BTEX Proficiency Testing

PT-DAP Web Platform Guide

16/10/2026 – Version 1.0

Executive Summary

The Proficiency Testing – Data Acquisition Platform (PT-DAP) allows participating laboratories to submit, review, and validate their BTEX measurement results, as well as register their instruments and complete the questionnaires required for the exercise.

The data submission process follows five main steps:

1. **Register your instruments**: Before submitting results, laboratories must register all instruments used during the exercise, ensuring that each instrument has a unique identification code.

2. **Calculate and declare the average**: For phase 1 and 2, the reported average concentration (avg) and its associated uncertainty (su and eu) must represent the stabilised concentration during the corresponding measurement step. For phase 3 each average and uncertainty will represent the corresponding 2 hours interval step. The declared average, together with its standard uncertainty (**su**) and expanded uncertainty (**eu**), is submitted through the CSV file. The PT-DAP web platform does not calculate or replace the laboratory's declared average.

3. **Upload all recorded measurements**: All available individual measurement values (from a minimum of one to a maximum of eight, v1–v8) must be included in the CSV file, including those not used to calculate the declared average (**avg**). Recorded measurements must never be omitted simply because they were excluded from the laboratory's average calculation.

4. **Validate the declared average**: After uploading the CSV file, the PT-DAP web interface initially considers all reported measurement values as included in the average calculation. The platform automatically calculates their average and compares it with the average (avg) declared by the laboratory in the CSV file. If the values do not match within the specified validation tolerance, **the declared average is highlighted in red**. Participants can then identify which measurements were used to calculate the declared average by clicking on individual values to exclude or reinclude them. The platform automatically recalculates the average of the selected measurements and updates the validation result.
   Excluded measurements are not deleted or modified in the database. They remain stored and visible in the web interface but are marked as not included in the average calculation.

When the calculated average matches the laboratory's declared average within the permitted validation tolerance, **the average is marked as valid and the red warning is removed**. The permitted tolerance is 1% of the declared average, whichever is greater. This validation procedure does not modify the declared average. **The average concentration originally reported by the laboratory (avg), together with its associated uncertainty, is retained and used for the subsequent proficiency testing performance assessment and inter-laboratory comparison.**

5. **Complete the required questionnaires**: Laboratories must complete the Sampling Methods questionnaire and the applicable technical and Reference Material questionnaires for each registered instrument or sampling method before the submission deadline.

Important – Data integrity and traceability

The average concentration (**avg**) is calculated by the laboratory and submitted through the CSV file. The PT-DAP validation procedure only checks whether the declared average is consistent with the selected individual measurements. It does not replace or modify the laboratory's reported average.

Similarly, excluding an individual measurement during validation does not delete or modify its original value in the database. Excluded measurements remain stored and visible in the Submitted Results report, ensuring that all recorded measurements remain available to the PT coordinator (JRC).

The laboratory's declared average (**avg**) and associated uncertainties (**su** and **eu**) are retained for subsequent proficiency testing performance assessment and inter-laboratory comparison.

All reported measurement steps must have a valid average before the submission process is considered complete.

Data acquisition platform (PT-DAP) for BTEX

General information

The European Commission, in collaboration with the WHO Collaborating Centre for Air Quality Management and Air Pollution Control, regularly organises Intercomparison Exercises (IEs) involving National Air Quality Reference Laboratories (NRLs) in support of the implementation of the European Air Quality Directives.

These exercises aim to harmonise measurement and calibration procedures, assess the accuracy of laboratory measurements, improve the comparability of results and facilitate the exchange of technical expertise among participating laboratories.

During an IE, participating laboratories perform measurements of specified air pollutants according to an established exercise programme. Depending on the exercise, measurements may involve automatic analysers, manual sampling methods and laboratory reference standards.

The PT-DAP web platform supports participating laboratories in managing their instruments, submitting measurement results and completing the questionnaires required for the exercise.

