EKOTEKS

LABORATORY AND INSPECTION SERVICES INC.

PROFICIENCY TESTING PROTOCOL

Content

1. PURPOSE

Proficiency tests are organized by the EKOTEKS according to ISO/IEC 17043 and ISO 13528 standards in order to ensure the validity of the test/analysis results and to enable laboratories to monitor their own performance by comparing their results with the results of other laboratories. Specific objectives in the organization of proficiency tests:

- Evaluating the performance of laboratories for specific experiments or measurements and observing the continuity of performance,
- Participation of laboratories in proficiency tests in certain periods and consideration of their performance is a requirement for accreditation bodies,
- Enabling the laboratories to see their measurement performance, areas where they are strong or weak,
- Finding the opportunity to compare themselves with other laboratories,
- Ensuring the effectiveness and comparability of test or measurement methods

In this context: it is aimed to evaluate and improve the performance of laboratories and contribute to the accreditation processes of the test methods they apply.

2. SCOPE

This protocol describes the organization of proficiency testing organized by EKOTEKS Laboratory, selection and preparation of samples to be used in the studies, evaluation of participant results and performance, reporting of results, confidentiality and impartiality, participants' right to object to the process.

3. CONTACT DETAILS

Organized by:	Ekoteks Laboratory and Inspection Services Inc.
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4. QUALITY SYSTEM

ISO/IEC 17025:2017 and ISO/IEC 17043:2023 quality systems are applied in EKOTEKS Laboratory. ISO 13528:2022 is followed for statistical calculations and analyses.

All processes are organized by the ILC/PT Manager. The ILC/PT Manager is responsible for planning the organization, evaluation of the results using statistical methods, statistical evaluation of homogeneity and stability studies and preparation of the report. The Quality Assurance Responsible is responsible for making announcements, collecting applications, collecting results, communicating with the participants, and the Sample Responsible is responsible for sample selection, preparation, homogeneity and stability studies.

5. SUBCONTRACTING

EKOTEKS does not receive subcontract services in the proficiency test studies it organizes.

6. IMPARTIALITY

Proficiency testing activities are carried out by EKOTEKS in an impartial manner. The proficiency test provider is responsible for the impartiality of its proficiency testing activities. It does not allow commercial, financial or other pressures to jeopardize its impartiality and takes measures for this. In order to ensure impartiality, each participant is given a laboratory code (Lab 001, Lab 002, etc.) only by the Quality Assurance Officer and the laboratory code is sent to the participant by e-mail. In the Proficiency Testing Result Report sent to the laboratories, the results are given with the laboratory codes determined for each laboratory and the laboratories check their results according to their own codes. Statistical calculations and performance evaluations are calculated and evaluated only according to the laboratory code. In cycles in which EKOTEKS participates, EKOTEKS is obliged to report its results before all participants. The assigned value for the round is calculated on the consensus value obtained from the participant results. The personnel who prepare the samples, carry out homogeneity and stability studies and the personnel who participate in the proficiency test are separated.

7. CONFIDENTIALITY

Proficiency testing organized by EKOTEKS are based on the confidentiality of customer information. Participant information (company details, proficiency test results, and reports) is kept confidential between the participant and EKOTEKS unless there are special agreements made with the participant or if the participant makes the information public. The participant is notified in advance by email about information to be made public and agrees that all confidential information shared may be disclosed upon request from legal authorities (official letter, TURKAK, etc.). This is guaranteed by the contract.

8. FRAUD OR FALSIFICATION OF RESULTS

It is aimed to prevent fraud or falsification of results between participating laboratories in proficiency testing studies. In this context;

- Participants are given different participant codes by the Quality Assurance Responsible when they participate in the round and participants follow their results in the reports with this code.
- Only the Quality Assurance Responsible can see the participant codes and participant mappings.
- Information e-mails that should be sent simultaneously are sent to the participants as confidential information. Thus, participants are prevented from having information about other participants.
- The assigned value is not shared with any laboratory before the reporting date.
- After the report is shared, the results are not accepted from the participants and are not included in the report.
- In round in which EKOTEKS participates, EKOTEKS has to report results before other participants.

9. PARTICIPANT CRITERIA

All laboratories that want to prove themselves to legal organizations, accreditation bodies or their customers can participate in the proficiency testing programs organized by EKOTEKS. The minimum number of participants is 3.

