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INDUSTRY STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

HS/T 50-2016

Quantitative analysis of the aromatics in hydrocarbons

(English Translation)

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009, HS/T 1-2011 and HS/T 39-2013.

This standard uses the redrafting method to modify and adopt U0P 744-06 "Gas Chromatographic Determination of Aromatics in Hydrocarbons".

The technical differences between this standard and UOP 744-06 and the reasons are as follows.

- MODIFY the scope of application, to be applied to the determination of hydrocarbons containing aromatic hydrocarbons whose final boiling point is not higher than 285 °C, so as to clarify the scope of testing products;
- ADD the use of gas chromatography-mass spectrometry, for qualitative analysis of each component, to meet the technical requirements of customs supervision and taxation;
- Considering the complex composition of mixed aromatics, the correction factor of the peak area in this standard is calculated by the effective carbon

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number theory instead of the method of preparing the calibration solution, to simplify the processing steps of the experimental results.

This standard has made the following editorial changes.

- In order to be consistent with the content of the existing standard, CHANGE the standard name to "Quantitative analysis of the aromatics in hydrocarbons".

This standard was proposed by the Customs Administration Department of the General Administration of Customs of the People's Republic of China.

This standard shall be under the jurisdiction of the Department of Policies and Regulations of the General Administration of Customs of the People's Republic of China.

Drafting organizations of this standard. Shanghai Customs of the People's Republic of China, China Standard Technical Service (Shanghai) Co., Ltd.

1 Scope

This standard specifies the instruments and equipment for testing the aromatic content in hydrocarbons, determination procedures and processing of analysis results.

2 Normative references

The following documents are essential to the application of this document. For the dated documents, only the versions with the dates indicated are applicable to this document; for the undated documents, only the latest version (including all the amendments) is applicable to this standard.

UOP 744-06 Gas Chromatographic Determination of Aromatics in Hydrocarbons

3 Principles

The samples are injected into a gas chromatograph-mass spectrometer and a gas chromatograph which is equipped with an FID detector. Each composition

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is qualitatively determined by the GC-Mass total ion chromatogram, then quantified by the GC-FID chromatogram.

4 Equipment

Gas chromatography-mass spectrometer. It is equipped with mass spectrometer with E1 source, split/splitless sample inlet, autosampler; equipped with a data processor or chemistry workstation for acquiring and processing data.

5 Measurement steps

According to the determination conditions in 5.1, take two parallel samples and run them on GC-FID and GC-MS, respectively. The retention time and chromatographic peak area of each component are automatically collected by the chromatographic data processor. According to the GC-MS total ion chromatogram, confirm the name of each compound on the GC-MD chromatogram

6 Analytical results

Using the stepwise analysis of variance method, calculate the standard deviation within the same day according to the average concentration in Table C.1 in Appendix C. For two tests conducted by the same analyst in a laboratory on the same day, the difference cannot exceed the allowable deviation under the 95% confidence level as shown in Table C.1.

7 Results representations

The analysis result requirements are as follows.

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