

Cryptocrystalline (amorphous) graphite.

General specifications

Date of validity - 2008-07-01

1. Area of use

This standard applies to cryptocrystalline graphite of natural origin, obtained by size reduction and beneficiation of graphite ores, intended for use in the foundry and metallurgical production and other industries.

2 Normative references

Normative references to the following standards are used in this standard:

The system of labor safety standards. Fire safety. General requirements

GOST 12.1.004-91 The system of labor safety standards. Fire safety. General requirements

GOST 12.1.010-76 The system of labor safety standards. Explosion proof. General requirements

GOST 2226-88 (ISO 6590-1-83, ISO 7023-83) Paper bags. Technical specifications

GOST 6613-86 Woven wire mesh with square cells. Technical specifications

GOST 9147-80 Laboratory porcelain utensils and equipment. Technical specifications

GOST 14192-96 Marking of goods

GOST 15846-2002 Products shipped to the Far North and equated localities. Packaging, marking, transportation and storage

GOST 17022-81 Graphite. Types, marks and general technical requirements

GOST 17817-78 Graphite. Methods for selecting and preparing test samples

GOST 17818.0-90 Graphite. General requirements for analysis methods

GOST 17818.1-90 Graphite. Method for determination of moisture

GOST 17818.2-90 Graphite. Method for determining grain fineness

GOST 17818.4-90 Graphite. Method for determination of ash content

Note: When using this standard, it is advisable to check the effect of the reference standards in the public information system - at the official website of the Federal Agency for Technical Regulation and Metrology on the Internet or on the annually published information of "National Standards", which was

published as of January 1 of the current year, and the corresponding monthly published information signs published this year.

If the reference standard is replaced (amended), then use the changed standard. If the reference standard is canceled without replacement, then the part in which a reference is stated, is applied with no affect to this reference.

3 Terms and definitions

The following term is used in this standard with the appropriate definition: 3.1 graphite cryptocrystalline: Polymorphic modification of graphite of the natural origin with a disordered crystal structure.

4 Classification

Depending on the physicochemical composition and application of graphite, the following kinds in accordance with GOST 17022: GLS-1, GLS-2, GLS-3, GLS-4.

5 Technical requirements

5.1 Basic indicators

5.1.1 Graphite must be manufactured in accordance with the requirements of this standard for technical regulations approved in accordance with the established procedure. Graphite in physical and chemical properties must comply with the standards specified in Table 1.

5.1.2 Foreign material visible by naked eye is not allowed in graphite.

Indicator name	Norm for grades				Testing method
	GLS-1	GLS-2	GLS-3	GLS-4	
1. Ash content, %, not more than	13.0	17.0	22.0	25.0	GOST 17818.4
2. Balance at the mesh №, %, not more than					
70 (0,2 mm)	1	1	1	1	Point 8.4 of this Standard
230 (0,063 mm)	10	10	10	10	
3. Moisture, %, not more than	2	2	2	2	GOST 17818.1
NOTE - As agreed with the customer, it's allowed to supply the graphite with moisture content more than 2%, taking into account the dry matter content in the supplied product.					

5.2 Marking

5.2.1 Transport marking according to GOST 14192.

It is allowed to apply basic, additional and information marks to all cargo places, but not less than to four of them, for the graphite shipped by railway car loads.

It is allowed not to apply basic, additional and information marks for the graphite shipped by road and in universal containers.

5.2.2 A special mark is glued to the bags (not less than four of them), and also a special mark should be put into a soft container pocket. The mark should contain the following information:

- name of the manufacturer;
- grades of graphite and the name of the deposit;
- manufacturing dates;
- lot number;
- Net weight;
- designation of this standard.

5.3 Packing

5.3.1 Graphite is packed in four, five or six-layer paper bags of closed type of any kind in accordance with GOST 2226 or into specialized soft containers for bulk goods, produced under the technical documentation approved in the established order in agreement with the customer. The net weight of graphite in the bag should not be more than 30 kg, in containers - 500 kg.

