

ICS 75.060

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

GB/T 11060.8-2020

Replacing GB/T 11060.8-2012

**Natural gas - Determination of sulfur compounds - Part 8:
Determination of total sulfur content by ultraviolet fluorescence
method**

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Foreword

GB/T 11060 "Determination of Sulfur Compounds in Natural Gas" is divided into the following parts.

- Part 1.Determination of hydrogen sulfide content by iodometry;
- Part 2.Determination of hydrogen sulfide content by methylene blue method;
- Part 3.Determination of hydrogen sulfide content using lead acetate reaction rate dual optical path detection method;
- Part 4.Determination of total sulfur content by oxidative microcoulometry;
- Part 5.Determination of total sulfur content by hydrogenolysis-rate meter colorimetry;
- Part 6.Use the potentiometric method to measure the content of hydrogen sulfide, mercaptan sulfur and carbon sulfur oxide;
- Part 8.Determination of total sulfur content by ultraviolet fluorescence photometry;
- Part 9.Determination of mercaptan sulfur content by iodometry;
- Part 10.Determination of sulfur compounds by gas chromatography;
- Part 11.Determination of hydrogen sulfide content by the color length detection tube method;
- Part 12.Determination of hydrogen sulfide content by laser absorption spectroscopy.

This part is Part 8 of GB/T 11060.

This section was drafted in accordance with the rules given in GB/T 1.1-2009.

This part replaces GB/T 11060.8-2012 "Determination of sulfur compounds in natural gas Part 8. Determination by ultraviolet fluorescence spectrometry

Determine the total sulfur content. Compared with GB/T 11060.8-2012, the main technical changes in this part are as follows.

---Modified the total sulfur determination range (see Chapter 1, Chapter 1 of the.2012 edition);

---Modified normative reference documents (see Chapter 2, Chapter 2 of the.2012 edition);

---The definition of absorption, adsorption and adsorption has been added (see Chapter 3);

---Added requirements for test conditions (see Chapter 4);

--- Modified the expression of oxygen conditions (see Chapter 5, Chapter 3 of the.2012 edition);

---Added the schematic diagram of the main components of the instrument, the sampling system and requirements, and deleted the flow control, sampling system and micro sampler

Description (see Chapter 6, Chapter 4 of the.2012 edition);

---The requirements for argon, helium and oxygen have been modified, the requirements for liquid standard materials have been deleted, and the requirements for gas standard materials have been added

Seek (see Chapter 7, Chapter 5 of the.2012 edition);

---Deleted the description of the danger (see Chapter 6 of the.2012 edition);

---Added precautions when sampling (see Chapter 8, Chapter 7 of the.2012 edition);

---The preparation, calibration steps, operation steps, calculations and quality control of the instrument have been deleted (see Chapter 8 of the.2012 edition,

Chapter 9, Chapter 10, Chapter 11, Chapter 12);

---Added the instructions for preparing the instrument before the test and using the gas standard substance to establish the calibration curve (see Chapter 9);

---Added the description of sample gas detection and the process of calculating the total sulfur content of sample gas (see Chapter 10);

--- Modify the precision data (see Chapter 11, Chapter 13 of the.2012 edition);

---Added the data analysis example of the precision test (see Appendix A).

The translation method used in this section is equivalent to ISO 20729.2017

“Determination of sulfur compounds in natural gas by ultraviolet fluorescence spectrometry

Determine the total sulfur content. The Chinese documents that have a consistent correspondence with the international documents cited in this section are as follows.

---GB/T 13609-2017 Guidelines for Natural Gas Sampling (ISO 10715.1997, MOD)

---GB/T 35860-2018 Gas analysis and calibration mixed gas certificate content (ISO 6141.2015, IDT)

This section has made the following editorial changes.

---Increase the serial number of this part in the standard name in order to be consistent with the existing standard series.

This part was proposed and managed by the National Natural Gas Standardization Technical Committee (SAC/TC244).

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1 Scope

This part of GB/T 11060 specifies the test method for the determination of total sulfur in natural gas by ultraviolet fluorescence method.

This part is applicable to the determination of the total sulfur content in natural gas between 1mg/m³~200mg/m³ (in terms of sulfur), and the total sulfur content exceeds

200mg/m³ can be measured after dilution.

2 Normative references

The following documents are indispensable for the application of this document. For dated

reference documents, only the dated version applies to this article

Pieces. For undated references, the latest version (including all amendments) applies to this document.

ISO 6141 Gas analysis-Contents of certificates for calibration of gas mixtures)

ISO 10715 natural gas sampling guidelines (Natural gas-Sampling guidelines)

3 Terms and definitions

The following terms and definitions apply to this document.

3.1

Absorption

When a gas mixture is in contact with a liquid, one or several components are extracted from the gas mixture.

3.2

Adsorption

By physical or chemical forces, gas molecules, dissolved substances or liquids are retained on the solid or liquid surface in contact with them.

3.3

Sorption

The process by which one substance absorbs or adsorbs another substance.

4 Test conditions

The test conditions are the same as the calibration conditions.

The reference conditions of the measurement results are the same as those of the standard gas certificate.

Note. The reference conditions on the standard gas certificate are usually 101.325kPa, 20°C or 101.325kPa, 15°C or 101.325kPa, 0°C.