



**International  
Standard**

**ISO 4259-2**

**Petroleum and related products —  
Precision of measurement methods  
and results —**

**Part 2:  
Interpretation and application  
of precision data in relation to  
methods of test**

*Produits pétroliers et connexes — Fidélité des méthodes de  
mesure et de leurs résultats —*

*Partie 2: Interprétation et application des valeurs de fidélité  
relatives aux méthodes d'essai*

**Second edition  
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# Sample Document

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CP 401 • Ch. de Blandonnet 8  
CH-1214 Vernier, Geneva  
Phone: +41 22 749 01 11  
Email: [copyright@iso.org](mailto:copyright@iso.org)  
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## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at [www.iso.org/patents](http://www.iso.org/patents). ISO shall not be held responsible for identifying any or all such patent rights.

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 28, *Petroleum and related products, fuels and lubricants from natural or synthetic sources*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 19, *Gaseous and liquid fuels, lubricants and related products of petroleum, synthetic and biological origin*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 4259-2:2017), which has been technically revised. It also incorporates the Amendment ISO 4259-2:2017/Amd. 1:2019.

The main changes are as follows:

- included normative references to ISO 4259-3 and ISO 4259-4;
- modified [Figures 1, 2](#) and [3](#);
- deleted former Annex C because its content is covered by ISO 4259-4.

A list of all parts in the ISO 4259 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).

## Introduction

For the purposes of setting product specifications and checking product conformity against these specifications, standard test methods are usually referenced for specific properties of commercial petroleum and related products. Two or more measurements of the same property of a specific sample by a specific test method, or by different test methods that purport to measure the same property, will not usually give exactly the same result. It is therefore necessary to take proper account of this fact when setting product specifications, assessing if the differences between test results are within statistical expectation, and making specification compliance decisions based on limited test results. By using statistically-based estimates of the precision for a test method, the following can be achieved:

- an objective measure of the reliability of specification limits,
- a specification compliance decision,
- the degree of agreement expected between two or more results obtained in specified circumstances.

This document describes the applications of the precision of test methods as derived from ISO 4259-1. It is intended to be used in conjunction with the other parts of ISO 4259 series to provide additional guidance on the application of precision estimates. ISO 4259-3 specifies how to use the precision to assess capability via proficiency testing and ISO 4259-4 specifies how to use this precision to assess the “in statistical control” status and precision capability of a specific laboratory in the execution of a test method. Furthermore, ISO 4259-5 specifies the general approach to the agreement between two different test methods that purport to measure the same property.

ISO 4259-1 and this document encompass both the determination of precision estimates and the application of precision data. The principles within the documents attempt to be aligned with ASTM D6300<sup>[1]</sup> regarding the determination of the precision estimates and with ASTM D3244<sup>[2]</sup> for the utilization of test data.

A glossary of the variables used in this document is included in ISO 4259-1:2026, Annex I.

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# Petroleum and related products — Precision of measurement methods and results —

## Part 2: Interpretation and application of precision data in relation to methods of test

### 1 Scope

This document specifies the methodology for applying precision estimates of a test method derived from the processes specified in ISO 4259-1. In particular, it specifies the procedures for setting the property specification limits based upon test method precision where the property is determined using a specific test method, and determines the specification conformance status when there are conflicting results between supplier and receiver. Other applications of this test method precision are briefly described in principle without the associated procedures.

The procedures in this document have been designed specifically for petroleum and petroleum-related products, which are normally homogeneous. However, the procedures described in this document can also be applied to other types of homogeneous products.

This document is not applicable to non-homogenous products.

### 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 4259-1:2026, *Petroleum and related products — Precision of measurement methods and results — Part 1: Determination of precision data in relation to methods of test*

ISO 4259-3, *Petroleum and related products — Precision of measurement methods and results — Part 3: Monitoring and verification of published precision data in relation to methods of test*

ISO 4259-4, *Petroleum and related products — Precision of measurement methods and results — Part 4: Use of statistical control charts to validate 'in-statistical-control' status for the execution of a standard test method in a single laboratory*

### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 4259-1 and the following apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>