ICS 73.080
CCS Q 69

JC

Industrial Standard of the People's Republic of China

JC/T 859-2020

Replace JC/T 859-2000

Feldspar

长石

(English Translation)

Issue date: 2020-12-09 Implementation date: 2021-04-01

Issued by Ministry of Industry and Information Technology of the People's Republic of China

工业和信息化部标准报批公示

工业和信息化部标准报批公示
工业和信息化部标准报批公示
工业和信息化部标准报批公示
工业和信息化部标准报批公示
工业和信息化部标准报批公示
工业和信息化部标准报批公示

Foreword

SAC/TC 406 is in charge of this English translation. In case of any doubt about the contents of English translation, the Chinese original shall be considered authoritative.

This document is drafted in accordance with the rules given in the GB/T 1.1-2020 (*Directives for standardizing documents*).

This document replaces the JC/T 859-2000 (*Feldspar*) in whole, the following technical deviations have been made with respect to the JC/T 859-2000 (*Feldspar*):

a) Modify "GB/T 6003-1995 (*Test sieves*)" to "GB/T 6003.1 (*Test sieves — Technical requirements and testing—Part 1:Test sieves of metal wire cloth*)"; Modify "GB/T 3404-1992 (*Methods for chemical analysis of glass making sands*)" to "JC/T 873 (*Methods of chemical analysis of feldspar*)"; Modify "GB/T 8946-1988 (*Plastic woven sack*), GB/T 8947-1988 (*Composite plastic woven sack*)" to "GB/T 8946 (*General technical requirements of plastic woven sack*)" (see Chapter 2 of this document, Chapter 2 of 2000 edition);

b) Delete the contents about product grades (2000 edition 3.3);

c) Delete the contents about product marking (2000 edition 3.4);

d) In the chemical composition requirements of potash feldspar, delete the high-grade products, first-class products and their respective indexes. All indexes are determined according to the requirements of qualified products in the original standard; Add the index of the aluminum oxide to be "≥ 14.00%"(see Table 1 of this document, Table 1 of 2000 edition);

e) In the chemical composition requirements of albite, delete the high-grade products, first-class products and their respective indexes. All indexes are determined according to the requirements of qualified products in the original standard; (see Table 2 of this document, Table 2 of 2000 edition);

f) Add the determination of particle size of powder(see 6.3 of this document);

g) Add the type inspection (see 7.1.2 of this document);

h) Delete the requirements of factory certificate (see 6.2 of 2000 edition);

i) Modify "products of the same type, same specification and same grade" to "products of the same type and same specification produced under the same process conditions (see 7.2 of this document, 6.3 of 2000 edition);

j) Modify "When all the indexes in the test results meet the corresponding level of the technical requirements, the batch of products shall be judged as qualified" to "When the

inspection results of this batch of products all meet the requirements of the document, the batch of products will be judged as qualified" (see 7.4 of this document, 6.5 of 2000 edition);

k) Delete the "brand" (see 7.1 of 2000 edition);

l) Add the "product classification and specification" (see 8.1 of this document);

m) Modify "The packaging bag shall be plastic woven bag conforming to the GB/T 8946 or composite plastic woven bag conforming to the GB/T 8947" to "The packaging bag shall be plastic woven bag conforming to the GB/T 8946" (see 8.2 of this document, 7.2 of 2000 edition).

Attention is drawn to the possibility that some contents of this document may involve the patent rights. The publisher of this document shall not be held responsible for identifying any or all such patent rights.

This document was proposed by China Building Materials Federation.

This document was prepared by SAC/TC 406 (National Technical Committee 406 on Nonmetallic Mineral Products of Standardization Administration of China).

The previous edition of this document is:

——JC/T 859-2000.

工业和信息化部标准报批公示

Feldspar

1 Scope

This document specifies the classification, requirements, test methods, inspection rules, marking, packaging, transport and storage of feldspar.

This document is applicable to raw ore block and the powder made by mechanical processing of potash feldspar and albite.

2 Normative references

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

GB/T 6003.1 *Test sieves - Technical requirements and testing - Part 1:Test sieves of metal wire cloth*

GB/T 8946 *General technical requirements of plastic woven sack*

GB/T 10454 *Flexible freight container*

GB/T 15341 *Talc lumps*

JC/T 873 *Methods of chemical analysis of feldspar*

3 Terms and definitions

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

4 Classification

4.1 Classification

Feldspar products can be classified into potash feldspar and albite according to the content of potash oxide and sodium oxide.