Graphite for the regions of the Far North and equated localities should be packed in accordance with GOST 14192.

6 Safety requirements

6.1. The maximum permissible concentration of beneficiated graphite in the form of an aerosol for working zones of industrial areas in the air - 10 mg / m³ according to hygienic standards [1]. In works connected with graphite pouring, a respirator should be used to protect the respiratory system.

Graphite contamination of industrial and storage areas is not allowed, in particular, as a result of damaged packaging, in which graphite is supplied and stored.

6.2 Graphite is a combustible material. Extinguishing agent: sprayed water with a wetting agent. General requirements for fire safety and explosion safety - in accordance with GOST 12.1.004 and GOST 12.1.010.

7 Acceptance rules

7.1 Graphite is supplied by lots. The lot is considered the amount of graphite from one deposit, of one grade, issued by a single quality document, containing:

- the name of the manufacturer or its trademark;
- name and grade of the product;
- document number and document date of issue;
- test results;
- the date of shipment;

- weight of the lot;
- lot number;
- number of the car or container;
- the designation of this standard.

7.2 To check the quality of graphite, 10% of the bags of products are taken from the lot.

7.3. If at least one of the indicators in the test results do not comply with the requirements of this standard, the same lot graphite is retested for these indicators. The results of repeated tests are spread to the whole lot.

8 Methods of control (testing)

8.1 Selection and preparation of samples for testing - according to GOST 17817.

8.2 References to ash and moisture content test methods are given in 5.1.1, Table 1.

8.3 Determination of the grain fineness - according to GOST 17818.2.

8.4 Method for determining the balance at the deck with mesh No. 02 and 0063

8.4.1 General requirements for the method of analysis - in accordance with GOST 17818.0.

8.4.2. Equipment

Deck with mesh of accuracy 02 and 0063 according to GOST 6613.

The electric cabinet-dryer with a nominal heating temperature of 250 ° C.

Evaporation bowl No. 6 according to GOST 9147.

Brush soft No. 6 or 8.

8.4.3 Analyzing

Determination of the balance at the deck with mesh No. 02 and 0063 is carried out by wet screening.

Take a sample of graphite weighing 25 grams, transfer it to the evaporation bowl, pour water and mix to a homogeneous state. The suspension is transferred quantitatively to water wetted screen and washed with a water jet at a rate of 5 dm³ / min until the water passed through the screen is becomes transparent. To facilitate passage through the screen, the graphite on the screen is stirred without pressure with a soft brush. It is allowed to crush the graphite balls formed on the screen with a brush. The graphite balance at the mesh is dried at a temperature (105 ± 5) ° C to constant weight, then it's cooled and dosed on the same screen by hand until the graphite comes through a mesh. The rest of the graphite from the mesh is put on a sheet of smooth paper, by sweeping the mesh with a soft dry brush, then weigh the graphite.

8.4.4 Processing Results

The mass fraction of the graphite balance on a separate screen X,%, is calculated by the formula

$$X = (m_1 \cdot 100) / m,$$

where m_1 - is the mass of the graphite balance on the mesh, g;

m - is the mass of the graphite sample, g.

The acceptable discrepancy between the results of parallel definitions should not exceed the data shown in Table 2.

Table 2

Mass of graphite balance	Qty of parallel definitions	Acceptable discrepancy
Less than 1	3	0,05
1-10 (including)	2	0,3
More than 10	1	0,5

9 Transportation and storage

9.1 Graphite is shipped by transport of all types in covered vehicles in accordance with the rules for the goods carriage operating to transport of this type.

Transportation of graphite, packed in soft specialized containers, by railroad should be carried out by shipments on an open rolling stock in a straight railway service.

9.2 Graphite packed in bags must be stored in closed storage areas, packed in soft specialized containers in accordance with the instruction for their operation.

10 Manufacturer's warranties

The useable shelf life of graphite is unlimited, if it's stored under normal conditions in closed storage room.