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AMENDMENT 1
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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**

**(standards.iteh.ai)
AMENDMENT 1**

ISO 4259-2:2017/Amd 1:2019

<https://standards.iteh.ai/standards/iso/4259-2/4259-2:2017/Amd1:2019>
**Produits pétroliers et connexes — Fidélité des méthodes de mesure et
de leurs résultats —**

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

AMENDEMENT 1



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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*.

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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

AMENDMENT 1

3.1

Replace the term "proficiency testing program" with "proficiency testing scheme".

3.1

Replace the abbreviated term "PTP" with "PTS",

and apply throughout the document, except for 6.3.4, fourth paragraph, second sentence, where "PTP schemes" shall be replaced with "PT schemes" so that it reads:

Both are able to confirm and demonstrate that the results came from laboratories that have in-house SQC programs that are in control with respect to precision and bias for testing using ISO 5164 and that they regularly participate in industry PT schemes to confirm a lack of bias versus industry averages.

4.4.1, last sentence

Replace "Proficiency Testing Programs (PTP)" with "Proficiency Testing Schemes (PTS)" so that it reads:

For example, results collected through Proficiency Testing Schemes (PTS) for different test methods using the same sample can be analysed in this fashion.

Formula (16)

Replace " L_i " with " L_A " in the commentary text so that the definition of the variable Y_A reads:

Y_A is the average from L_A results for property C for a material using Test Method A, where each result is a single result obtained under reproducibility conditions;

Replace "property A" with "property C" in the commentary text so that the definition of the variable Y_B reads:

Y_B is the average from L_B results for property C using Test Method B on the same material tested by Test Method A, where each result is a single result obtained under reproducibility conditions;

