

ICS 73-010

CCS D04



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

**GB/T 18340.6-2010**

Replacing GB/T 18340.6-2001

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**Organic geochemical analysis methods for geological samples  
- Part 6: Determination of gasoline group component - Mass  
spectrometry**

地质样品有机地球化学分析方法 第6部分：汽油族组成测定 质谱法

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### Foreword

GB/T 18340 "organic geochemistry in geological samples analysis methods," There are six sections.

- Part 1. Light Crude Gas Chromatography;
- Part 2. Determination of Organic Matter stable carbon isotope isotope mass spectrometry;
- Part 3. Determination of heavy petroleum fractions Mass Spectrometry saturated aliphatic hydrocarbon component;
- Part 4. heavy petroleum distillate aromatic aliphatic component mass spectrometry;
- Part 5. rock and extract crude oil saturated hydrocarbon analysis by gas chromatography;
- Part 6. Gasoline Hydrocarbon Mass Spectrometry. This section GB/T 18340 Part 6. This section of the reference standard American Society for Testing Materials ASTM D2789-95 (2005) "Low-olefin gasoline hydrocarbons Mass Spectrometry law". This Part replaces GB/T 18340.6-2001 "Organic geochemical measurements of geological samples Gasoline mass spectrometry method of composition", and GB/T 18340.6-2001 compared with the following changes.
  - By the standard name to "organic geochemistry in geological samples" Organic geochemical measurements of geological samples Gasoline mass spectrometry method of composition " Analysis - Part 6. Gasoline Hydrocarbon Mass Spectrometry ";
  - Increased alert, warnings, terms and definitions section;
  - Original standard has been adjusted the structure and content, and made the appropriate changes to the text; sections of the reference ASTM D2789- 95 (2005), the relevant sections made major changes. This section presents the People's Republic of

China Ministry of Land Resources. This part of the National Standardization Technical Committee under the jurisdiction of Land and Resources. This standard is drafted by: National Geological Experimental Test Center. This section is drafted. Wuxi Institute of Petroleum Geology Research Institute of Petroleum Exploration and Development Co., Ltd. China Petroleum & Chemical. The main drafters of this section. Song Xiaoying, Zhang Zhirong, Zhang ditch, money Zhihao. This part of the standard replaces the previous editions as. GB/T 18340.6-2001. Organic geochemical analysis of geological samples Part 6. Gasoline Hydrocarbon Mass Spectrometry Warning

--- Use this section shall be a person experiences regular laboratory work. This section does not point out all possible security asked question. Users have the responsibility to take appropriate safety and health practices and to ensure compliance with the conditions relevant national regulations.

## 1 Scope

GB/T 18340.6-2010 is the Chinese national standard on organic geochemical analysis methods for geological samples - part 6: determination of gasoline group component - mass spectrometry, in the field of mining and minerals. 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 10 November 2010 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 February 2011. Classification: ICS 73-010, CCS D04. 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.

GB/T 18340 provisions of this part of the Mass Spectrometry group composition of gasoline, calculation and analysis of quality requirements. This section applies to the determination of condensate, or light crude oil (95% distillate temperature below 196 °C) in three and three kinds of aromatic hydrocarbon saturation Family composition. Olefin content in the sample is less than 3%. Principle

2 Sample by the direct injection system is vaporized into the mass spectrometer by electron bombardment ion source to obtain a mixed mass chromatogram of the sample. Each Plus intensity of the peak and the corresponding inverse matrix coefficients Hydrocarbon multiplying the determined content in the sample group components.

## 3 Reagents and materials

3.1 perfluorinated kerosene (PFK), perfluoro tributylamine (FC-43) or other known accurate

mass reference materials.

3.2 hexadecane. chromatography.

3.3 dichloromethane. AR.

## 4 Instruments and equipment

4.1 Spectrometer. having EI ion source and sample mass spectrometer equipped with a direct injection system and data acquisition and processing system.

4.2 Injection system. can be heated to 180 °C (heating rate. 30 °C/min ~ 130 °C/min) direct injection system.

4.3 micro syringe or constant volume pipette (1μL ~ 10μL). Step

### 5.1 Analysis conditions

5.1.1 Mass resolution. not less than 500.

5.1.2 ionization mode. EI.

5.1.3 Electron Impact Energy. 70eV.

5.1.4 ionization chamber temperature. 250 °C. Injector

5.1.5 Heating temperature. 125 °C ~ 300 °C (50 °C/min).

5.1.6 Quality scan mode. full scan.

5.1.7 Quality scan range. 35 amu~250amu.

5.1.8 Scanning speed. 500amu/s.

### 5.2 Instrument Calibration

5.2.1 a variety of instrument calibration and analysis should be performed when the instrument is running stable.

5.2.2 with PFK (or other known accurate quality reference material) mass spectrometer calibration mass scale, so that the  $m/z35 \sim m/z250$  within range Quality deviation does not exceed  $\pm 0.2\text{amu}$ .

5.2.3 Calibration with n-hexadecane fragmentation model, so Sigma69/Sigma71 ratio of  $0.18 \pm 0.03$ ,  $m/z127$  and  $m/z226$  peak height ratio At  $1.4 \pm 0.1$ .