



ITAK

**PROFICIENCY TEST PLAN
FOR RARE EARTH ORE ANALYSIS**

2026

ACCREDITATION

ITAK – Instituto de Tecnologia August Kekulé is an ISO/IEC 17043 Proficiency Testing provider for the following matrices: Iron Ore, Gold Ore, Copper Ore and Concentrates, Nickel Ore, Silver, Ferroniobium, Phosphate Rock and Phosphate Concentrate, and Bauxite, which are accredited by “Coordenação Geral de Acreditação do Inmetro (Cgcre)”, ISO/IEC 17043 (PEP-0021).

Seeking to expand this important work to other matrices, **ITAK** is launching in **2026**, two rounds of the **Proficiency Test Program for Rare Earth Ore analysis and** invites the laboratories of such markets to join the group of participants. We aim to provide continuous improvement practices in performing chemical analyses to our customers worldwide.

BENEFITS

Besides being an impartial tool for assessing laboratory performance, participation in proficiency tests has several benefits, such as:

- ✓ Adherence to one of the requirements of **ISO/IEC 17025** for companies already Accredited or searching for accreditation on this ISO standard or other quality systems.
- ✓ Increased metrological reliability of the results obtained by the laboratory from their levels of precision and accuracy.
- ✓ Comparison with other industry laboratories and find improvement opportunities to increase performance level (benchmarking);
- ✓ The opportunity for evaluation and comparison of methodologies, seeking one that best suits the level of accuracy required for specific parameters and levels.
- ✓ Awareness of the type of deviations that may be made by the laboratory (systematic or random), guiding actions to eliminate/minimise them;
- ✓ Identify staff training needs; and/or normalisation or improvement of analytical methods.

CONFIDENTIALITY

All information regarding Proficiency Test participants is treated as confidential and proprietary to the client. The only publicly available information in each round's report is the names of the participants. A confidentiality agreement with ITAK binds individuals who have access to this information.

If we receive information about the participant from sources other than the participant, such as a complainant or regulatory authority, ITAK will ensure that this information remains confidential. The identities of these sources will remain confidential and will not be disclosed to the participant unless the source consents to share that information.

According to the confidentiality protocol implemented by ITAK, laboratories are assigned distinct numerical codes. Each participant is granted access exclusively to their code, effectively preventing any possibility of collusion among participants. In case of any suspected collusion, the Program's coordination team will conduct a thorough investigation and take appropriate action.

The report for each round includes a list of participants, excluding lab codes to maintain confidentiality. By confirming participation, the laboratory agrees to have your name included in the report. If you prefer not to have your name mentioned, please inform us via email at interlab@itak.com.br.

Participating laboratories understand and agree that ITAK may utilise their reported results for the characterisation of reference materials used as test items in the Proficiency Tests. Confidentiality will always be maintained.

STATISTICAL TREATMENT

The choice of method to obtain the assigned value, the standard deviation for proficiency assessment, and the estimated uncertainty of the proficiency test will depend on the number of participants and data consistency, utilising statistical approaches and techniques from the ISO 5725, ISO 17043, and ISO 13528 series standards.

If this Proficiency Test uses a Statistical model with assigned values and Standard deviation from Certified Reference Materials, a minimum number of participants is not required.

If the Proficiency Test uses a Statistical model with Consensus values, a minimum of six participants is required.

If the Proficiency Test uses a Statistical model that involves Consensus values from expert participants after removing outliers, a minimum of three participants is required for evaluation.

According to the results of accurate assessments, the performance of the participants can be classified as satisfactory, unsatisfactory, or questionable for each evaluated parameter.

If the participant does not provide complete data for evaluation for some specific analyses, the report will be issued as “insufficient data”.

Each statistical technique has its use limit and is conditioned to the number of participants who report numerically valid results and are approved in the Evaluation and Treatment Outliers.

SAMPLES AND ANALYSES

In 2026, ITAK will launch two (02) rounds of the Proficiency Test for Rare Earth Ore Analyses, each consisting of 10 samples referring to two reference materials of different concentrations (05 sachets containing 10 g each), totalling 10 sachets per round.

The samples used in the Proficiency Testing Program are Reference Materials (RMs) with proven homogeneity and stability. RMs are produced by ITAK following the ISO 9001 Quality Management System and ISO quality protocols (ISO Series Guide 30 to 35) and ISO 17034 - General requirements for the competence of reference materials producers.

It is the participant's responsibility to follow up and clarify the shipment through customs or the carrier when it is required. If samples come back to ITAK because of incorrect address information or because the laboratory has not clarified the shipment through customs, ITAK can charge reshipping expenses.

Test items can be shipped by using customer accounts on FedEx, DHL, and UPS carriers.

Along with the samples, there will also be instructions directing the Participating Laboratory on how to treat the samples, carry out the analyses, and report the analytical results.

Any communication about this Proficiency Testing, such as doubts, reporting of results, technical reports, and certificates of participation, is by software at pep.itak.com.br for participating laboratories.

In addition to their test results and methodologies, ITAK PT participants should also report the measurement uncertainties of each analysed parameter (if available). It must be sent as the combined standard uncertainty, without applying any coverage factor, which would make it the Expanded Uncertainty. Such data should be reported in the designated fields of the ITAK Proficiency Test Management System.

