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NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA

ICS 77.150.40

H 71

GB/T 26300-2020

Replacing GB/T 26300-2010

Nickel cobalt manganese composite hydroxide

镍钴锰三元素复合氢氧化物

Issued on: September 29, 2020

Implemented on: August 01, 2021

Issued by: State Administration for Market Regulation;

Standardization Administration of the People's Republic of China.

Table of Contents

Foreword.....	3
1 Scope	5
2 Normative references.....	5
3 Classification	6
4 Technical requirements	7
5 Test methods.....	8
6 Inspection rules	9
7 Packaging, marking, transport, storage and quality certificate	10
8 Order form (or contract).....	12
Annex A (normative) Calculation method of quantity fraction of nickel, cobalt and manganese species	13

Nickel cobalt manganese composite hydroxide

1 Scope

This Standard specifies classification, technical requirements, test methods, inspection rules, packaging, marking, transportation, storage, quality certificate and purchase order (or contract) for nickel cobalt manganese composite hydroxide.

This Standard is applicable to nickel cobalt manganese composite hydroxide. Its chemical formula is $\text{Ni}_x\text{Co}_y\text{Mn}_{1-x-y}(\text{OH})_2$ (where $x+y<1$, $x>0$ and $y>0$).

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 1479.1, *Metallic powders - Determination of apparent density - Part 1: Funnel method*

GB/T 5162, *Metallic powders - Determination of tap density*

GB/T 5314, *Powders for powder metallurgical purposes - Sampling*

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

GB/T 19077, *Particle size analysis - Laser diffraction methods*

GB/T 19587, *Determination of the specific surface area of solids by gas adsorption using the BET method*

GB/T 24533-2019, *Graphite negative electrode materials for lithium-ion battery*

JY/T 010, *General rules for analytical scanning electron microscopy*

YS/T 928.3, *Methods for chemical analysis of nickel cobalt manganese composite hydrogen oxide - Part 3: Determination of nickel, cobalt, manganese content - Inductively coupled plasma atomic emission spectrometric*

YS/T 928.4, *Methods for chemical analysis of nickel cobalt manganese composite hydrogen oxide - Part 4: Determination of iron, calcium, magnesium, copper, zinc, silicon, aluminium, sodium contents - Inductively coupled plasma atomic emission*

5.1.1 The amount fraction of nickel cobalt manganese substances: First, measure the mass fraction of nickel, cobalt, and manganese in accordance with the provisions of YS/T 928.3. Then calculate the amount fraction of nickel, cobalt, and manganese species. The calculation method shall comply with the provisions of Annex A.

5.1.2 The determination methods of nickel-cobalt-manganese content, lead and sulfate shall be negotiated by both the supplier and the buyer.

5.1.3 The determination of iron, calcium, magnesium, copper, zinc, aluminum and sodium content is carried out in accordance with the provisions of YS/T 928.4.

5.2 Physical properties

5.2.1 The measurement of bulk density shall be carried out in accordance with the provisions of GB/T 1479.1.

5.2.2 The tap density is measured in accordance with the provisions of GB/T 5162.

5.2.3 The laser particle size (D50) is measured in accordance with the provisions of GB/T 19077.

5.2.4 The specific surface area is carried out in accordance with the provisions of GB/T 19587.

5.2.5 The microscopic morphology observation of product particles is carried out in accordance with the regulations of JY/T 010.

5.3 Magnetic foreign matter

The determination of the content of magnetic foreign matter in the product is carried out according to the provisions of Annex K in GB/T 24533-2019.

5.4 Moisture content

The determination method of product moisture content shall be negotiated by both the supplier and the buyer.

5.5 Appearance quality

The appearance quality of the product is checked visually.

6 Inspection rules

6.1 Inspection and acceptance

6.1.1 The quality supervision department of the supplier is responsible for product inspection. Ensure that the product conforms to this standard or the order form (or

contract). Fill in the quality certificate.

6.1.2 The buyer can inspect the received product. If the inspection result is inconsistent with this standard or the purchase order (or contract), it can be submitted to the supplier within 15 days from the date of receipt of the product. It shall be solved by the supplier and the buyer through negotiation. If arbitration is required, the arbitration sampling shall be carried out by the buyer and both parties.

6.2 Batching

Products shall be submitted for inspection in batches. Each batch shall be composed of nickel cobalt manganese composite hydroxide of the same production cycle, the same designation, and the same specification. The weight of a single batch is not more than 10t.

6.3 Inspection items

Each batch of products shall be inspected for chemical composition, physical properties, moisture content, magnetic foreign matter and appearance quality.

6.4 Sampling and sample preparation

6.4.1 The inspection of appearance quality is carried out barrel by barrel (bag).

6.4.2 The inspection and sampling of chemical composition, physical properties, moisture content and magnetic foreign matter shall be carried out in accordance with the provisions of GB/T 5314. The sampling amount of each batch is not less than 5kg.

6.5 Judgment of test results

6.5.1 According to the rounding value comparison method stipulated in GB/T 8170, it is judged whether the inspection result conforms to this Standard.

6.5.2 If any of the chemical composition, physical properties, magnetic foreign matter or moisture content of the product does not meet the requirements of this Standard, the batch of products will be judged as rejected.

6.5.3 When the appearance quality of the product does not meet the requirements of this standard, the barrel (bag) product is judged as rejected.

7 Packaging, marking, transport, storage and quality certificate

7.1 Packaging

7.1.1 Barrels: The products are packed in paper barrels or plastic barrels lined with

aluminum-plastic bags or PE bags, sealed. The net weight of each barrel is 25kg.

7.1.2 Ton bags: The products are packed in woven bags lined with aluminum-plastic bags or PE bags, sealed. The net weight of each bag is 500kg~1000kg.

7.1.3 When the buyer has special requirements for packaging, it shall be determined through negotiation between the supplier and the buyer.

7.2 Marking

The outer packaging of the product shall be printed with trademarks and labels, which indicate:

- a) Name and address of the supplier;
- b) Product name;
- c) Batch number;
- d) Net weight;
- e) Date of manufacture;
- f) Reference to this Standard;
- g) Moisture-proof words or signs.

7.3 Transportation and storage

Products shall be stacked in a ventilated and dry place. During transportation and storage, the packaging shall be prevented from cracking and moisture agglomeration. The product has a shelf life of 1 year from the date of production.

7.4 Quality certificate

Each batch of products shall be accompanied by a quality certificate, indicating:

- a) Supplier's name, address, and contact number;
- b) Product name;
- c) Designation;
- d) Batch number, batch weight, number of pieces;
- e) Analysis of the test results and the stamp of the inspection department;
- f) Reference to this Standard;
- g) Date of manufacture.

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