4.2 Specifications

According to the particle size, the feldspar products can be classified into seven kinds: 45 μm, 75 μm, 125 μm, 150 μm, 180 μm, 250 μm powder grades and 20 mm～400 mm raw ore block.

5 Requirement

5.1 Appearance quality

The color of block feldspar products is white or pink, without sediment and other debris; the color of powdery feldspar products is white or pink.

5.2 Particle size

The sieving unpassed ratio of all specifications powder is no more than 5%.

5.3 Chemical composition

The chemical composition of feldspar products shall comply with the requirements given in Table 1 and Table 2.

Table 1 The requirements of the chemical composition of potash feldspar

Item	Requirement
(K_2O+Na_2O) /%	≥10.50
K_2O/%	≥8.00
(Fe_2O_3+TiO_2) /%	≤0.25
TiO_2/%	≤0.10
Al_2O_3/%	≥14.00
Note: The other requirements shall be agreed upon between the supplier and the customer.	

Table 2 The requirements of the chemical composition of albite

Item	Requirement
Na_2O/%	≥8.00
Fe_2O_3/%	≤0.30
Note: The other requirements shall be agreed upon between the supplier and the customer.	

6 Test Method

6.1 Appearance

Visual inspection under natural light conditions.

6.2 Determination of the particle size of block feldspar products

Use a steel ruler with an accuracy of 1 mm to measure the maximum size of the block feldspar products and record the result.

6.3 Determination of the particle size of powder feldspar products

6.3.1 Apparatus

6.3.1.1 Test sieves: with a 200 mm diameter, shall comply with the requirements given in the GB/T 6003.1.

6.3.1.2 Oscillator: the shocking frequency is 147 times/min.

6.3.1.3 Analytical balance sensitivity: ≤ 0.000 1 g.

6.3.1.4 Industrial balance sensitivity: ≤ 0.01 g.

6.3.1.5 Oven: the temperature range is 0 ℃～300 ℃, and the temperature controller sensitivity is ±1 ℃.

6.3.1.6 Electric stove: adjustable temperature electric stove with asbestos net.

6.3.1.7 Water pressure control device: the pressure range is 0.02 MPa～0.03 MPa.

6.3.1.8 Beakers: 400 mL, 150 mL.

6.3.1.9 Desiccator: with color-changing silica gel inside.

6.3.2 Wet sieving (for feldspar products with particle size less than 75 μm)

6.3.2.1 Transfer about 20 g of dried samples (accurate to 0.01 g) into a 400 mL beaker. Add a suitable amount of ethanol or distilled water into the beaker and keep stirring with a glass rod until the samples becomes wet and well dispersed.

6.3.2.2 Pour the dispersed samples into the test sieves, rinse the beaker and glass rod several times with distilled water, and pour the rinse water into the sieve each time.

6.3.2.3 Hold the sieve frame with both hands, immerse the test sieve into a basin filled with water. Keep the water surface 1.0 cm～1.5 cm above the sieve. Shake the test sieve gently, and carefully wash for 1 min～2 min until most of the samples pass through the test sieve.

6.3.2.4 Use low-pressure water with a pressure of 0.02 MPa～0.03 MPa to rinse the sample on the sieve surface carefully (keep the test solution from spilling out of the sieve), until the water passing through the sieve is clear, that is the end point of the test. The whole rinsing time is about 10 min.

6.3.2.5 Transfer all materials not passing through the sieve into a beaker of known mass with distilled water. Put the beaker on the electric stove and evaporate the contents to dryness at a low temperature.

6.3.2.6 Put the beaker in an oven and bake it at 105 ℃～110 ℃ for 0.5 h～1 h, then transfer the sample from the oven to a desiccator. When it is cooled down to the room temperature, weight the sample (accurate to 0.000 1 g).

6.3.2.7 The sieving unpassed ratio can be calculated according to the formula (1):

$$X_1 = \frac{m_1 - m_2}{m} \quad \cdots\cdots(1)$$

where

X_1 is the sieving unpassed ratio, (%);

m_1 is the mass of the beaker and the sieving unpassed, (g);

m_2 is the mass of the beaker, (g);

m is the mass of the sample, (g).

