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NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA

ICS 27.010

CCS F 01

GB 29995-2024

Replacing GB 29994-2013, GB 29995-2013, GB 29996-2013

**Norm of energy consumption per unit production of coal-
based activated carbon and semi-coke**
煤基活性炭和兰炭单位产品能源消耗限额

Issued on: April 29, 2024

Implemented on: May 1, 2025

**Issued by: State Administration for Market Regulation;
Standardization Administration of PRC.**

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Norm of energy consumption per unit production of coal-based activated carbon and semi-coke

1 Scope

This document specifies the allowance levels, technical requirements, statistical scope and calculation method for energy source consumption (hereinafter referred to as energy consumption) per unit production of coal-based activated carbon and semi-coke.

This document is applicable to the calculation and assessment of energy consumption per unit production of coal-based activated carbon and semi-coke production enterprises, as well as the energy consumption control of new construction and renovation and expansion projects.

2 Normative references

The provisions of the following documents constitute the essential clauses of this document through normative references in this text. Among them, for referenced documents with dates, only the versions corresponding to the dates are applicable to this document; for referenced documents without dates, the latest versions (including all amendments) are applicable to this document.

GB/T 2589 General rules for calculation of the comprehensive energy consumption

GB/T 7701(all parts) Granular activated carbon from coal

GB/T 12723 General principles for establishing allowance of energy consumption per unit throughput

GB/T 25211 Classification and quality requirements of semi-coke

GB/T 30201 Granular coal-based activated carbon for desulfurization and denitration

3 Terms and definitions

The terms and definitions defined in GB/T 2589, GB/T 7701 (all parts), GB/T 12723, GB/T 25211 and GB/T 30201 and the following apply to this document.

3.1 coal-based activated carbon

A type of microcrystalline carbon material made from coal, which has a black appearance, a well-developed internal pore structure, a large specific surface area ($500\text{ m}^2/\text{g}\sim 2500\text{ m}^2/\text{g}$), and a strong adsorption capacity.

NOTE: According to product type, it can be divided into columnar activated carbon, agglomerated activated carbon, raw coal crushed activated carbon and activated coke.

3.2 activated coke

Activated carbon adsorbent with special adsorption properties for sulfur dioxide.

3.3 semi-coke

A solid carbonaceous product with low volatility, which is obtained by pyrolysis of high-volatile bituminous coal with no or weak cohesiveness under medium and low temperature conditions.

[Source: GB/T 25211-2023, 3.1]

3.4 yield of semi-coke

The ratio of qualified semi-coke products to input raw coal during the statistical period.

3.5 energy consumption per unit production of coal-based activated carbon

The various types of energy consumed by energy-consuming units in producing coal-based activated carbon are converted into the amount of energy consumed per ton of standard product.

3.6 energy consumption per unit production of semi-coke

The various types of energy consumed by energy-consuming units in producing semi-coke are converted into the amount of energy consumed per ton of semi-coke.

4 Allowance levels of energy consumption

4.1 Allowance levels of energy consumption per unit production of coal-based activated carbon

The allowance levels of energy consumption per unit production of coal-based activated carbon (the raw material energy consumption is not included in energy consumption) are shown in Table 1, where Level 1 has the lowest energy consumption. The allowance levels of energy consumption per unit production of coal-based activated carbon, with raw material energy consumption included in energy consumption, shall comply with the requirements of Appendix A.

5 Technical requirements

5.1 Energy consumption per unit production of coal-based activated carbon

5.1.1 The limit value of energy consumption per unit throughput of coal-based activated carbon for existing production enterprises shall not exceed Level 3 of the allowance levels of energy consumption in Table 1.

5.1.2 The access value of energy consumption per unit throughput of coal-based activated carbon for newly built, renovated or expanded production enterprises shall not exceed Level 2 of the allowance levels of energy consumption in Table 1.

5.2 Energy consumption per unit production of semi-coke

5.2.1 The limit value of energy consumption per unit throughput of existing semi-coke production enterprises shall not exceed Level 3 of the allowance levels of energy

consumption in Table 2.

6 Statistical scope and calculation method

6.1 Energy consumption per unit production of coal-based activated carbon

6.1.1 Energy consumption of coal-based activated carbon includes the actual consumption of various energy sources (including purchased energy-consumed medium) by the main production system, auxiliary production system, and ancillary production system, excluding energy consumed during the construction period of projects such as infrastructure construction and technological improvement, and energy exported.

6.1.2 The energy used for coal-based activated carbon raw materials (raw coal, tar, etc.) is not included in the energy consumption statistics, while the waste heat and waste energy (steam and electricity produced by waste heat boilers, etc.) recycled into the coal-based activated carbon production system shall be included in the energy consumption statistics.

6.1.3 The main production system for coal-based activated carbon includes coal preparation, briquetting, carbonization, activation, screening, and packaging, but does not include further processing such as acid and alkali washing and impregnation. Auxiliary production systems include power supply, water supply, gas supply, maintenance, lighting, warehouses, on-site raw material sites, and safety and environmental protection equipment and facilities serving the production system. Ancillary production systems refer to the production command system configured for the production system and the facilities of the functional departments and units that serve production, including offices, operating rooms, rest rooms, and facilities for raw material and finished product inspection.

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Contact: Wayne Zheng, Sales@ChineseStandard.net

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