10. PROGRAMME FEE AND PAYMENTS

The fees for the proficiency testing organized by EKOTEKS are notified to the relevant participants in the application form. An invoice is issued to the relevant participants before the sample is sent. Samples and reports are not sent to participants who do not pay. The participant must make cancellation requests before sample submission. Cancellation requests made after sample submission will be invalid.

11. PROFICIENCY TESTING FLOWCHART

At the planning meeting at the end of the year, round are planned in line with the needs. All rounds are organized as shown in the flowchart below.

Planning

- Round planning is carried out.
- Sample criteria appropriate for the methods are determined.
- Documents are created.

Participation and Application

- Round announcements are made.
- Applications are received via email with the application form.

Preparation, Verification, and Dispatch of the Test Sample

- The sample is commercially procured or produced by the laboratory according to the method.
- The samples are prepared, packed under appropriate conditions, and labeled.
- Homogeneity and stability studies of the samples are conducted, and the results are evaluated.
- Work instructions are created.
- The work instructions are sent to participants via email.
- The samples are sent to participants by courier, and a notification email is sent.

Analysis and Submission of Results by Participants

- Participants notify Ekoteks by email when the sample is received.
- The last result submission date is communicated to participants via email.
- A reminder email is sent to participants who have not submitted results one day before the deadline.
- Participants send their results to EKOTEKS via email.

Evaluation of Results and Reporting

- A preliminary evaluation of the collected results is conducted, and the results are statistically analyzed.
- A performance evaluation is carried out.
- The result report is prepared and shared as a draft with the participants.
- Feedback received within 5 working days is evaluated. If a revision is necessary, the report is revised; otherwise, the final result report is shared.

12. PROFICIENCY TESTING TIME SCHEDULE

The deadlines for the planned round of proficiency tests, sample submission date, final result entry date and reporting date are shared with the participants.

13. NUMBERING OF THE ROUND AND SAMPLES

Round and samples are numbered according to the specified criteria. Rounds are numbered as EKO-YEAR- Program Code-X. Samples are numbered as EKO-YEAR-Program Code-X-SZZ-YY, including the relevant round number. Abbreviations and program codes are listed in the summary table below.

EKO	EKOTEKS
YEAR	Refers to the year in which the round is planned. A round planned in 2024 is indicated as 24.
Program Code	• Toy Tests: TY • Microbiology Tests: M • Flammability Tests: FL • Colorfastness Tests: CF • Physical Tests: PHY • Waste Water Tests: WW • Chemical Tests: CHEM • Chemical Tests-Biocidal: CHEM-B • Chemical Tests-Textile: CHEM-T • Chemical Tests-Cosmetics: CHEM-C • Fiber Analysis: FB
X	Refers to the number of rounds organized from the relevant program in that year. For example, the round organized for the 2nd time in Toy tests in 2024 is coded as EKO-24-TY-2.
SZZ	Specimens in the relevant program are numbered starting from 01. For example, the specimen of type 2 of round 3 of the Microbiology test in 2024 is numbered EKO-24-M-3-S02.
YY	The samples prepared to ensure traceability are numbered sequentially. For example, if 40 samples are prepared from the 3rd sample of the 1st round of the flammability test planned in 2024, they are numbered as EKO-24-FL-1-S03-01, EKO-24-FL-1-S03-02....., EKO-24-FL-1-S03-40.

14. SAMPLE SELECTION, PREPARATION AND SUBMISSION

Sample criteria suitable for the methods in the organized round are determined. Proficiency testing specimens are selected according to these criteria. Samples suitable for the test method can be purchased commercially or suitable samples can be produced and prepared in the laboratory by Sample Responsible who are a technical expert. The prepared specimens shall be packaged and numbered in accordance with the test method in such a way that they will not be damaged. Numbering is done in the order of how many samples are prepared to include the relevant round code. After the samples are sent, information is sent by e-mail and EKOTEKS is requested to be notified by e-mail that the samples have arrived undamaged. If

there is no return from the participants within 5 working days, the samples are considered to be delivered intact.

15. HOMOGENEITY AND STABILITY

15.1. Ensuring Homogeneity in Quantitative Analyses

In quantitative results, after checking the homogeneity data with the Grubbs test, the ss value is found using the formulae in ISO 13528 Annex B, item 3.

g samples are randomly selected (g ≥ 10) and each sample is divided into m equal parts and analyzed (m ≥ 2). If the samples cannot be divided, 20 samples are randomly selected, and the standard deviation of the analysis results is used.

