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Nonferrous Metals Industry Standard of the People's Republic of China

YS/T 261—2011
Replacing YS/T 261—1994

Spodumene Concentrate

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Nonferrous Metals Industry Standard of the People's Republic of China

Spodumene Concentrate

YS/T 261—2011

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Foreword

This Standard replaces *Spodumene Concentrate* (YS/T 261—1994).

Compared with YS/T 261—1994, the main changes of this Standard are as follows:

—— Grade and chemical composition of spodumene concentrate are adjusted;

—— Granularity requirements of spodumene concentrate are adjusted.

This Standard is proposed by and shall be under the jurisdiction of National Standardization Technical Committee of Nonferrous Metals.

This Standard was drafted by Sichuan Tianqi Lithium Industries Inc.

The main drafters of this Standard: Yao Kailin, Jin Peng, Huo Liming, Tu Mingjiang, Zeng Yiwei and Liang Pingwu.

The historical version replaced by this Standard is as follows:

—— YS/T 261—1994.

Spodumene Concentrate

1 Scope

This Standard specifies the requirements, testing method, inspecting rules, marking, packaging, transportation, storage and quality certificate as well as content of contract (or purchasing order) for spodumene concentrate.

This Standard is applicable to spodumene concentrate obtained using various beneficiation methods. This spodumene concentrate is widely used in glass ceramic industry and producing various chemical products of lithium.

2 Normative Reference

The following documents are indispensable for the application of this document. For the dated documents so quoted, only the dated versions apply to this document. For the undated documents so quoted, the latest versions (including all modification sheets) apply to this document.

YS/T509.1 Methods for Chemical Analysis of Spodumene and Lepidolite Concentrates - Determination of Lithium Oxide, Sodium Oxide and Potassium Oxide Contents - Flame Atomic Absorption Spectometric Method

YS/T509.5 Methods for Chemical Analysis of Spodumene and Lepidolite Concentrates - Determination of Ferric Oxide Content - Phenanthroline Photometric Method and EDTA Complexiметric Method

YS/T509.6 Methods for Chemical Analysis of Spodumene and Lepidolite Concentrates - Determination of Phosphorus Pentoxide Content - The Molybdenum Blue Photometric Method

YS/T509.8 Methods for Chemical Analysis of Spodumene and Lepidolite Concentrates - Determination of Calcium Oxide and Magnesium Oxide Content - Flame Atomic Absorption Spectrometric Method

YS/T509.10 Methods for Chemical Analysis of Spodumene and Lepidolite Concentrates - Determination of Manganous Oxide Content - Persulfate Oxidation Photometric Method

3 Requirements

3.1 Product classification

The product is classified into six grades by scope of application and chemical composition.

3.2 Chemical composition

Chemical composition of the product shall be as specified in Table 1.

Table 1

Grade	Li_2O not less than /%	Impurity not more than/%					Recommended use
		Fe_2O_3	MnO	MgO	Na_2O+K_2O	P_2O_5	
Microlite-1	7.50	0.15	0.10	—	1.0	0.5	Mainly used for producing glass ceramics and glaze of high-grade ceramics
Microlite-2	7.00	0.30	0.15	—	1.5	0.5	
Ceramics	6.50	0.60	0.25	—	1.8	0.5	Mainly used for producing ceramics
Chemical-1	6.00	2.5	0.40	0.20	2.00	0.5	Mainly used for producing other chemical products of lithium
Chemical-2	5.50	2.8	0.50	0.30	3.00	0.5	
Glass	5.00	0.25	0.15	—	3.00	0.5	Mainly used for producing glass

3.3 Granularity

Granularity shall be mutually agreed by the supplier and buyer.

3.4 Water content

Water content in spodumene concentrate shall not be greater than 8%.

3.5 Appearance quality

The product shall not contain visible foreign inclusions.

4 Test Methods

4.1 Chemical composition analysis of the product shall be in accordance with YS/T 509.1, YS/T 509.5, YS/T 509.6, YS/T 509.8 and YS/T 509.10.

4.2 Granularity inspection method shall be mutually agreed by the supplier and buyer.

4.3 Water content shall be tested by weight method: place 200 g specimen into 105℃ oven to dry for 2h; then measure its weight and calculate water content.

4.4 Appearance quality of the product shall be determined by visual inspection.

5 Inspection Rules

5.1 Inspection and acceptance

5.1.1 The product shall be inspected by quality check department of the supplier who shall ensure its quality meets this Standard and contract (or purchasing order) requirements and complete quality certificate.

5.1.2 The buyer shall inspect the product received in accordance with this Standard, and in case of any discrepancy with this Standard, shall inform the supplier of such discrepancy within 1 month of receiving the product for negotiated settlement by both parties. If arbitration is needed, sampling for arbitration shall take place at the buyer's premises in the presence of both parties.

5.2 Batching

The product shall be delivered for acceptance in batches, each comprising the same grade of product; the weight of each batch for chemical use shall not exceed 3000 t; the weight of each batch for other uses shall not exceed 60 t.

5.3 Inspection item

Inspection items and sample numbers for each batch shall be as specified in Table 2.

Table 2

Inspection item	Sample numbers and location	Required clause No.	Clause No. of test method
Chemical composition	As per 5.4	3.2	4.1
Granularity		3.3	4.2
Water content		3.4	4.3
Appearance quality		3.5	4.4

5.4 Sampling and preparation

5.4.1 Each batch shall be evenly sampled by inserting a tube (plastic or stainless steel tube).

5.4.2 For bagged concentrate of the same grade, if each batch is more than 10t, 10% of the total number of bags shall be selected; if each batch is less than 10t, 20% of the total number of bags shall be selected. Open all the bags selected and insert a tube in each of them to take samples not less than 2000 g; mix the samples evenly, split them to 500 g and then into three parts and obtain 200 g for chemical analysis; the sample for chemical analysis needs to be broken to grains less than 0.074 μm.

5.4.3 For bulk concentrate, samples shall be taken in quincunx form and then prepared according

to 5.4.2.

5.5 Determination of inspection result

5.5.1 If the result of chemical composition analysis fails the inspection, then new or twice as many samples shall be taken for another test; if there is still any inspection result that fails, then this batch is determined as nonconforming.

5.5.2 If granularity inspection fails, this batch of product is determined as nonconforming.

5.5.3 If water content inspection fails, then this batch is determined as nonconforming.

5.5.4 If appearance quality inspection fails, then this batch is determined as nonconforming.

6 Packaging, Marking, Transportation, Storage and Quality Certificate

6.1 Packing, transportation and storage

The product may be packed in bags or bulk, depending on the buyer's requirement and shall be protected from rain during transport and storage.

6.2 Marking

6.2.1 If the product is packed in bags, then each bag shall indicate:

a) Supplier name;

b) Product name and grade;

c) Batch No.;

d) Trademark.

6.2.2 If the product is shipped in bulk, a form containing the items under 6.2.1 can be completed and handed over to the buyer.

6.3 Quality certificate

Each batch of product shall be accompanied by quality certificate indicating:

a) Supplier name, address, phone and fax numbers;

b) Product name and grade;

c) Batch No.;

d) Net weight and number of bags;

e) Analysis and inspection results, and stamp of the QC department;

f) Reference number of this Standard;

g) Release date.

7 Content of Contract (or Purchasing Order)

Content of Contract (or Purchasing Order) shall include:

a) Product name;

b) Grade;

c) Quantity;

d) Reference number of this Standard;

e) Other information.

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