

ICS 75.010
CCS E11



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

GB/T 19143-2017

Replacing GB/T 19143-2003

**Analytical method of element for carbon,hydrogen ,oxygen and
nitrogen in rock organics**

岩石有机质中碳、氢、氧、氮元素分析方法

Issued on: May 12, 2017

Implemented on: December 1, 2017

**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine of the People's Republic of China;
Standardization Administration of China**

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Foreword

This standard is drafted in accordance with the rules given in GB/T 1.1-2009. The standard instead of GB/T 19143-2003 "rock organic matter in the carbon hydrogen oxygen element analysis method", and GB/T 19143-2003 Compared to the main technical changes are as follows:

--- standard name from the "organic matter in carbon, hydrogen, oxygen element analysis method" to "rock organic matter in carbon, hydrogen, oxygen, nitrogen analysis method"; - modified the scope of application of the standard (see Chapter 1);

--- Added normative reference documents (see Chapter 2); - Increased nitrogen detection method (see 3.1);

--- modified the quality requirements, from quality requirements to precision (see Chapter 8); - Increased quality of nitrogen (see 8.2). This standard is proposed by the National Petroleum and Natural Gas Standardization Technical Committee (SAC/TC355). The standard is responsible for the drafting unit. China Petroleum and Geological Exploration and Development Research Institute of Wuxi PetroChina Geology Institute. This standard participates in the drafting unit. Experimental Research Center of PetroChina Exploration and Development Research Institute, Exploration and Development of PetroChina Liaohe Oilfield Branch Institute of Sinopec Shengli Oilfield Geological Research Institute. The main drafters of this standard. Wang Qin, Xu Jin, Wu Ping, Xu Yirui, Ma Yudong, Zhang Caiming, Wang He This standard replaced the previous version of the standard release.

--- GB/T 19143-2003. Rock organic matter in the carbon, hydrogen, oxygen, Nitrogen element analysis method Caution - Personnel using this standard should have practical experience in formal laboratory work. This standard does not indicate all possible security questions question. It is the responsibility of the user to take appropriate safety and health measures and to ensure compliance with the conditions set forth in the relevant national regulations.

1 Scope

GB/T 19143-2017 is the Chinese national standard on analytical method of element for carbon, hydrogen, oxygen and nitrogen in rock organics, 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 12 May 2017 by the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China; Standardization Administration of China, and has been in force since 1 December 2017. Classification: ICS 75.010, CCS E11. 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 standard specifies the determination of the samples in the analysis of carbon, hydrogen, oxygen and nitrogen in the organic matter of the rock, and the calculation of the results. density. This standard applies to the determination of kerogen, organic solvent extract, coal and crude oil in the carbon, hydrogen, oxygen and nitrogen.

2 Normative reference documents

The following documents are indispensable for the application of this document. For dated references, only the dated edition applies to this article Pieces. For undated references, the latest edition (including all modifications) applies to this document. Separation of kerogen in sedimentary rocks GB/T 19144

3 Principle

3.1 Analysis of carbon, hydrogen and nitrogen The sample is burned in a high-temperature combustion tube with oxygen, and carbon, hydrogen, and nitrogen are oxidized to carbon dioxide, water and nitrogen oxides. And then through Reduced tube, nitrogen oxide is reduced to nitrogen. The generated carbon dioxide, water and nitrogen were measured and the contents of carbon, hydrogen and nitrogen in the sample were calculated.

3.2 Analysis of oxygen elements Detection of oxygen in the sample organic matter in the pyrolysis tube in the pyrolysis reaction to produce carbon monoxide calculated by the sample oxygen content.

4 Instruments and equipment

4.1 Elemental analyzer. equipped with hydrocarbon combustion and gas separation system, oxygen cracking and gas separation system, thermal conductivity detector or infrared inspection Measuring device.

4.2 electronic balance. sense of 0.001mg.

4.4 liquid packing device.

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