The homogeneity assessment is based on the following comparison of the s_s value in ISO 13528 Annex B.

$$S_s < 0{,}3 * \sigma_{pt}$$
$$S_s < 0{,}1 * \delta_E$$

σ_{pt}: Standard deviation for proficiency assessment

Ss: Estimate of between-sample standard deviation

δ_E: Maximum permissible error criterion for differences

If the above formula is not met and the proficiency test sample is not homogenous:

- The between-sample standard deviation can be expanded by including s_s
  $\sigma'_{pt} = \sqrt{\sigma_{pt}^2 + s_s^2}$
- The z' score can be calculated by adding s_s in the uncertainty of the assigned value.
- σ_{pt} s_s can be obtained by expanding it in a controlled manner if it is obtained from participant results.

Note1: In round where the assigned value and standard deviation are obtained from the participant results, it can be assumed that the assigned value is within uncertainty by assuming that the homogeneity spreads to all participants without applying homogeneity.

15.2. Ensuring Homogeneity in Qualitative and Semi-Quantitative Analyses

g samples are randomly selected (g ≥ 10) and each sample is divided into m equal parts and analyzed (m ≥ 2). If the samples cannot be divided, 20 samples are randomly selected and analyzed.

In analyses such as presence/absence, yes/no, 5% error is allowed at 95% confidence interval. If the result of 1 of 20 homogeneity studies is different, the analysis is repeated and checked by a different person. If it is not suitable again, 20 more samples are taken and analyzed. In analyses where semi-quantitative grading is used, the absolute difference between the results is expected to be no more than 0.5 grade.

15.3. Ensuring Stability in Quantitative Analyses

Stability of the samples is carried out at the earliest 1 day before the final result entry date.

For stability analyses, 2 samples and a total of 4 data are averaged and evaluated as m=2 g=2. If stability is to be applied without homogeneity in the relevant round, 2 samples and 4 data in total are analyzed and averaged before the round.

Stability assessment is achieved by comparing the absolute value of the difference of the means of the data obtained in stability analyses from the homogeneity mean or the mean of the preliminary stability analysis.

$$|\overline{y_1} - \overline{y_2}| \leq 0{,}3 * \sigma_{pt}$$
$$|\overline{y_1} - \overline{y_2}| \leq 0{,}1 * \delta_E$$

$\overline{y_1} = Pre - Round\ Stability\ Average$
$\overline{y_2} = After\ round\ Stability\ Average$
$\sigma_{pt} = Standard\ Deviation$
$\delta_E = Maximum\ permissible\ error\ criterion\ for\ differences$

If the criterion in Formula is not met, the following options should be considered:

- The uncertainty can be identified and added to the assigned value uncertainty.
- $|\overline{y_1} - \overline{y_2}| < 0{,}3 * \sigma_{pt} + 2 * \sqrt{u^2(\overline{y_1}) + u^2(\overline{y_2})}$ The acceptance criterion can be extended with the formula.
- Improvements can be made by checking the sample preparation steps.
- The program can be repeated.

15.4. Ensuring Stability in Qualitative and Semi-Quantitative Analyses

Stability analyses of the samples are performed at the earliest 1 day before the final result entry date. For stability analyses, 2 samples with m=2 and g=2 are evaluated by averaging a total of 4 data. If stability is to be applied without homogeneity in the relevant round, 2 samples and 4 data in total are analyzed and averaged before the round.

Stability test results for qualitative analyses:

- It is expected to be the same in analyses such as presence/absence

- In semi-quantitative analyses (grading), a maximum ±0.5 grade difference is expected.

If the stability is not favorable, the round is repeated.

The control to ensure stability due to transport is not applied to samples that will not be affected by temperature and storage conditions. For sample types that will be affected by temperature and storage conditions, control is provided by simulating transport and storage once. The expected round deviation in the control or the expected value for qualitative tests is determined by experts.