Accessing the exercise

After logging into the PT-DAP platform, participants can access their registered exercises from the exercise list.

Each exercise is represented by an exercise information panel (Figure 1), which provides an overview of the exercise and its current status.

The panel displays the following information:

- **Exercise identification**: the exercise name, code and pollutants covered.
- **Application period**: the dates during which laboratories can apply to participate.
- **Data submission period**: the dates during which measurement results can be submitted.
- **Exercise status**: the current phase of the exercise, such as data submission.

During the data submission period, participants can select Submit to access the exercise's data submission page.

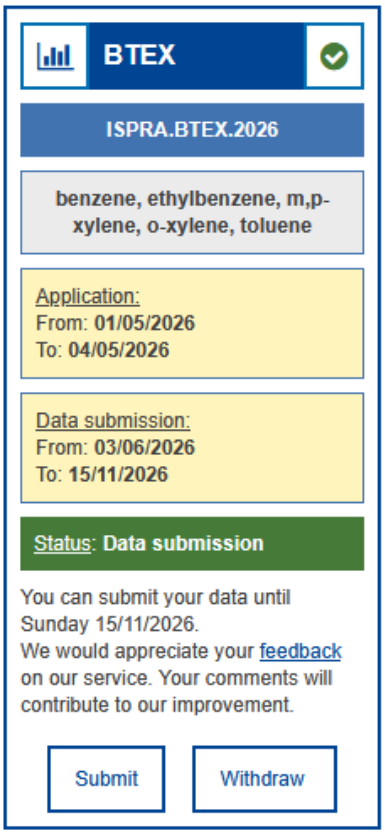


Figure 1

Data submission overview

The PostData page is organised into three main sections, reflecting the activities required to complete the exercise:

1. **Manage Your Instruments** – Register and manage the instruments used to perform the measurements.
2. **Results submission** – Upload measurement results using CSV files and review the submitted data.
3. **Questionnaires** – Complete the questionnaires associated with the instruments and reference materials used during the exercise.

Participants should complete these activities in the order presented, ensuring that the required information and measurement results are correctly submitted before the data submission deadline.

The following sections describe the actions available in each area and the steps required to complete the submission process.

Manage your instruments

Before submitting measurement results, participating laboratories must register the instruments used during the exercise.

From the **PostData** page, select **Manage Your Instruments** to access the **Affiliation's Instruments page** (*Figure 2*).

This page lists the instruments registered for the laboratory's affiliation, including their unique codes, producers, models and associated measurands. Instruments can be added, edited or removed as necessary.

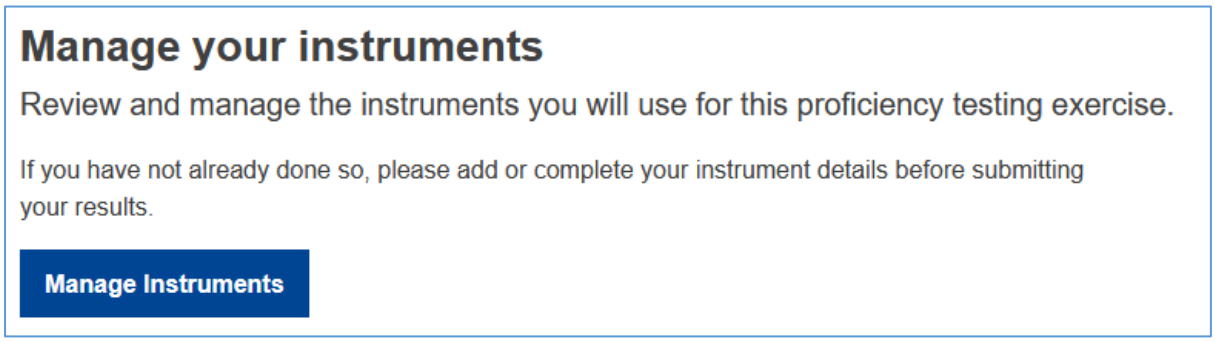


Figure 2 - Manage instruments

Adding an instrument

To register an instrument, follow these steps:

1. Click **Add Instrument** to open the instrument registration page (*Figure 3*).
2. Select the instrument from the available repository. The associated measurands are displayed automatically.
3. Enter a **Unique Code** to identify the instrument within your affiliation (e.g. serial number, inventory number or equipment ID). This field is mandatory.
4. Optionally, enter **Notes** describing the instrument configuration or other relevant information.
5. Click **Add** to save the instrument.

