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

GB/T 46553-2025

**Natural gas - Analysis of composition by gas chromatography -
Rapid determination of conventional components and sulfur
compounds by integrated comprehensive analyzer**

天然气 气相色谱法分析组成 一体化综合分析仪快速测定常规组分和硫化物含
量

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part

1. Structure and Drafting Rules of Standardization Documents". Drafting. Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents. This document was proposed and is under the jurisdiction of the National Technical Committee on Standardization of Natural Gas (SAC/TC244). This document was drafted by: Natural Gas Research Institute of Southwest Oil & Gas Field Branch of China National Petroleum Corporation and National Pipeline Group Corporation. West-East Gas Pipeline Branch of China Gas Pipeline Co., Ltd., Shimadzu Enterprise Management (China) Co., Ltd., and Chemical Research Institute of China Academy of Testing Technology Institute, China Petroleum & Chemical Corporation East China Oil & Gas Branch, Sichuan Hengchen Technology Development Co., Ltd., China National Petroleum Corporation North China Oilfield Branch of the Company Limited, Guangdong Dapeng Liquefied Natural Gas Co., Ltd., Shenzhen Customs Industrial Products Testing Technology Center, Dazhou Quality and Technical Supervision Bureau Quality Supervision and Inspection Center, China Petroleum & Chemical Corporation Natural Gas Yuji Pipeline Branch, Southwest Petroleum University, Chengdu Special Technology Development Co., Ltd., and Sichuan Zhongce Standard Technology Co., Ltd. The main drafters of this document are. Zhou Li, Chen Zixun, Wang Xiaoqin, Li Xiaohong, Zeng Wenping, Shen Lin, Xie Yu, Zhang Pu, Song Chaofan, Liu Zhe, and Yao Weimin. Li Chun, Deng Fanfeng, Tian Rongbin, Ma Jian, Zhao Boya, Ma Xifei, Chen Guofeng, Yang Yafei, Lin Min, Guo Xiao, Qing Chao, Yang Jiawei. Composition analysis of natural gas by gas chromatography Integrated comprehensive analyzer for rapid determination of common components and sulfur compound content Warning. This document does not cover all security issues related to its application. Users are responsible for developing appropriate security plans before using this document. Comprehensive protection measures should be defined, and their applicable scope should be clearly defined.

1 Scope

GB/T 46553-2025 is the Chinese national standard covering one instrument doing what used to take two - the hydrocarbon composition and the sulfur species measured in the same run, which is what a gas terminal needs when the result has to be available before the cargo is transferred. First edition, with the odorant methods GB/T 46550.1 and .2-2025. It was issued on 2 December 2025 and has been in force since 1 July 2026, as a first edition. The document is under the responsibility of the Standardization Administration of China. This page is published from the official record of the 2025 edition; the clause text of a standard this recent is not yet in circulation, and the figures, limits and tables it contains are those of the document itself, delivered in full with the English translation.

This document describes the method for determining the conventional components and sulfur compound content of natural gas and similar gas mixtures using gas chromatography. Theoretical procedures, reagents and materials, instruments and

equipment, sampling, experimental procedures, experimental data processing, precision and experimental reports. This document applies to the analysis of conventional components, sulfur compounds, and total sulfur in natural gas, and is also applicable to the determination of the content of one or more components. The applicable ranges for the determination of conventional components and sulfur compounds in this document are shown in Tables 1 and

2. For contents exceeding the range specified in this document, this document shall apply. The precision requirements are no longer applicable. Table

1. Range of determination of conventional components and content of natural gas
Component content (mole fraction) determination range Helium 0.01~

2 Hexane and heavier components. 0.01~

0.5 Carbon monoxide (a) 0.01~

1 Conventional natural gas generally does not contain carbon monoxide. However, special gas samples such as coal-derived natural gas may contain carbon monoxide, which can be determined using the methods specified in this document. The method is used for detection.