Invalid analytical results, such as "less than" or "zero", are not amenable to statistical evaluation. Therefore, in these situations, ITAK will not do the participant performance evaluation.

The participating laboratory is required to undertake one independent determination in each sample, preferably in five different days, analysing one pair per day, employing one or more validated analytical methods. The methods used should be reported with the results. The samples must be analysed as ordinary routine samples of the laboratory, without any special treatment.

The parameters to be determined in each sample are listed below:

(Ce) (g/t), (Dy) (g/t), (Er) (g/t), (Eu) (g/t), (Gd) (g/t), (Ho) (g/t), (La) (g/t), (Lu) (g/t), (Nd) (g/t), (Pr) (g/t), (Sm) (g/t), (Tb) (g/t), (Th) (g/t), (Tm) (g/t), (U) (g/t), (Y) (g/t) and (Yb) (g/t).

The samples will be sent by ITAK from João Monlevade / MG, under the guidance of the Participant Laboratory, using an appropriate way to transport them. In case of loss or damage to any test item, ITAK will evaluate the possibility of replacement, which will depend on how it can be transported and the delivery deadline, so as not to compromise the schedule.

ANALYTICAL METHODS

The Participant should use its routine procedure in Rare Earth Ore Analyses. ITAK suggests the following analytical methods for this Proficiency Test:

- ✓ **(Ce), (Dy), (Er), (Eu), (Gd), (Ho), (La), (Lu), (Nd), (Pr), (Sm), (Tb), (Th), (Tm), (U), (Y) e (Yb):** Multi acid digestion or Fusion and determination by ICPMS or ICPOES.

SCHEDULE

The proposed schedule is outlined below and may be adjusted as needed. The official schedule should be accessed through the proficiency testing system.

Steps of the Program	1 st round	2 nd round
1- Sending invitations	06/Jul	
2-Confirmation of participants	27/Jul	
3- Sending samples to the participants	20/Aug	19/Oct
4- Receiving samples by the participant	07/Sep	06/Nov
5- Completion of the Analyses and reporting the results by the participants	07/Oct	30/Nov
6- Preparation and delivery of the Performance Report to the participants.	30/Oct	11/Dez
7-Registration of appeals	Up to 10 days after the report is submitted	Up to 10 days after the report is submitted
8-Resposta a apelações	Up to 15 days after the filing of the appeal	Up to 15 days after the filing of the appeal

Note: the dates in bold (item 5) must be met to avoid delays in issuing the results, which can compromise the subsequent rounds of the program.

If delays happen, the Program Coordinator must be contacted to evaluate the potential for extending the deadline without jeopardizing the schedule or affecting other participants.

ITAK may close the rounds without the missing results if there are unjustified delays.

For each round, the instructions will be sent along with the samples, with guidelines on how the laboratory should proceed, and specific information about the samples, such as the expected levels of the analyte (s).

REQUIREMENTS FOR PARTICIPATION

The Laboratory interested in participating in the Proficiency Testing Program for Rare Earth Ore Analysis must be a legally responsible organisation with the technical capacity and equipment to carry out the chemical analysis of its scope; complete the registration form on the ITAK website at pep.itak.com.br, confirming its participation until the deadline set in the schedule.

PERFORMANCE REPORT

For each round of the Proficiency Test Program in Rare Earth Ore Analyses, ITAK will issue a personalised digital Interlaboratory Performance Evaluation Report under confidentiality identification for the internal evaluation of the Participant Laboratory and identifying improvement opportunities.

Suppose the participant wants to receive the report of another unit of the same business group. In that case, it must be requested directly to the person in charge or through formal authorisation from the person in charge. Preliminary reports will not be issued.

If required, ITAK may rectify or ratify reports provided that such corrections do not require further statistical processing of data. All rectifications generate a new version and a new report number that will replace the previous version when published and communicated.

If required by law, the performance report can be delivered or presented to the Regulatory Entity or Public Prosecutor's Office without the participant's permission and will be formally and previously communicated.

If it is not possible to deliver the performance report on the planned date, participants will be notified of the delay and the new delivery date.

ITAK Interlaboratory Performance Report is accepted as an ISO/IEC 17025 requirement.

APPEAL

The participant of ITAK's Proficiency Test has the right to appeal against its performance evaluation on the Technical Report.

The participants who have doubts or disagree with the performance evaluation must register their appeal in the "Appeals" field in the Proficiency Test Management System.

Meeting a requirement of ISO/IEC 17043 - Conformity assessment – General requirements for proficiency testing, ITAK has a procedure that manages this process.

INVESTMENT

Request a proposal by email: interlab@itak.com.br

ITAK has an attractive discount policy, such as participation of several units of companies belonging to the same economic group, discounts for laboratories participating in more than one PT, discounts for the purchase of ITAK's CRM, etc.

Find out more by contacting us at: interlab@itak.com.br

All customs duties are participants' responsibility.

ITAK must receive the total amount without any deductions, such as bank fees or taxes applied. It is necessary to take them into account before sending us the payment.

SUBCONTRACT ACTIVITIES

For this PT, homogeneity test analyses of Reference Materials used as samples (test items) can be subcontracted from competent laboratories.

All laboratories are evaluated and qualified in the ITAK's Quality Management System for these analyses, providing results with which, after appropriate statistical treatment, the designated values, standard deviations, and uncertainties are obtained for the Proficiency Test.

COORDINATION TEAM

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