Under extreme conditions (hottest time in summer and coldest time in winter), the sample is shipped to the furthest possible service point, recalled and analyzed. 4 samples for quantitative and 2 samples for qualitative analyses are sufficient**.**

16. STATISTICAL DESIGN

16.1. Data Transfer and First Checks

Data transfers in proficiency test programs are performed as follows:

- The results of the homogeneity studies are recorded on the Homogeneity Studies Results form by the relevant sample officer and forwarded to the ILC/PT Manager.
- The results are collected from the participants by the Quality Assurance Responsible via e-mail with the Result Notification Form. The Quality Assurance Responsible gives codes to the laboratories to ensure confidentiality and impartiality and transmits the results to the ILC/PT Manager. Laboratory codes are realized by adding a LAB prefix such as "LAB 001" and a number in the form of "001". Only the Quality Assurance Responsible has the participant laboratory code match. This information is not shared with anyone other than the Quality Assurance Responsible during the reporting period. After the round is completed, other personnel can also access the participant matching information in accordance with the task backup, which is no longer important for an archived report.
- The results are first checked for any unit error or precision error.
- The results of the stability studies are entered into the Stability Studies Results form by the relevant sample responsible and forwarded to the ILC/PT Manager.
- Homogeneity, stability and analysis results are calculated and recorded under the system by the ILC/PT Manager. Performance analyses are performed by the ILC/PT Manager by calculating the relevant data.
- The data and information are processed, and a report is prepared by the ILC/PT Manager.
- The prepared proficiency test report is checked and approved by the Quality Assurance Manager.

16.2. Outlier Checking

The first thing to do when working with data arrays is to check whether the data array is normally distributed. ROBUST statistical methods are used in data series that do not show

normal distribution. It is the duty of the statistical operations officer to exclude deviating values from the calculations or to decide on robust operations. Exclusion or retention of deviating values is decided according to the general structure of the data series, e.g. if there are 3 deviating values in a data series with 14 data, there is no point in excluding them from the calculation since the robust method will be used when it is reduced to 11 data.
If there is no deviant value, the statistical evaluation is continued with non-robust techniques if the number of participants is appropriate.

16.2.1. Chauvenet Test

The Chauvenet test is an outlier test, the "C" value is calculated for each data using the formula below and compared with the C critical value, if $C<C_{critical}$, the value is not an outlier, otherwise it is marked as an outlier.

16.2.2. Quantitative Proficiency Tests

The following methods can be used to select the assigned value;

- Average
- Median
- Hampel method
- Algorithm A
- CRM Value

16.2.2.1. Average

After the results from the participants are evaluated with the outlier value tests, the arithmetic mean is used as the assigned value with the condition of p>12 in data groups where there is no outlier value.

$$Average = \frac{1}{p}\sum_{0}^{p} x_i$$

- p=Total Number of data
- x_i =Each data

16.2.2.2. Median

For data groups with p<12 and less than 20% outlier values, the median is used as the assigned value.

$$med_{(x)} = \begin{cases} x_{(p/2)} & p\ Odd \\ \frac{3_{(p/2)}+5_{(1+p/2)}}{2} & p\ Even \end{cases}$$

- $Med_{(x)}$ = median of x values
- All data is sorted from smallest to largest (x_n is the largest value)
- p=Total number of data
- x_i =Each data

16.2.2.3. Hampel Method

The Hampel method is used when p<12 and the outlier value ratio is greater than 20% (max 50%). The average is calculated via the web application given in ISO 13528 reference 37,

"http://quodata.de/en/web-services/QHampel.html" (ISO 13528 source 37)

16.2.2.4. Algorithm A

Algorithm A is used for data sets with p>12 and outlier values. Calculated according to ISO 13528 Annex C.

16.2.2.5. CRM Value

If CRM is used as the round sample, the value in the CRM certificate is used as the assigned value. The relevant CRM information is shared with the participants in the report.

16.2.3. Qualitative Proficiency Tests and Semi-Quantitative Analyses

Qualitative Proficiency tests are a type of test that has no numerical equivalent or is very limited even if it has a numerical equivalent. As a result, they are rounds that define the specific feature of the test sample in a restrictive amount such as present / absent, Pass / Fail or red / white / blue or visually graded. The value assigned in these rounds can be determined as follows:

- Expert Opinion
- Use of Reference Material
- Mode Value (Most frequently repeated value) obtained from Participant Results
- Median from Participant Results (Median is only suitable for ordinal values)

16.3. Determining Dispersion (σ_{pt})

In quantitative analyses, the following methods can be used for distribution selection:

- Standard Deviation
- MADe
- M-estimator
- Q_n method
- Algorithm A
- CRM Value

16.3.1. Standard Deviation

After the results from the participants are evaluated with the deviant value tests, the standard deviation is used as the distribution value with the condition of p>12 in the data groups where there is no outlier value.

