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Iron ores - Determination of loss on ignition -

Gravimetric method

铁矿石 灼烧减量的测定 重量法

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Iron ores - Determination of loss on ignition - Gravimetric method

WARNING - Persons using this Part of GB/T 6730 shall have experience in formal laboratory work. This Part does not address all security issues. It is the user's responsibility to take appropriate safety and health measures and to ensure compliance with the conditions stipulated by relevant national regulations.

1 Scope

This Part of GB/T 6730 specifies determination of loss on ignition (LOI) in iron ore by gravimetric method.

This Part is applicable to determination of ignition loss in natural iron ore, iron concentrate and sinter. The determination range (mass fraction): - 10.0%~12.0%.

This Part does not apply to processed minerals containing metallic iron, natural or processed minerals with a sulfur content greater than 0.2% (mass fraction).

2 Normative references

The following referenced documents are indispensable for the application of this part of GB/T 6730. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

GB/T 6379.2, *Measurement methods and results - Accuracy (trueness and precision) - Part 2: Determine the standard methods of measurement repeatability and reproducibility of the basic method* (GB/T 6379.2-2004, ISO 5725-2:1994, IDT)

GB/T 6730.1, *Iron ores - Preparation of pre-dried test samples for chemical analysis* (GB/T 6730.1-1986, idt ISO 7764:1985)

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

GB/T 10322.1, *Iron ores - Sampling and sample preparation procedures* (GB/T 10322.1-2000, idt ISO 3082:1998)

GB/T 20565, *Iron ores and direct reduced iron - Vocabulary* (GB/T 20565-2006, ISO 11323:2002, IDT)

3 Terms and definitions

The terms and definitions defined in GB/T 20565 apply to this Part.

4 Principle

The test material is ignited to constant weight at $1000^{\circ}\text{C}\pm 25^{\circ}\text{C}$. Calculate the ignition loss based on the mass lost.

5 Reagents and materials

Unless otherwise stated, only the confirmed analytically-pure reagents are used in the analysis.

5.1 Silica gel, dried at 105°C for 4h.

6 Equipment

Laboratory routine equipment includes:

6.1 Porcelain crucible or platinum crucible: capacity is 15mL~25mL.

6.2 Balance: the sensitivity is 0.1mg.

6.3 High temperature furnace: the maximum operating temperature is not less than 1100°C , and can automatically control the temperature.

7 Sampling and sample preparation

7.1 Laboratory sample

Samples for analysis shall be sampled and prepared according to GB/T 10322.1. Generally, the particle size of the specimen shall be less than $100\mu\text{m}$. If the specimen has obvious burn loss (more than 2.0%), its particle size shall be less than $160\mu\text{m}$.

7.2 Preparation of pre-dried specimens

Mix the laboratory samples well. Use the increment method to sample. According to the provisions of GB/T 6730.1, the sample is dried at a temperature of $105^{\circ}\text{C}\pm 2^{\circ}\text{C}$.

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