Repeat this procedure for all instruments used during the exercise.

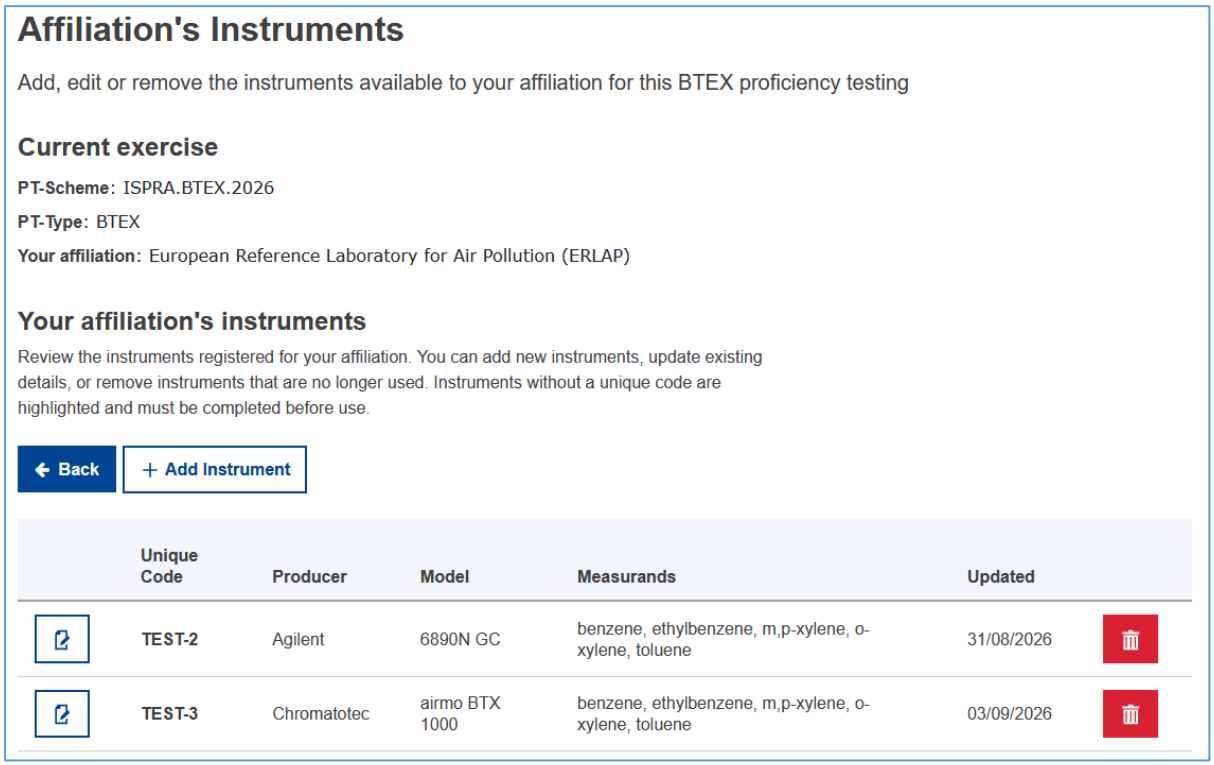


Figure 3 - Affiliation's Instruments page

Managing registered instruments

From the Affiliation's Instruments page, participants can also:

- **Edit** an existing instrument to update its identification details or notes.
- **Remove** an instrument that is no longer required.

