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International

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

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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.

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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[1] regarding the determination of the precision estimates and with ASTM D3244[2] 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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