

ICS 73.060.10

CCS D 31



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

GB/T 6730.49-2017

**Iron ores -- Determination of potassium content -- Flame atomic
absorption spectrometric method**

Issued on: October 14, 2017

Implemented on: July 1, 2018

**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine of the People's Republic of China, Standardization
Administration of the People's Republic of China**

Table of Contents

- Foreword
- 1 Scope
- 2 Normative references
- 3 principle
- 4 Reagents and materials

Foreword

GB/T 6730 "iron ore" is divided into dozens of sections.

This section GB/T 6730 Part 49.

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

This Part replaces GB/T 6730.49-1986 "iron ore chemical analysis method of atomic absorption spectrophotometric determination of sodium and potassium"

Determination of potassium content, this part of GB/T 6370.49-1986 comparison, with some editorial changes, the main technical changes are as follows.

- Remove the original standard on the determination of sodium content;
- Added "warning" "1 Scope" and "2 normative references";
- Determination of potassium content (mass fraction) from 0.005% to 1.50% to 0.0025% to 1.50%;
- The concentration of potassium calibration solution was revised to 0.040mg/mL, while modifying the calibration curve calibration range;
- The standard residue processing operation to increase hydrochloric acid digestion processing steps;
- Modify the formula of potassium content;
- Modify the "allowable difference" to "precision";
- Modify the analysis of value acceptance C-value formula.

This section uses the redrafted law to amend the use of ISO 13312.2017 "Determination of iron ore potassium flame atomic absorption spectrometry," Ben

Partially compared to ISO 13312.2017, there are structural changes, including.

- Removed the "Terms and definitions" chapter;
- Adjust the "instrument" a chapter of the order of the order;
- Will dispense the test solution when the need to add the amount of liquid directly listed in Table 1.

This section compared with ISO 13312.2017, the main technical changes are as follows.

- Determination of potassium content from "0.0025% ~ 0.52%" to "0.0025% ~ 1.50%" to expand the application of the method

range;

- On the normative references, this section made a technical difference with the adjustment to adapt to China's technical conditions, adjust the situation

Concentration reflected in the second chapter "Normative references", the specific adjustments are as follows.

- * Increased reference to GB/T 6379.1, GB/T 6379.2, GB/T 7728, GB/T 8170, GB/T 12807, GB/T 12808;
- * Removed ISO 648, ISO 11323;
- * GB/T 6682 modified to use international standards instead of ISO 3696;
- * Equivalent to the international standard GB/T 6730.1 instead of ISO 7764;
- * Equivalent to the use of international standards GB/T 6730.3 instead of ISO 2596;
- * Equivalent to the international standard GB/T 10322.1 instead of ISO 3082;
- * ISO 1042 is replaced by GB/T 12806, which is not equivalent to international standards.

- Reagents and materials were added "mixed solvent" and "perchloric acid" and ISO 13312.2017 of the "5.5 potassium standard solution" to modify

For this part of the "4.7 potassium standard stock solution" and "4.8 potassium standard solution", the potassium calibration solution concentration was changed to 0.040mg/mL,

At the same time, the calibration curve has been modified to facilitate the actual operation.

- Removed the alarm in 6.7 of ISO 13312.2017, added warning in chapter "Sampling and sample preparation";
- Modify the test solution in Table 1 potassium ion mass fraction range, easier to practice;
- Removed the general principles of "determination" in the chapter on analytical procedures in order to comply with the actual situation in our country;
- Analysis step increased residue processing, so that the sample is more complete;

- Modify the precision of representation, in line with China's actual situation;
- Modify the analytical value of the acceptance C value formula to meet the actual situation in our country;
- Modify the calculation of the final result, in line with the actual situation in our country;
- Modify the test report in the "sample name and results" to meet the actual situation in our country.

This standard also carried out the following editorial changes.

- Modify the standard name;
- Removed the notes in 6.7 atomic absorption spectrometer of ISO 13312.2017 and Note 2 in Appendix B;
- Removed the international standard information appendix C.

This part is proposed by China Iron and Steel Association.

This part of the National Iron Ore and Direct Reduced Iron Standardization Technical Committee (SAC/TC317) centralized.

This section drafted by. Beijing Shougang Jingtang Iron and Steel Co., Ltd. joint.

1 Scope

GB/T 6730 provisions of this part of the flame atomic absorption spectrometry potassium content.

This section applies to iron ore, iron ore, sinter and pellets Determination of potassium content. Determination of the range (mass fraction) .0.0025% ~ 1.50%.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version applies to this article

Pieces. For undated references, the latest edition (including all amendments) applies to this document.

GB/T 6379.1 accuracy and accuracy of measurement methods (accuracy and precision) Part 1. General and definitions

GB/T 6379.2 accuracy of measurement methods and results (accuracy and precision) Part 2. Determination of standard measurement methods repeated

The basic method of sexuality and reproducibility

GB/T 6682 analytical laboratory water specifications and test methods (GB/T 6682-2008, ISO 3696.1987, MOD)

GB/T 6730.1 Preparation of pre-dried samples for iron ore analysis (GB/T 6730.1-2016, ISO 7764.2006, MOD)

GB/T 6730.3 Determination of iron ore gravimetric method to absorb moisture in the sample (GB/T 6730.3-1986, ISO 2596.1984,

IDT)

GB/T 7728 chemical analysis of chemical products - General rules of flame atomic absorption spectrometry

GB/T 8170 rounded repair rules and limit values of the representation and judgment

GB/T 10322.1 Iron ore sampling and sample preparation methods (GB/T 10322.1-2014, ISO 3082.2009, IDT)

GB/T 12806 laboratory glassware single standard line volumetric flask (GB/T 12806-2011, ISO 1042.1998, NEQ)

GB/T 12807 Laboratory glassware graduated pipette

GB/T 12808 laboratory glassware single standard pipette

3 principle

Method 1 and Method 2 The sample is decomposed with hydrochloric acid and hydrofluoric acid, evaporated to near dryness, again dropping the appropriate amount of hydrochloric acid moistened residue, heated to dry;

Method 3 The sample is decomposed with hydrochloric acid, hydrofluoric acid and perchloric acid and evaporated to near dryness. Dissolved residue with hydrochloric acid, dilute the solution. Atomic absorption of light

Spectrometer, the test solution into the air - acetylene flame, measured at a wavelength of 766.5nm at potassium absorbance. Calculate the mass of potassium on the calibration curve

Scores.

4 Reagents and materials

Unless otherwise indicated in the analysis, only the use of approved analytical grade reagents and secondary water GB/T 6682 regulations or with its purity