

**SLOVENSKI STANDARD**  
**oSIST prEN ISO 4259-3:2019**  
**01-februar-2019**

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**Nafta in sorodni proizvodi - Natančnost merilnih metod in rezultatov - 3. del:  
Spremljanje in upravljanje podatkov o natančnosti pri preskusnih metodah  
(ISO/DIS 4259-3:2018)**

Petroleum and related products - Precision of measurement methods and results - Part 3: Monitoring and management of precision data in relation to methods of test (ISO/DIS 4259-3:2018)

Mineralölerzeugnisse - Präzision von Messverfahren und Ergebnissen - Teil 3: Monitoring und Management der Präzisionsdaten in Bezug auf Prüfverfahren (ISO/DIS 4259-3:2018)

Produits pétroliers - Fidélité des méthodes de mesure et des résultats - Partie 3 : Surveillance et gestion des données de fidélité en relation avec les méthodes d'essai (ISO/DIS 4259-3:2018)

**Ta slovenski standard je istoveten z: prEN ISO 4259-3**

**ICS:**

75.080	Naftni proizvodi na splošno	Petroleum products in general
75.180.30	Oprema za merjenje prostornine in merjenje	Volumetric equipment and measurements

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## 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

*Produits pétroliers — Fidélité des méthodes de mesure et des résultats —**Partie 3: Surveillance et gestion des données de fidélité en relation avec les méthodes d'essai*

ICS: 75.080

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## ISO/DIS 4259-3:2018(E)

### 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](http://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](http://www.iso.org/patents)).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 28, *Petroleum products and related products of synthetic or biological origin*.

ISO 4259, Petroleum and related products — Precision of measurement methods and results, consists of the following parts:

- Part 1: Determination of precision data in relation to methods of test,
- Part 2: Interpretation and application of precision data in relation to methods of test, and
- Part 3: Monitoring and verification of published precision data in relation to methods of test.

A 4<sup>th</sup> part with the title "Use of Statistical Control Charts to validate 'in-statistical-control' status for the execution of a standard test method in a single laboratory" is under development in ISO/TC 28/WG 2

## Introduction

For purposes of quality control and to check compliance with specifications, the properties of commercial petroleum products are assessed by standard laboratory test methods. 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, by arriving at statistically based estimates of the precision for a method, i.e. an objective measure of the degree of agreement expected between two or more results obtained in specified circumstances.

ISO 4259-1 specifies the methodology for the design, execution, and data processing of a one-time snapshot statistical study to arrive at precision estimates achieved by a random sampling of laboratories. This snapshot estimate is published in the standard test method as the expected precision.

This document specifies the methodology for utilisation of Proficiency Testing (PT) schemes (as defined in ISO 4259-2) to test the hypothesis that the precision achieved by the laboratories in the PT scheme is statistically consistent with the published precision derived from the ISO 4259-1 study described above.

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# 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

### 1 Scope

This International Standard specifies the methodology for the regular monitoring of the test method precision achieved versus precision published in the standard test method using data from Proficiency Testing (PT) schemes supported by the regular users of standard test methods.

The procedures in this International Standard are designed specifically for PTs' conducted on standard test methods for petroleum and petroleum related products, which are presumed to be homogeneous and where the data distribution is approximately normal.

The procedures in this document are designed specifically for standard test methods with published reproducibility derived from ISO 4259-1 or equivalent (such as ASTM D6300[1]) for petroleum and petroleum related products, which are normally considered as homogeneous.

In particular, this document specifies the methodology for the statistical comparison of standard deviation under reproducibility conditions achieved in PT programmes versus that published.

Purpose of this comparison is to ascertain if the published reproducibility precision is representative of that achievable by the regular participants in the PT programmes.

Guidance on how to use PT zz score to monitor an individual participant's performance over time is provided as an Informative Annex.

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

ISO 13528:2015, *Statistical methods for use in proficiency testing by interlaboratory comparison*

ISO/IEC 17043, *Conformity assessment — General requirements for proficiency testing*

### 3 Terms and definitions

For the purposes of this document, the terms and definitions in ISO 4259-1, ISO 13528 and ISO 17043 and the following apply.

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

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

**ISO/DIS 4259-3:2018(E)**

**3.1 Proficiency Testing**  
**PT**  
 evaluation of participant performance against pre-established criteria by means of interlaboratory comparisons

[SOURCE: adapted from ISO/IEC 17043]

**3.2 Proficiency Testing Schemes**  
**PTS**  
 programme designed for the periodic evaluation of participating laboratories' proficiency in the execution of a Standard Test Method through the statistical analysis of their test results obtained on aliquots prepared from a single batch of homogeneous material

Note 1 to entry: The frequency of such testing varies in accordance with the scheme objective. Each execution of testing involves testing of a single batch of material. Materials typically vary from test to test.

Note 2 to entry: This is also commonly referred to as Inter Laboratory Cross Check Programme (ILCP).

**4 Proficiency Testing scheme requirement****4.1 General****4.1.1 PT scheme provider**

The proficiency testing (PT) scheme provider should conform to technical and management requirement as outlined in ISO/IEC 17043.

**4.1.2 PT homogeneity and stability of proficiency test items****4.1.2.1 Property stability**

This standard is suitable only for properties of interest that are known to be stable over time and transport.

**4.1.2.2 Property homogeneity**

The assessment of property homogeneity shall be performed after the proficiency test items have been packaged in the final form and before distribution to participants. Consult and follow appropriate guidance from ISO 13528, Annex B (Homogeneity and stability of proficiency test items).

**4.1.3 PT data and statistics requirement**

The comparison methodology in this document is intended for PT data and statistics meeting the following requirement:

*PT Data Requirement:*

- 1) Data is obtained using a common standard test method with a published reproducibility obtained in accordance with ISO 4259-1 or equivalent
- 2) Data is all numeric (i.e. does not contain censored results such as < xxx or > xxx)
- 3) A single result only is reported by each participant (i.e. no repeat)

*PT Statistics Requirement:*