DIN EN ISO 4259-2:2020-02 (E)

Petroleum and related products - Precision of measurement methods and results - Part 2: Interpretatio n and application of precision data in relation to methods of test (ISO 4259-2:2 017 + Amd 1:2019) (includes Amendment A1:2019)

Contents

Page

European foreword ... **3**

[A1] European foreword to Amendment [A1] ... **4**

Foreword ... **5**

[A1] Foreword to Amendment [A1] ... **6**

Introduction ... **7**

1 Scope ... **8**

2 Normative references ... **8**

3 Terms and definitions ... **8**

4 Application and significance of repeatability, *r*, and reproducibility, *R* ... **9**
4.1 General ... 9
4.2 Repeatability, *r* ... 9
4.2.1 General ... 9
4.2.2 Acceptability of results ... 9
4.2.3 Confidence limits calculations using results collected under repeatability conditions ... 10
4.3 Reproducibility, *R* ... 10
4.3.1 Acceptability of results ... 10
4.3.2 Confidence limits calculations using results collected under reproducibility conditions ... 12
4.4 Use of reproducibility to determine bias between two different test methods that purport to measure the same property ... 12
4.4.1 General ... 12
4.4.2 Process ... 12

5 Specifications ... **13**
5.1 Aim of specifications ... 13
5.2 Construction of specifications limits in relation to scope and precision of the specified test method ... 13

6 Assessment of quality conformance to specification ... **14**
6.1 General ... 14
6.2 Assessment of quality conformance by the supplier ... 15
6.3 Assessment of quality conformance by the recipient ... 16
6.3.1 General ... 16
6.3.2 Single batch of product ... 16
6.3.3 Multiple batches of product ... 16
6.3.4 Procedure for recipient to assess conformance for a single batch of product ... 17

7 Dispute procedure ... **18**
7.1 Resolve dispute by negotiation ... 18
7.2 Use of the test method or procedure in case of dispute ... 18
7.3 Dispute resolution procedure ... 19
7.4 Dispute unresolved ... 19
7.5 Example of a dispute resolution ... 21

Annex A (informative) **Explanation of formulae given in Clause 4** ... **22**

Annex B (informative) **Dispute resolution for specifications based on a specified degree of criticality** ... **25**

Annex C (informative) **Statistical control in the execution of test methods by a laboratory** ... **28**

Annex D (informative) **General approach to bias assessment using multiple materials** ... **30**

Annex E (informative) **Glossary** ... **31**

Bibliography ... **32**