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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

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

*Partie 2: Application des valeurs de fidélité relatives aux méthodes
d'essai*



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ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.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 documents 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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

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For an explanation on 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 the following URL: 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*.

This first edition of ISO 4259-2, together with ISO 4259-1, cancels and replaces ISO 4259, which has been technically revised. This document provides the content of Clauses 7 to 10 of ISO 4259 and connected Annexes H and I. The remaining Clauses and [Annexes A](#) to G of ISO 4259:2006 are replaced by ISO 4259-1.

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

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Introduction

For purposes of setting product specifications, and to check product compliance 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, and
- the degree of agreement expected between two or more results obtained in specified circumstances.

This document describes the applications of the precision of test method as derived from ISO 4259-1. It is intended to be a companion document to ISO 4259-1. Additional normative and informative discussions on 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 are provided. Also, the general approach to the agreement between two different test methods that purport to measure the same property are given.

The two parts of ISO 4259 encompass both the determination of precision estimates and the application of precision data. It attempts 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 and ISO 4259-1 is included in ISO 4259-1:2017, Annex I.