Take the arithmetic mean of two parallel measurement results, then get the measurement results, and the relative deviation of the two parallel measurements should not be more than 0.30%. Otherwise, the sample should be weighed again and measured again.

6.3.3 Dry sieving (for feldspar products with particle size not less than 75 μm)

6.3.3.1 Transfer about 20 g of dried samples (accurate to 0.01 g) into the test sieve with a sieve bottom, and then shake the sample gently to spread samples evenly on the bottom of the sieve. Lid the bottle, then put the test sieve on the oscillator and fix it firmly.

6.3.3.2 Press the start buttons of the oscillator and the stopwatch at the same time.

6.3.3.3 Turn the oscillator off after sieving for 5 min.

Note: If the hand sieve and the oscillator sieve can achieve the same effect, the use of oscillator sieve can be avoided and use the hand sieve only.

6.3.3.4 Remove the standard sieve (including the sieve lid and the sieve bottom) and pour out the samples in the sieve bottom. Then brush the samples from the sieve lid and sieve frame to the sieve with a little brush (no shedding) and hand sieve for 15 s as well as pat for about 20 times. Transfer all materials not passing through the sieve to a watch glass of known mass and weigh the sample (accurate to 0.000 1 g).

6.3.3.5 The sieving unpassed ratio can be calculated according to the formula (2):

$$X_2 = \frac{m_3 - m_4}{m} \quad \cdots\cdots(2)$$

where

X_2 is the sieving unpassed ratio, (%);

m_3 is the mass of the watch glass and the sieving unpassed, (g);

m_4 is the mass of the watch glass, (g);

m is the mass of the sample, (g).

Take the arithmetic mean of two parallel measurement results, then get the measurement results, and the relative deviation of the two parallel measurements is not more than 0.40%. Otherwise, weigh and measure the sample again.

6.4 Chemical composition

Determination of chemical composition shall be in accordance with the JC/T 873.

7 Inspection rules

7.1 Inspection classification

7.1.1 Factory inspection

The factory inspection items of potash feldspar: include appearance quality, particle size, and potash oxide content. The factory inspection items of albite:

include appearance quality, particle size and sodium oxide content.

7.1.2 Type inspection

Type inspection items include all requirements of Chapter 5. Type inspection shall be performed in case any of the following situations occurs:

a) The new product is formally set and type production begins;

b) Every 6 months for type production;

c) The significant changes such as raw materials or production processes that may affect the properties of products;

d) The results of a factory inspection are significantly different from the results of previous type inspection;

e) Production resumes after more than 3 months suspension.

7.2 Batching

For the feldspar products of the same type and specification produced under the same process and production conditions, 120 t or less of such products are considered as a batch.

7.3 Sampling

Random sampling method is adopted for the product sampling, and the number of sampling bags is not less than 5% of the total number of bags. When sampling, use a sampling drill (or sampling tube) to vertically insert from the bag mouth into half way of the bag to take samples. The sample size is not less than 40 g for each sampling, and the total sample size for each batch is not less than 3 kg. Mix the sample well and reduce it to 500 g by quartering method.

The block products sampling shall be done in accordance with the GB/T 15341.

7.4 Judgment rules

When any indicator fails to meet the requirements of this standard, a retest shall be done using twice the sample size from the same batch of product. Results of the retest serve as the criterion for qualifying or unqualifying the batch.

8 Marking, packaging, transport and storage

8.1 Marking

The marking of product is directly printed on the packaging bag, including:

a) Product name;

b) Product type and specification;

c) Batch number;

d) The full name, address, and phone number of the manufacturer.

8.2 Packaging

Plastic woven bags conforming to the GB/T 8946 are adopted. The net weight of each bag is 50 kg and the deviation is ±0.3 kg. The total weight of each 20 bags should not be less than 1000 kg.

Container bags conforming to the GB/T 10454 are adopted for block products. The net weight of each bag is 1000 kg with deviation of ±2 kg. The total weight of each 50 bags should not be less than 50 t.

Note: The other requirements shall be agreed upon between the supplier and the buyer.

8.3 Transport

During transportation, it is necessary to strictly prevent the mixing of foreign materials, and protect the bags from rain, sun and breakage.

8.4 Storage

The storage site should be kept clean, hygienic, ventilated, dry and strictly protected from moisture.

工业和信息化部标准报批公示