$$Standard\ Deviation\ (sample) = \sqrt{\frac{1}{p-1}\sum_{1}^{p}(xi - \bar{x})^2}$$

- p=Total number of data
- x_i =Each data
- $\bar{x}$= Average

16.3.2. MADe (scaled)

MAD_e is a robust distribution calculation method generated from the median. MAD_e is used as the assigned value in data groups with p<12 and less than 20% outlier values.

$$d_i = \left|x_i - med_{(x)}\right|$$

$$MADe_{(x)} = 1{,}483x\text{med}_{(di)}$$

- $Med_{(x)}$ = Median of x values
- d_i = Absolute differences of the median of all values
- x_i =Each data
- $med_{(di)}$ = median of the absolute differences obtained

16.3.3. M-estimator

M-estimator management is used for data sets with p ≤ 4 ≤ p <12 and outlier values.

$$s^* = \frac{1}{0{,}798 \times p}\sum_{i=1}^{p}\left|x_i - med\ (x)\right|$$

16.3.4. Qn Method

Q_n method is used when p<12 and the outlier value ratio is greater than 20% (max. 50%) The average is calculated using the web application given in ISO 13528 reference 37,

"http://quodata.de/en/web-services/QHampel.html" (ISO 13528 source 37)

16.3.5. Algorithm A

Algorithm A is used for data sets with p>12 and outlier values. Calculated according to ISO 13528 Annex C.

16.3.6. CRM Value

If CRM is used as the round sample, the distribution value in the CRM certificate is used. The relevant CRM information is shared with the participants in the report.

In qualitative analyses, standard deviation cannot be calculated.

16.4. Uncertainty of Assigned Value $(u)_{xpt}$

In Quantitative Analyses:

After the assigned value is determined, the uncertainty of the assigned value is defined to define the range of this value,

Except for robust methods,

$u_{xpt} = \frac{\sigma_{pt}}{\sqrt{p}}$ The formula is used.

- u_{xpt} = Assigned value uncertainty
- p = Number of participants
- σ_{pt} =Standard Deviation (dispersion)

Robust methods;

$u_{xpt} = 1{,}25x\frac{\sigma_{pt}}{\sqrt{p}}$ The formula is used.

- u_{xpt} = Uncertainty of Assigned Value
- p = Number of Participants
- σ_{pt} =Standard Deviation (dispersion)

The evaluation of the assigned value uncertainty is defined in the score calculation section.

In qualitative analyses, the assigned value uncertainty cannot be calculated.

17. Analysis Of Data

17.1. Evaluation of Quantitative Results

17.1.1. z score

The z score is an indicator of the closeness of the participant's value to the assigned value.

$$z = \frac{x_i - x_{pt}}{\sigma_{pt}}$$

17.1.2. z' Score

The score z' (z prime) is given when $u(_{xpt}) > 0.3\sigma_{pt}$.

$$z' = \frac{x_i - x_{pt}}{\sqrt{\sigma_{pt}^2 + u_{xpt}^2}}$$

Note: The expansion factor does not necessarily have to be Uxpt, for homogeneity or stability non-conformity, the Z' score is again used as a result of expanding the σ_{pt} value.

In this case;

$$z' = \frac{x_i - x_{pt}}{\sqrt{\sigma_{pt}^2 + u_{xpt}^2 + u_2^2}}$$

The uncertainty u_2 in this equation can be a homogeneity deviation (Ss) or a stability expansion (proportional).

The evaluation of the scores is as follows:

- $|z| \leq 2$,0 Acceptable
- $2,0 < |z| < 3,0$ Questionable
- $|z| \geq 3.0$ Unacceptable

17.2. Evaluation of Qualitative and Semi-Quantitative Results

Evaluation statistics such as z, z' score are not suitable for qualitative or semi-quantitative results, these results are evaluated as follows:

- In semi-quantitative analyzes with a rating of 1-5, the result is expected to be ±0.5 degrees away from the assigned value.

