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

GB/T 6683.2-2025

**Pertroleum and related products - Precision of measurement
methods and results - Part 2: Interpretation and application of
precision data in relation to methods of test**

石油及相关产品 测量方法与结果精密度 第2部分：试验方法精密度数据的解释和
应用

(English Translation)

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents".

Drafting.

This document is Part 2 of GB/T 6683 "Measurement Methods and Precision of Results for Petroleum and Related Products". GB/T 6683 has been...

The following sections were published.

---Part 1: Determination of Precision Data for Experimental Methods;

---Part 2: Interpretation and application of precision data for experimental methods;

---Part 3: Monitoring and Validation of Precision Data.

This document is modified to adopt ISO 4259-2:2017 "Measurement methods and results of petroleum and related products - Precision - Part 2: Precision".

Interpretation and application of data.

This document has undergone the following structural adjustments compared to ISO 4259-2:2017.

---Adjust the last paragraph of section 5.2 to be the first paragraph;

--- Annex C of ISO 4259-2:2017 has been removed; ISO 4259-4 is referenced.

--- Annex E of ISO 4259-2:2017 has been deleted; related information is provided as a note in the Scope chapter.

The technical differences between this document and ISO 4259-2:2017, and the reasons therefor, are as follows.

---ISO 4259-1 (see Chapters 1, 3, 5.2, and 6.1.3) has been replaced with the normatively referenced GB/T 6683.1 to adapt to my country's national standards.

Improve the technical conditions and operability (see Chapter 1);

---Added normative references to GB/T 6683.3-2023 to adapt to my country's technical conditions and improve operability (see...) 6.1.4);

---The annex concerning controlled statistics in ISO 4259-2:2017 has been removed; this content has been published separately as ISO 4259-4 (see Chapter 2).

4.1, 6.1.2).

The following editorial changes have been made to this document.

---Incorporates amendments to ISO 4259-2:2017/Amd1.2019, the relevant clauses of which are indicated in the margins.

The vertical double lines (|) are marked;

---ASTM D6708 has been replaced with ISO 4259-5, which is cited in the informational reference, to ensure compliance with international standards.

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

This document was proposed and is under the jurisdiction of the National Technical Committee on Standardization of Petroleum Products and Lubricants (SAC/TC280).

Introduction

To establish specifications for commercially available petroleum and related products, and to check product conformity to specifications, standard test methods are typically used to determine product quality.

The specific properties of a product. This refers to two or more measurements of the same property using specific test methods or different test methods that claim to measure the same property.

Quantitative analysis often yields inconsistent results. Therefore, when developing product specifications and assessing whether the differences in test results fall within the statistically expected range, it is crucial to consider these factors.

Within the context of [the study], and when making decisions that meet specifications based on limited experimental results, it is necessary to fully consider this fact. This can be achieved by using statistically based [methods/approaches].

The accuracy estimation of the test method can achieve the following objectives.

---An objective measurement of the reliability of specification limits;

---Judgment of conformity with specifications;

---The expected degree of consistency between two or more results obtained under specific conditions.

GB/T 6683, "Measurement Methods and Precision of Petroleum and Related Products," aims to specify the measurement methods and results for petroleum and related products.

Precision is proposed to consist of five parts.

---Part 1: Determination of Experimental Method Precision Data. The aim is to establish the methodology for designing interlaboratory studies (ILS) and the use of...

This study is used to estimate the calculation method for the precision of the experimental method.

---Part 2: Interpretation and Application of Precision Data for Test Methods. The aim is to establish the precision of properties determined by specific test methods.

At that time, the method of setting property specifications based on the precision of the test method, and the specification when the supplier and the recipient obtain inconsistent results.

Determining the consistency status.

---Part 3: Monitoring and Validation of Published Precision Data for Test Methods. The aim is to establish the accuracy achieved by routine monitoring test methods.

A method for comparing the precision with that published in standard test methods.

---Part 4: Validation of laboratory implementation of test method standards under statistical control. The purpose is to determine the use of statistical control.

The figure shows a method to confirm whether an individual laboratory is under control when implementing test method standards.

---Part 5: Statistical evaluation between two different measurement methods for determining the same property. The aim is to establish a statistical evaluation method for two...

Statistical research methods for relative deviations between methods, and determination of the functional relationship between relative deviations.

This document describes the application of the precision test method derived from GB/T 6683.1. This document, along with GB/T 6683.1, forms a complete set.

The same method is used. Furthermore, a general method for measuring the consistency between two different test methods of the same property is also given.

GB/T 6683.1 and GB/T 6683.2 include the determination of precision estimates and the application of precision data, respectively consistent with ASTM standards.

The precision estimation of D6300 is consistent with the application of test data in ASTM D3244.

The symbols and terms used in this document and in GB/T 6683.1 are given in Appendix I of GB/T 6683.1-2021.

Measurement methods and results precision of petroleum and related products Part 2: Interpretation and Application of Precision Data of Experimental Methods