ICS 71.100.20
CCS G 86

NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 8984-2025

Replacing GB/T 8984-2008

Gas analysis - Determination of the contents of trace carbon monoxide, carbon dioxide and hydrocarbon in gases - Gas chromatography with flame ionization detector

气体分析 气体中微量一氧化碳、二氧化碳和碳氢化合物含量的测定 火焰离子化气相色谱法

Issued on: August 29, 2025 **Implemented on: March 1, 2026**

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

Table of Contents

Foreword

This document was drafted in accordance with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents".

This document replaces GB/T 8984-2008 "Determination of Carbon Monoxide, Carbon Dioxide and Hydrocarbons in Gases by Gas Chromatography".

Compared with GB/T 8984-2008, the main technical changes in the "Law" are as follows, apart from structural adjustments and editorial modifications.

- Added regulations regarding the range of component content determination (see Chapter 1);

- Added "Terms and Definitions" (see Chapter 3);

- The principle has been changed (see Chapter 4, Chapter 3 of the 2008 edition);

- Experimental conditions have been added (see Chapter 5);

- The requirements for reagents and materials have been changed (see Chapter 6, Chapter 4 of the 2008 edition);

- The requirements for instruments and equipment have been changed (see Chapter 7, Chapter 5 of the 2008 edition);

- The sampling requirements have been changed (see Chapter 8, Chapter 6 of the 2008 edition);

- The experimental procedures have been changed (see Chapter 9, Chapter 7 in the 2008 edition);

- The requirements for processing experimental data have been changed (see Chapter 10, Chapter 8 of the 2008 edition);

- Requirements for precision and measurement uncertainty have been added (see Chapter

11);

- Added requirements for quality assurance and control (see Chapter 12);

- The requirements for test reports have been changed (see Chapter 13, Chapter 9 of the 2008 edition).

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 by the China Petroleum and Chemical Industry Federation.

This document is under the jurisdiction of the National Technical Committee on Gas Standardization (SAC/TC206).

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Dalian Guangming Chemical Industry Gas Quality Monitoring Center Co., Ltd., Beijing Ruixinjie Environmental Protection Technology Co., Ltd., and Hebei Zongheng Group Fengnan Steel Limited Liability Company, Sichuan Zhongce Standard Technology Co., Ltd., Shimadzu Enterprise Management (Shanghai) Co., Ltd., Agilent Technologies (China) Co., Ltd., Lang Analysis Instruments (Shanghai) Co., Ltd., Dalian Date Gas Co., Ltd., China Jiliang University, Tsinghua University Shenzhen International Graduate School, Meishan Microelectronics Online Equipment Co., Ltd.

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The release history of this document and the document it replaces is as follows.

- First published in 1988 as GB/T 8984-1988;

- In the first revision in 1997, the standard number was changed to GB/T 8984.1-1997 "Carbon monoxide, carbon dioxide and other pollutants in gases".

Determination of hydrocarbons, Part 1: Determination of carbon monoxide, carbon dioxide

and methane in gases by gas chromatography;

- In the second revision in 2008, it was incorporated into GB/T 8984.2-1997 "Carbon monoxide, carbon dioxide and hydrocarbons in gases".

Determination of Carbon Monoxide, Carbon Dioxide and Total Hydrocarbons in Gases (Part 2: Gas Chromatography) (The previous versions of GB/T 8984.2-1997 are: GB 8985-1988) and GB/T 8984.3-1997 "Gas" Determination of Carbon Monoxide, Carbon Dioxide and Hydrocarbons in Gases - Part 3: Determination of Total Hydrocarbons in Gases by Flame Ionization The content (the previous versions of GB/T 8984.3-1997 are: GB/T 14606-1993);

- This is the third revision.

Gas analysis of trace amounts of carbon monoxide and carbon dioxide in gases Determination of hydrocarbon content Flame ionization gas chromatography Warning---Personnel using this document should have practical experience working in a formal laboratory. This document does not address all possible safety issues.

Users are responsible for taking appropriate safety and health measures and ensuring compliance with relevant national regulations.

1 Scope

This document specifies the method for determining trace amounts of carbon monoxide, carbon dioxide, and hydrocarbons in gases using flame ionization gas chromatography.

Test conditions, reagents and materials, instruments and equipment, sampling, test data processing, precision and measurement uncertainty, quality assurance and control, and testing.

The report requires a description of the principles and procedures of the experimental method.

This document applies to the determination of trace amounts of carbon monoxide, carbon dioxide, and hydrocarbons in gases. For trace amounts of carbon monoxide and carbon dioxide...

The content of carbon oxide is measured in the range of (0.02~100)x10-6 (mole fraction); the content of trace hydrocarbon components is measured in the range of...

The range for total hydrocarbons (calculated as methane) is (0.01~100)x10-6 (mole fraction); the range for trace total hydrocarbons (calculated as methane) is (0.03~100)x10-6.

(Mole fraction). For samples outside the measurement range, the measurement conditions are changed for determination.

2 Normative references

GB/T 3634.2

GB/T 4842

GB/T 4844

GB/T 4946

GB/T 8170

GB/T 8979

GB/T 14599

GB/T 14850

GB/T 43306

3 Terms and Definitions

The terms and definitions defined in GB/T 4946, GB/T 14850 and GB/T 43306, as well as the following terms and definitions, apply to this document.

3.1 Hydrocarbons

Gaseous organic compounds responded to the flame ionization detector.