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

GB/T 11060.10-2021

Replacing GB/T 11060.10-2014

**Natural gas - Determination of sulfur compounds - Part 10:
Determination of sulfur compounds using gas chromatography
method**

天然气 含硫化合物的测定 第10部分：用气相色谱法测定硫化合物

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Foreword

This document was drafted in accordance with GB/T 1.1-2020 "Guidelines for Standardization Part

1. Structure and Drafting Rules of Standardization Documents". This document is part 10 of GB/T 11060 "Determination of Sulfur Compounds in Natural Gas". GB/T 11060 has issued the following parts.

1. Determination of hydrogen sulfide content by iodometry;
2. Determination of hydrogen sulfide content by methylene blue method;
3. Determination of hydrogen sulfide content using lead acetate reaction rate dual optical path detection method;
4. Determination of total sulfur content by oxidative microcoulometry;
5. Determination of total sulfur content by hydrogenolysis-rate meter colorimetry;
6. Determination of hydrogen sulfide, mercaptan sulfur and carbon sulfur oxide content by potentiometric method;
7. Determination of Total Sulfur Content by Ringer's Combustion Method 1);
8. Determination of total sulfur content by ultraviolet fluorescence photometry;
9. Determination of mercaptan sulfur content by iodometry;
10. Determination of sulfur compounds by gas chromatography;

- 11.Determination of hydrogen sulfide content by the color length detection tube method;
- 12.Determination of hydrogen sulfide content by laser absorption spectroscopy. This document replaces GB/T 11060.10-2014 "Determination of Sulfur Compounds in Natural Gas Part

1 Scope

GB/T 11060.10-2021 is the Chinese national standard on natural gas - determination of sulfur compounds - part 10: determination of sulfur compounds using gas chromatography method, in the field of petroleum and related technologies. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 11 October 2021 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 May 2022. Classification: ICS 75.060, CCS E24. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This document specifies the principles, instruments, sampling and injection, calibration, analysis, precision, and measurement of sulfides in natural gas by gas chromatography. testing report. This document is applicable to the measurement of hydrogen sulfide, carbonyl sulfide, C1-C4 alkyl mercaptans, tetrahydrothiophene (THT), sulfur compound content, and total sulfur. Determined, the measurement range. 0.1mg/m³ ~ 600mg/m³.

Note. The different detection methods in the appendix can be selected according to the situation of the sample. With different detection methods, the components and concentrations of sulfur compounds that can be measured will vary different.

2 Normative references

The contents of the following documents constitute the indispensable clauses of this document through normative references in the text. Among them, dated quotations Only the version corresponding to that date is applicable to this document; for undated reference documents, the latest version (including all amendments) is applicable to This document.

GB/T 5275.10 Gas Analysis Dynamic Volume Method Preparation of Calibration Gas Mixture Part

3 Terms and definitions

The following terms and definitions defined in GB/T 20604-2006 apply to this document.

3.1 Carbonyl sulfide (carbon sulfide) carbonylsulfide; COS The sulfur compounds present in natural gas will increase the total sulfur content. [Source: GB/T 20604-2006, 2.5.3.3.4]

3.2 Hydrogen sulfide; H₂S Colorless and toxic gas with a smell similar to rotten eggs. [Source: GB/T 20604-2006, 2.5.3.3.8]

3.3 Total sulfur The total content of sulfur in natural gas. [Source: GB/T 20604-2006, 2.5.3.3.17, with modification]

5 Forest Use Gnat Combustion Method for Determination of Total Sulfur Content."

c) There is 1 standard for the determination of mercaptan sulfur content.

9. Determination of mercaptan sulfur content by iodometry.

d) There are 1 standards that can determine the content of hydrogen sulfide, mercaptan sulfur and carbon oxysulfide.

6. Potentiometric determination of hydrogen sulfide, mercaptan sulfur and carbon sulfur oxide content.

e) There are 1 standards that can determine the content of various sulfur compounds in natural gas.

10. Determination of sulfur compounds by gas chromatography. While this standard can simultaneously determine the content of various sulfur compounds in natural gas, it also stipulates that the sulfur content of different sulfur compounds The amount is added to get the total sulfur content. Determination of sulfur compounds in natural gas Part

10 Permeation Method

GB/T 10628 Gas analysis calibration gas composition determination and calibration comparison method

GB/T 13609 Guidelines for Natural Gas Sampling

GB/T 20604-2006 Natural Gas Vocabulary

HG/T 2975 Gas Analysis Standard Gas Mixture Preparation Certificate