  $|x_i - x_{pt}| \leq 0.5$ Acceptable

  $|x_i - x_{pt}| > 0,5$ Unacceptable

  xi: Participant Result

  x_{pt} : Assigned Value

- In qualitative analyses without numerical results, these are round that define the specific property of the test sample in a restrictive amount such as present/absent, pass/fail or red/white/blue. In these rounds, the participant results are expected to be the same as the assigned value.
- In chemical and wastewater tests with sub-substances, the substances contained in the sample are not specified to the participant. Participants are expected to search for all

sub-substances by giving lower limits and upper limits. Numerical results are given to the substances present by the participant, and ND (Not detected) is given to non-existent substances. Numerical results are evaluated quantitatively, and ND results are evaluated qualitatively. Laboratories that find results below the lower limit are asked to report the results as ND for statistically correct evaluation.

EKOTEKS determines the statistical methods according to the table below.

Evaluation Type	Number of Participants	Outlier Control	Outlier Decision	Assigned Value	Standard Deviation	Measurement Uncertainty	Performance Score
Quantitative	p=3	Chauvenet	Hold	Median	MAde	$1{,}25*s/\sqrt{n}$	z-z'
	P=4	Chauvenet	Hold	Median	M-estimator	$1{,}25*s/\sqrt{n}$	z-z'
	4<P<12	Chauvenet	Hold	Median	M-estimator	$1{,}25*s/\sqrt{n}$	z-z'
	4<P	Chauvenet	Hold s>50	Hampel	Q Method	$1{,}25*s/\sqrt{n}$	z-z'
	p>12	Chauvenet	Hold	Algorithm A	Algorithm A	$1{,}25*s/\sqrt{n}$	z-z'
	p>12	Chauvenet	Remove	Average	Standard Deviation	$1*s/\sqrt{n}$	z-z'
Qualitative (Present-Absent analysis)	p≥3	-	-	Mod	-	-	-
Sem-Quantitative (Rating Visual assessment)	p≥3	-	-	Mod	-	-	-

18. REPORTING

Proficiency test reports are e-mailed to the participants in draft form by specifying the laboratory code 1 month after the last result entry date, unless otherwise. This period may be delayed by 2 weeks considering the disruptions. Participants are informed in case of disruption. The draft report is published by adding D in addition to the report code. Participants are expected to check their results within 5 working days. If errors are detected as a result of revising the reports according to the participant feedback, necessary arrangements are made in the reports and the final report is published. The objection to the final report is 10 working days. If errors are detected as a result of reviewing the reports again according to participant feedback, necessary arrangements are made in the reports and revision reports are published with a code indicating the revision such as R1 in addition to the report code. This error may be a typographical error, an error in the transfer of data, the results may not be transferred correctly or not transferred at all. Since the value assigned in the draft report is submitted, it is not possible to change the results.

The EKOTEKS Proficiency Testing Report contains the following information:

- Information about the round
- Information on proficiency testing specimens
- Contact details
- Confidentiality and Impartiality
- Homogeneity and Stability
- Statistical Design
- Performance Evaluation
- Graphs
- Comments

19. HANDLING OF COMPLAINTS, OBJECTIONS AND REQUESTS

Participants can submit their complaints, appeals, and requests via email to pt@ekoteks.com or through the Contact section on www.ekoteks.com. All notifications are recorded as customer feedback and will be reviewed. If the complaint or appeal is related to proficiency testing samples, investigations will be conducted concerning the distributed samples. If faulty samples are identified, participants are informed, the nonconforming samples are requested to be returned, and a new sample will be sent.

If errors are detected as a result of the review of the reports, the reports are withdrawn, and a revised report is published.

If the participant's objection or complaint is not found appropriate, the relevant reasons will be notified to the participant by e-mail. Participants can submit any requests to pt@ekoteks.com, and feedback regarding the fulfillment of their requests will be provided via email, either positive or negative.

20. REFERENCES

- ISO/IEC 17043:2023 Conformity assessment - General requirements for the competence of proficiency testing providersing
- TS EN ISO / IEC 17025: 2017, General requirements for the competence of testing and calibration laboratories
- ISO 13528:2022 Statistical methods for use in proficiency testing by interlaboratory comparison
- IUPAC/ISO/AOAC International Harmonized Protocol for the Proficiency Testing of Chemistry Laboratories, 2006.
- EA-4/21 INF: 2018 Guidelines for the assessment of the appropriateness of small interlaboratory comparisons within the process of laboratory accreditation.
- EA-4/18 G: 2021 Guidance on the level and frequency of proficiency testing participation
- (https://quodata.de/en/content/qhampel-webtool-0)