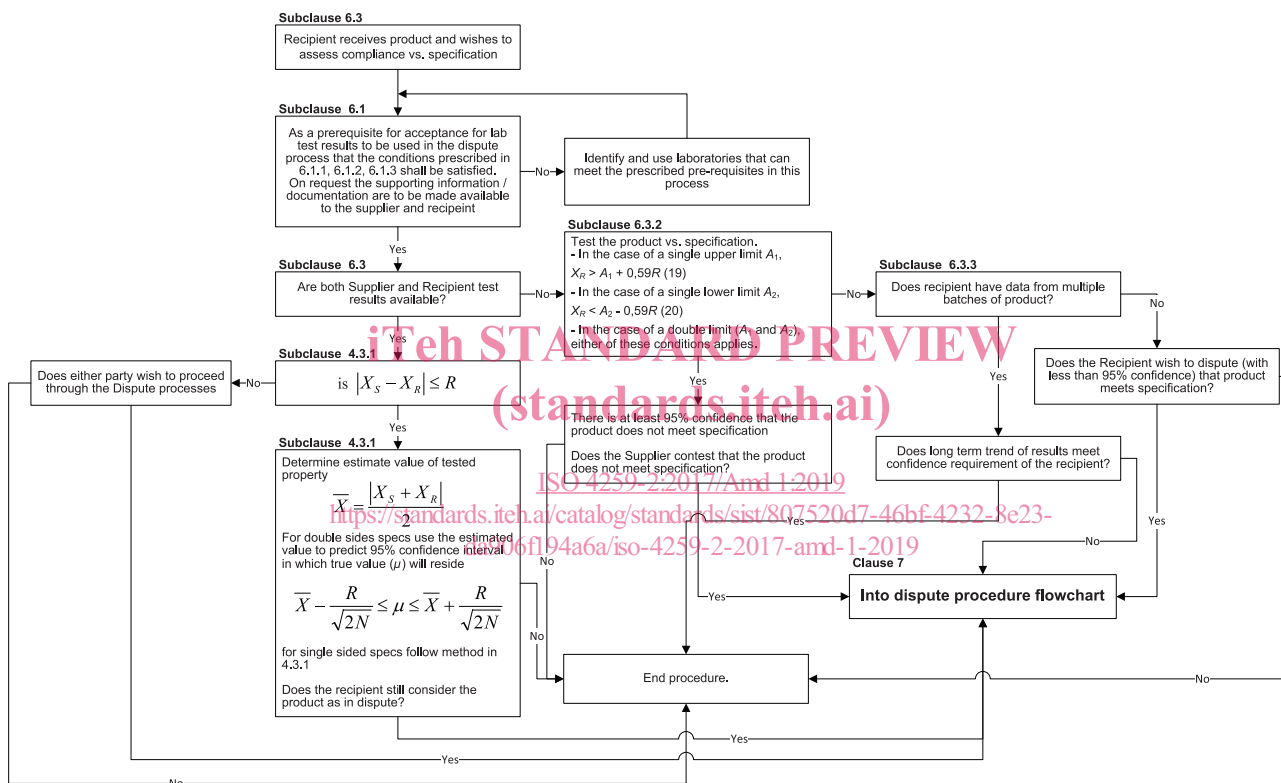
4.4.2, last paragraph

Replace "Test Method 1 and Test Method 2" with "Test Method A and Test Method B" so that it reads:

If $Z > 2$, it shall be concluded, with 95 % confidence, that a constant bias correction statistically improves the degree of agreement between Test Method A and Test Method B for property C for this material.

Figure 2

Replace with the following figure:



6.3.4, first paragraph, last sentence

Replace the sentence with the following:

The reproducibility of RON using this method is 0,7 RON at the EN 228 specification of 95,0 ON (octane number) and the repeatability at the same level is 0,2 ON.

6.3.4, second paragraph, second sentence

Replace the sentence with the following:

The supplier RON result is 95,1 against the specification of 95,0 and the batch is sold Free On Board (FOB).

6.3.4, *third paragraph, second sentence*

Replace "6.3.1" with "6.3.2" so that it reads:

Subclause 6.3.2 indicates that the product fails the specification limit with 95 % confidence only if it exceeds the specification by an amount greater than $0,59R$; this is not the case for this example.

6.3.4, *fourth paragraph, first sentence*

Replace "6.3.1" with "6.3.2" so that it reads:

In this case, despite the guidance in 6.3.2, the recipient is unhappy with their result and contacts the supplier regarding their result.

6.3.4, *fifth paragraph, list item c), last line*

Replace " $\bar{X} = (95,1 + 94,7)/2 = 94,9$ ON" with " $\bar{X} = (95,1 + 94,7)/2 = 94,9$ ".

6.3.4, *fifth paragraph, list item d), last line*

Replace " $\mu \geq (\bar{X} - 0,42R)$ " with " $\mu \geq (\bar{X} - 0,42R)$ " and " $\mu \geq (94,9 - 0,294)$ or $\mu \geq 94,6$ ON" with " $\mu \geq (94,9 - 0,294)$ or $\mu \geq 94,6$ " so that it reads:

$\mu \geq (\bar{X} - 0,42R)$, that is $\mu \geq (94,9 - 0,294)$ or $\mu \geq 94,6$

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6.3.4, *fifth paragraph, item e), first sentence*

Replace "94,6 ON" with "94,6" so that it reads:

Based on the outcome from d), it can be concluded, with 95 % confidence, that the true value is no worse than 94,6.

6.3.4, *penultimate paragraph*

Replace text with the following:

If only the recipient result is available, then 6.3.2 guides the comparison on conformance to specification and the confidence limit from Formula (9) in this example is simplified to $\mu \geq (X - 0,59R)$

