighing bottle. Place it in a dryer (5.2) to

This is an excerpt of the PDF (Some pages are marked off intentionally)

------ The End ------