



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

GB/T 2007.6-1987

**General rules for the sampling and sample preparation of
minerals in bulk - Determination of moisture content - Heat
drying method**

(English Translation)

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1 Scope of application

This standard applies to the determination of moisture content of ore described in GB

2007.1. However, it does not apply to some easily oxidized sulfide ore.

2 Normative references

GB 2007.1 General rules for the sampling and sample preparation of minerals in bulk-Sampling by manual method

GB 2007.2 General rules for the sampling and sample preparation of minerals in bulk-Manual method of sample preparation

3 Instruments

3.1

Drying plate

Stainless metal plate of which the surface is smooth and clean. It can accommodate a specified number of samples of which the thickness of sample layer does not exceed 31.5mm.

3.2

Drying oven

Air-blowing device that has adjustable temperature control device with temperature error of less than $\pm 5^{\circ}\text{C}$, and can make air flow inside the drying oven without blowing away the samples.

3.3

Balance

Maximum weighing is not less than 3 000g. Sensitivity is 0.1g.

4 Sample

Take samples and prepare samples in accordance with relevant standards. For samples that are too wet or sticky and thus hard to sift or crush or divide, samples can be pre-dried until sample preparation is not difficult (see Annex A). Minimum mass of required aqueous sample is shown in Table 1.

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6.1 Calculation of sample moisture

Moisture content W_1 (%) of each aqueous content is calculated according to Formula (1).

It is reported to the second decimal:

100

12

32

mm mm

W_1 (1)

Where, m_1 - Mass of drying place, g;

m_2 - Mass of sample and plate before drying, g;

m_3 - Mass of sample and plate after drying, g.

6.2 Calculation of moisture content of one lot of ore

6.2.1

When moisture content of aqueous sample from bulk sample is determined, mean value W of moisture contents of whole lot of ore is calculated according to Formula (2);

it is reported to the first decimal;

21

WW

(2)

Where,

W1, W2 - Respectively referring to moisture determination results of two aqueous samples, expressed in mass percentage.

6.2.2

When moisture content of duplicate sample is determined, calculate according to Formula (3). Moisture content of duplicate sample is calculated to the first decimal; moisture content W (%) of whole lot is reported to the first decimal:

$$W = \frac{\sum_{i=1}^K W_i}{K}$$

WN

(3)

Where,

K - Number of duplicate samples;

Ni - Number of increments in i-th duplicate sample.

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Annex A

Determination of Moisture Content of Sticky and Wet Ore (Supplement)

When it is difficult to crush and divide the sample because the sample is too wet or sticky, sample shall be pre-dried. In this case, determine the moisture content of whole lot of ore according to the method specified in A1 to A3; and then calculate total moisture content according to clause A4 to clause A7.

A1 Mass of sample weighed is accurate to 0.05% of sample mass.

A2 Pave the sample and place it into drying apparatus that is set to a specified temperature or in air; dry to approximate equilibrium between ore moisture and air humidity; do not lose fine powder during the drying process.

A3 After pre-drying of ore, weigh sample's mass again; calculate pre-drying moisture content W p (%) of sample according to Formula (A1).

$$W_p = \frac{m_1 - m_2}{m_1} \times 100$$

21

m mm

W p

(A.1)

Where, m 1 - Mass of sample before pre-drying, kg;

m 2 - Mass of sample after pre-drying, kg.

A4 Prepare samples for determination of heat drying moisture from pre-dried samples in accordance with relevant standard.

A5 Determine loss on drying of sample according to clause 5.2; and calculate moisture content W_d (%) of sample after pre-drying according to Formula 6.1.

A6 Calculate total moisture content W_{pd} (%) of sample according to Formula (A2).

$$d p p p d$$

$$W W \times$$

$$+$$

$$100$$

$$100$$

$$(A.2)$$

Where,

W_d - Moisture content of sample after pre-drying, %.

A7 Calculate moisture content (%) of the whole lot according to clause 6.2.

GB 2007.6-1987 calculated to the second decimal;

M3 - Mass of sprayed water, t;

M4 - Mass of whole lot of ore that contain sprayed water;

F - Correction coefficient of loss water during spraying; F value is decided by the buyer and the seller through negotiation.

B1.5 The calculation method of moisture content when aqueous sample is taken during ship loading process before water spraying.

Moisture content W_s (%) of a lot of ore to correct spray is calculated according to Formula (B2). The result is accurate to the first decimal:

$$W W W \times +$$

$$)100((B.2)$$

Where,

W - Mean value of moisture contents (%) of aqueous samples taken before spraying, calculated to the second decimal.

Meanings of M3, M4 and F are the same as those in Formula (B1).