

ICS 75.060

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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB 17820-2018

Replacing GB 17820-2012

Natural gas

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Issued on: November 19, 2018

Implemented on: June 1, 2019

**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine;
Standardization Administration of the PRC**

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- 20 Carbon dioxide mole fraction /% ≤ 3.0

Foreword

The full technical content of this standard is mandatory. This standard was drafted in accordance with the rules given in GB/T 1.1-2009. This standard replaces GB 17820-2012 "Natural Gas". The main technical changes of this standard compared with GB 17820-2012 are as follows:

---Modified the quality indicators of a class of gas and two types of gas calorific, total sulfur, hydrogen sulfide and carbon dioxide, into the natural gas of long-distance pipelines The high calorific value was changed from 31.4MJ/m³ to 34.0MJ/m³, and the total sulfur was changed from 200mg/m³ to 20mg/m³, hydrogen sulfide. Modified from 20mg/m³ to 6mg/m³ (see Table 1);

--- Removed the technical indicators of water dew point, in the "5 transport and use", increased the "pressure and temperature conditions at the natural gas junction The expression of liquid water and liquid hydrocarbons should not exist in natural gas (see 5.1);

--- Increased natural gas test methods GB/T 11060.2, GB/T 11060.5, GB/T 11060.8, GB/T 11060.10, GB/T 27894 (all parts), and the arbitration method for the total sulfur content in natural gas is changed from GB/T 11060.4 to GB/T 11060.8 (see 4.2);

--- Added normative references GB/T 30490, GB /Z 33440 and GB 50494, deleted GB 50028;

--- Added an informative appendix "Quality requirements for sulfur content in natural gas in some countries and regions in Europe and America" (see Appendix A);

--- Removed the 2012 edition of the informative Appendix A and Appendix B on hydrocarbon dew point and gas interchangeability. This standard is under the jurisdiction of the National Energy Administration. This standard was drafted. China National Petroleum Corporation Southwest Oil and Gas Field Branch Natural Gas Research Institute, China Petroleum and Chemical Industry Unit Co., Ltd. Oilfield Exploration and Development Division, China National Offshore Oil and Gas Group Co., Ltd., China National Petroleum Corporation And production branch, China National Offshore Oil Co., Ltd. crude oil and natural gas sales department, China National Petroleum Corporation Science and

Technology Development Department, China Municipal Engineering North China Design and Research Institute, Southwest Petroleum University, China Petroleum Engineering Construction Co., Ltd. Southwest Branch, China Petroleum & Chemical Corporation Development and Production Department of Puguang Branch of Zhongyuan Oilfield and China National Offshore Oil Co., Ltd. The main drafters of this standard. Huang Weihe, Tang Meng, Chang Honggang, Shi Xingchun, Qiu Jianyong, Tang Lin, Fan Zhonghai, Wu Hao, Luo Qin, Li Guangyue, Xia Fang, Wu Hongsong, Zhang Liehui, Tang Xiaoyong, Shang Jianfeng, Yu Yibing, Fu Jingqiang, Chen Yunqiang, Li Shuping, Fan Rui, Song Bin, Zhou Li, Zhou Daibing, Li Ke, Cai Li. The previous versions of the standards replaced by this standard are.

---GB 17820-1999, GB 17820-2012. natural gas

1 Scope

China's mandatory quality standard for pipeline natural gas - a very short document with a very long reach, because it is the specification that every cubic metre entering the national transmission network has to meet, and therefore the line between a producer's gas and a saleable commodity. It specifies the quality requirements, the test methods and the inspection rules for natural gas, and it applies to the processed natural gas transported by pipeline. What it controls is not the calorific value of the gas so much as what would damage the system carrying it or the people burning it. The higher heating value sets the energy the buyer is paying for. The total sulphur and the hydrogen sulphide are limited because sulphur corrodes the pipeline and the compressors and produces sulphur dioxide at the burner. The carbon dioxide is limited because it carries no energy and, with water, corrodes steel. And the water dew point is the requirement that matters most in practice: gas within the limit is dry, and gas outside it forms free water in the line, which corrodes it, and hydrates, which block it - a plug of hydrate in a transmission pipeline is days of lost supply. The standard sets the categories of gas by those parameters, refers each determination to the corresponding test method, and gives the inspection rules by which a delivery is accepted, which is what a custody transfer between a producer and a pipeline operator actually rests on. Issued on 19 November 2018 and in force since 1 June 2019, it replaces GB 17820-2012.

This standard specifies the quality requirements, test methods and inspection rules for natural gas. This standard applies to processed natural gas that is transported through pipelines.

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only dated versions apply to this article. Pieces. For undated references, the latest edition (including all amendments) applies to this document. Determination of sulfur

compounds in natural gas - Part 1. Determination of hydrogen sulfide content by iodometric method Determination of sulfur compounds in natural gas - Part 2. Determination of hydrogen sulfide content by methylene blue method Natural gas -- Determination of sulfur compounds -- Part 3 . Determination of sulphur Hydrogen content Natural gas -- Determination of sulfur content -- Part 4 . Determination of total sulfur content by oxidative microcoulometry Natural gas -- Determination of sulfur compounds -- Part 5 . Determination of total sulphur content Natural gas -- Determination of sulfur content -- Part 8 . Determination of total sulfur content by ultraviolet fluoro Natural gas -- Determination of sulfur compounds -- Part 10 . Determination of sulfur compounds by gas chromatography

GB/T 11062 Calculation method for calorific value, density, relative density and Wobbe index of natural gas

GB/T 13609 Natural Gas Sampling Guidelines

GB/T 13610 Natural Gas Composition Analysis Gas Chromatography

GB/T 27894 (all parts) Natural gas is determined by gas chromatography at a certain uncertainty

GB/T 30490 natural gas automatic sampling method General requirements for natural gas interchangeability of GB /Z 33440 into long-distance pipeline network

GB 50494 Town Gas Technical Specifications

3 Classification and quality requirements

3.1 Natural gas is classified into one type and two types according to high calorific value, total sulfur, hydrogen sulfide and carbon dioxide.

3.2 The quality requirements for natural gas should meet the requirements of Table 1.

3.3 For the quality requirements of sulfur content in natural gas in some countries and regions in Europe and America, see Appendix A. Table

1 Natural gas quality requirements Project class II High calorific value a, b/(MJ/m³) ≥ 34.0

31.4 Total sulfur (in terms of sulfur) a/(mg/m³) ≤ 20 100 Hydrogen sulfide a/(mg/m³) ≤ 6

20 Carbon dioxide mole fraction /% ≤ 3.0

4.0 a The standard reference conditions used in this standard are 101.325 kPa, 20 °C. b High calorific value is measured on a dry basis.