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

GB/T 27894.5-2012

Natural gas -- Determination of composition with defined uncertainty by gas chromatography -- Part 5: Determination of nitrogen, carbon dioxide and C1 to C5 and C+6 hydrocarbons for a laboratory and on-line process application using three columns

天然气 在一定不确定度下用气相色谱法测定组成 第5部分：实验室和在线工艺系统中用三根色谱柱测定氮、二氧化碳和C1至C5及C6+的烃类

(English Translation)

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Foreword

GB/T 27894 "natural gas under certain uncertainty by gas-phase chromatography composition" is divided into six parts.

--- Part 1. Analysis of guidelines;

--- Part 2. measurement system characteristics and statistics;

--- Part 3. with two packed columns Determination of hydrogen, helium, oxygen, nitrogen, carbon dioxide and hydrocarbons up to C8;

--- Part 4. laboratory and on-line measuring system using two columns Determination of nitrogen, carbon dioxide and C1 to C5 and C 6 of Hydrocarbons;

--- Part 5. using laboratory and on-line processing system three columns Determination of nitrogen, carbon dioxide and C1 to C5 and C 6 of Hydrocarbons;

--- Part 6. Determination of capillary column with three of hydrogen, helium, oxygen, nitrogen, carbon dioxide and hydrocarbons C1 to C8's.

This is Part 5 GB/T 27894 in.

Rules in this section in accordance with GB/T 1.1-2009 given compilation.

This section uses the translation method identical with ISO 6974-5:2000 "gas at a certain uncertainty by gas chromatography to determine the composition Part 5. using laboratory and on-line processing system three columns Determination of nitrogen, carbon dioxide and C1 to C5 and C 6 hydrocarbons. " Consistent correspondence between this standard international documents and normative references of the following documents.

--- GB/T 5274-2008 gas analyzer calibration weighing method for preparing a mixed gas (ISO 6142:2001, IDT);

--- GB/T 27894.2-2011 natural gas under certain uncertainty by gas chromatography to determine the composition Part 2. Measurement Characteristics of the system and mathematical statistics (ISO 6974-2:2001, IDT).

This part of the National Gas Standardization Technical Committee (SAC/TC244)

centralized.

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1 Scope

This section GB/T 27894 gives a quantitative analysis using three Genzhu system consisting of natural gas by gas chromatography. This method is applicable A range of natural gas, conventional gas does not contain any liquid hydrocarbon condensate/water-sample-line automatic calibration. This method is applicable

Table 1 molar fraction within a predetermined range of gas components. These ranges do not represent the detection limit, and that the use of this method in this range can be up to To a predetermined precision. Although there is a sample of one or more components can not be detected, but this method can still apply.

Use this section with GB Part 1 and Part 2/T27894 combination.

Table 1 Scope

Component	mole fraction range /%	Nitrogen	carbon dioxide	Methane	Ethane	Propane	Isobutane (2-methylpropane)	N-butane	Neopentane (2,2-dimethyl propane)	Isopentane (2-methylbutane)	N-pentane	Hexane (all C6 and higher hydrocarbons)
	0.001 to 15.0	0.001 to 8.5	75 to 100	0.001 to 10.0	0.001 to 3.0	0.001 to 1.0	0.001 to 1.0	0.001 to 0.5	0.001 to 0.5	0.001 to 1.0		

Note 1: The higher hydrocarbons n-pentane with "virtual components" C 6 represents, in this form as a component of test and calibration peak is the nature of C 6 components Yes.

By extending the analysis or a detailed analysis of the historical data calculated by monomer C6 and higher hydrocarbons.

Note 2: Oxygen is not a normal component of natural gas, gas samples taken online instrument generally do not contain oxygen, so that if the air because it contains oxygen deposit in the oxygen it will be measured together with the nitrogen. Since the detector has a slight difference in response to oxygen and nitrogen, and the resultant (nitrogen, oxygen) results A lesser degree of error. However, the results of gas/air mixture is still quite accurate, since the oxygen, nitrogen, both for two-component hot None contributions.

Note 3: helium and argon content is assumed to be negligible and no change, and therefore does not require determination of helium and argon.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated edition applies to this article Member. For undated references,

the latest edition (including any amendments) applies to this document.

GB/T 27894.5-2012/ISO 6974-5:2000