Important: Each instrument must have a unique identification code within the affiliation. Instruments without this information must be completed before they can be used for submitting results.

Once the required instruments have been registered, click **Back** to return to the previous page and proceed with Results submission.

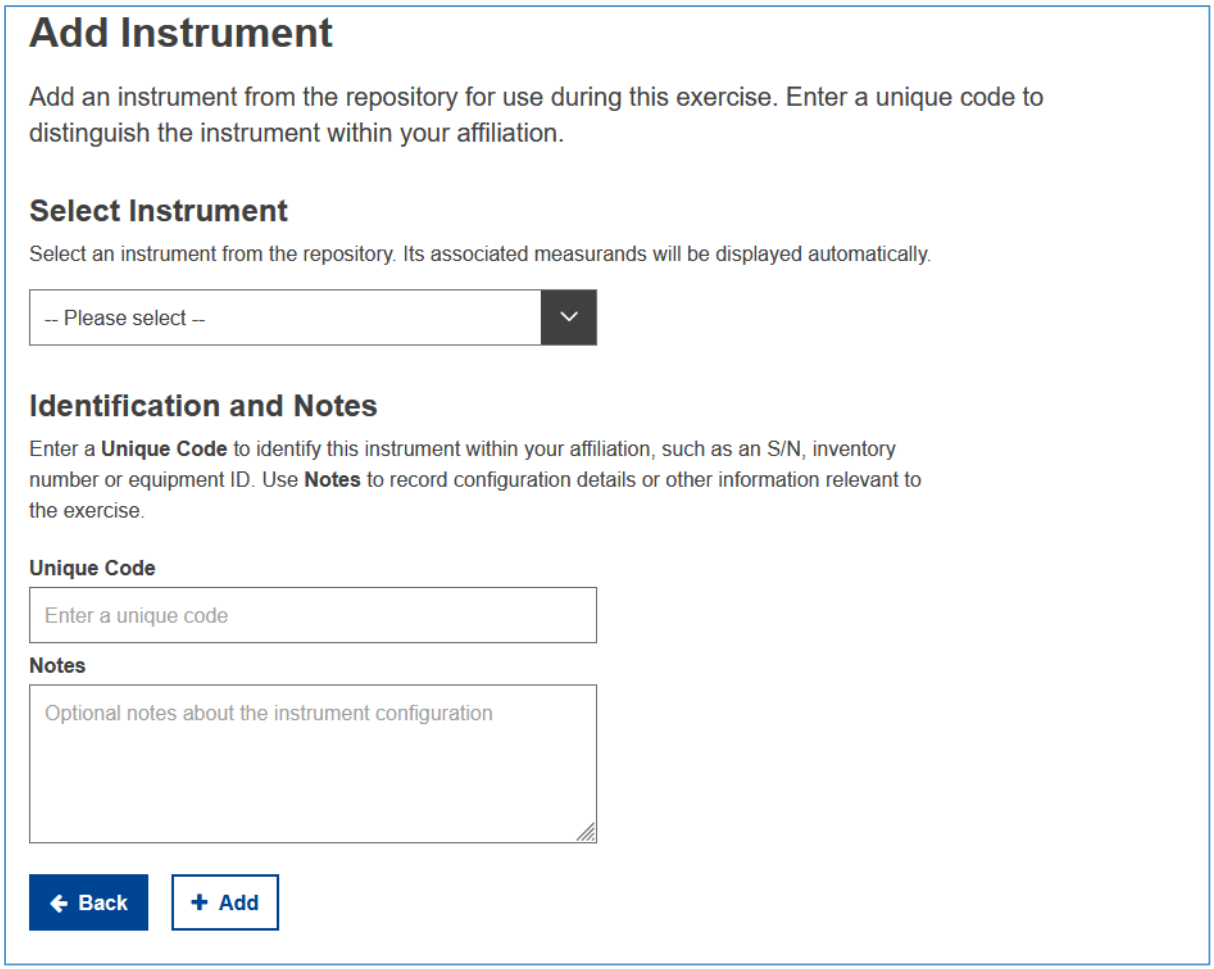


Figure 4 - Add Instrument page

Results submission

Participating laboratories must submit their measurement results for each applicable measurand and instrument combination using a CSV (Comma-Separated Values) file.