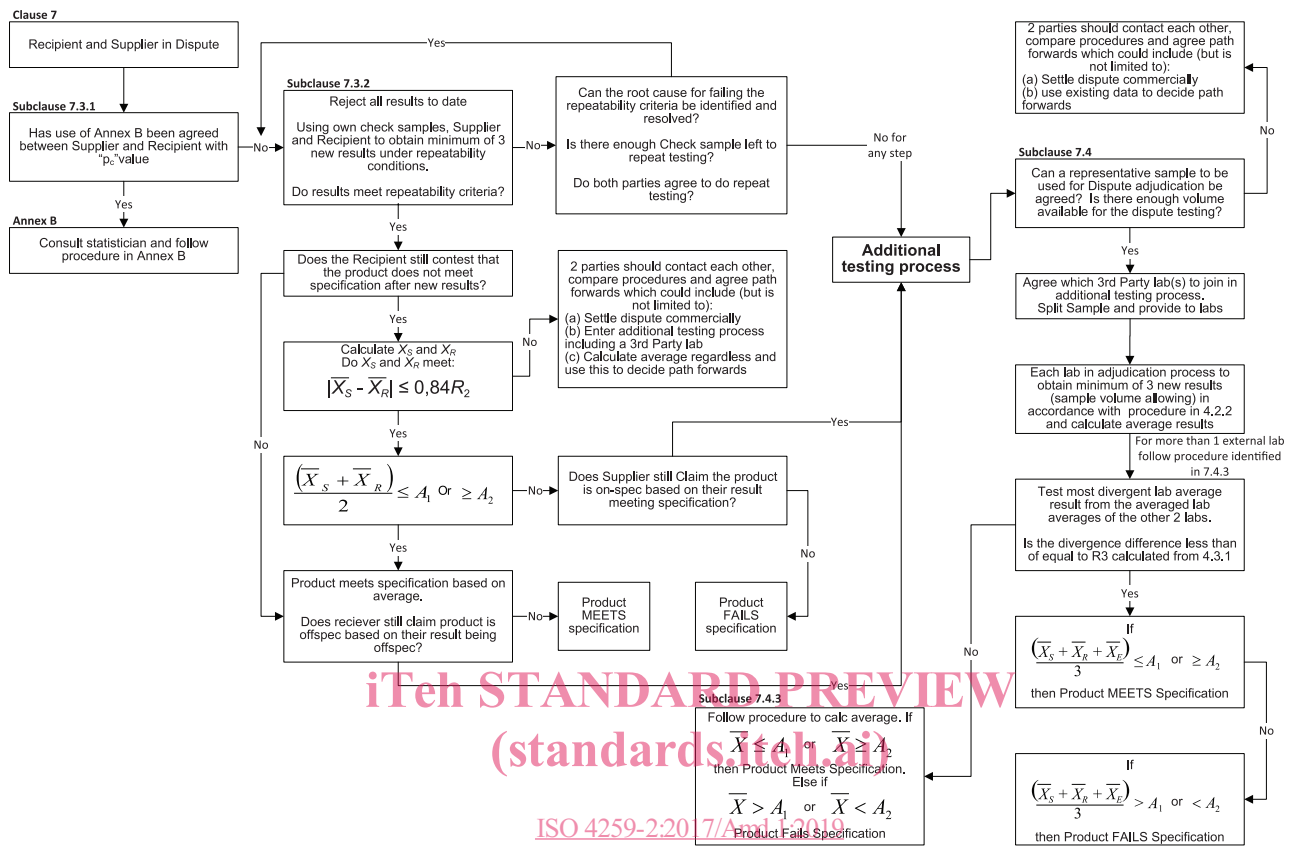
6.3.4, *last paragraph*

Replace "6.3.2" with "6.3.3" so that it reads:

If the recipient had a long-term relationship with the supplier and had data from multiple batches of product, 6.3.3 gives guidance on how to assess whether the confidence of product meeting specification is acceptable.

Figure 3

Replace with the following figure:



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7.5, first sentence

Replace text with the following:

This subclause shows how to evaluate the procedure described so far in Clause 7. It is a continuation of the examples given in 6.3.4 using the same samples, results and customer/supplier.

7.5, sixth paragraph

Replace text with the following:

The differences between the \bar{X}_S and \bar{X}_R averaged results shall meet the reduced reproducibility $0,84 \times R_2$, where R_2 is defined in Formula (21) below.

7.5, seventh paragraph, first sentence

Replace "R₂" with "0,84 × R₂" so that it reads:

Clearly in this example the difference of 0,17 ON between supplier and recipient averages meets the $0,84 \times R_2$ criteria and thus the results are accepted in the dispute process.

Formula (A.2)

Replace the commentary text with the following:

where Z is the factor^[4] for converting a standard deviation to a confidence limit, and which corresponds in this case to a double-sided 95 % probability level, having a value of 1,96. Table A.1 gives the critical values, Z , corresponding to a single sided probability, p , or to a double sided significance level $2(1 - p)$.

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