From the **PostData** page, locate the **Results submission** section (*Figure 5*) and follow these steps:

1. Select a **measurand** from the first drop-down list.
2. Select the **instrument** used for the measurements from the second drop-down list. Only instruments previously registered for the laboratory are available.
3. Click **Submit** to access the CSV upload page.

Repeat this procedure for each measurand/instrument combination for which results must be submitted.

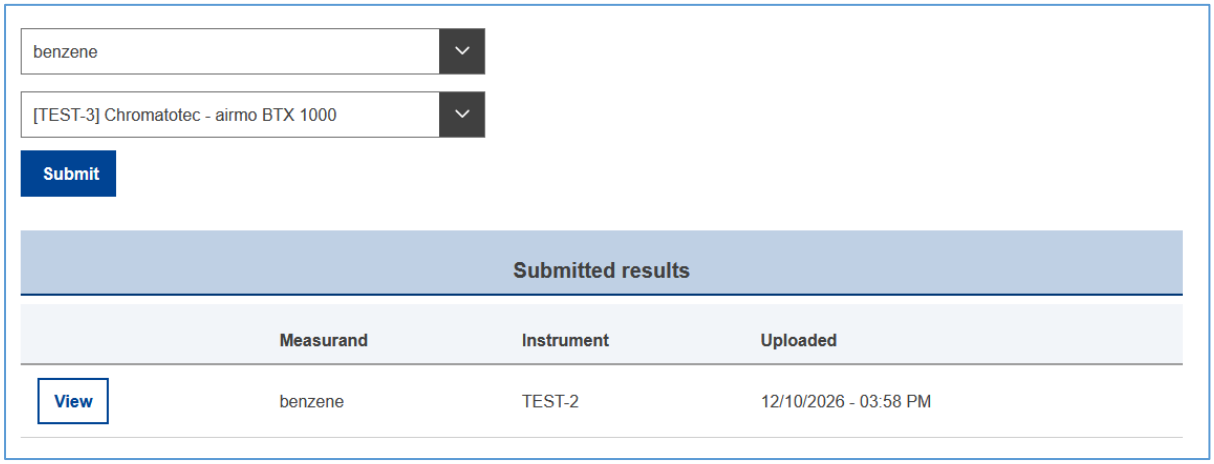


Figure 5 - Measurand/instrument selection and submitted results list

Uploading measurement results

The CSV upload page allows participants to submit all their measurement results for the selected measurand and instrument.

To upload a file:

1. Prepare the **CSV file** according to the required BTEX CSV schema. A csv file example is available for download and can be used as a template.
2. Click **Choose file** and select the CSV file containing your measurement results (*Figure 6*).
3. Click **Submit** to upload the selected file (*Figure 7*).

Important: All available individual measurements must be included in the CSV file, regardless of whether they were used to calculate the reported average concentration (avg). This includes up to eight measurements (v1–v8) for instruments reporting every 15 minutes, or four measurements (v1–v4) for those reporting every 30 minutes.

The reported average concentration (avg) and its associated uncertainties (su and eu) must represent the stabilised concentration during the corresponding measurement step. Measurements obtained during unstable conditions, particularly following a concentration change, may therefore be excluded from the average calculation, but must still be reported in the CSV file.

The file must comply with the prescribed CSV structure and validation rules. For detailed instructions on preparing and validating CSV files, refer to the separate BTEX CSV File Schema document.

Note: Only CSV files are accepted, with a maximum file size of 1 MB. Encrypted files and files containing macros are not permitted.

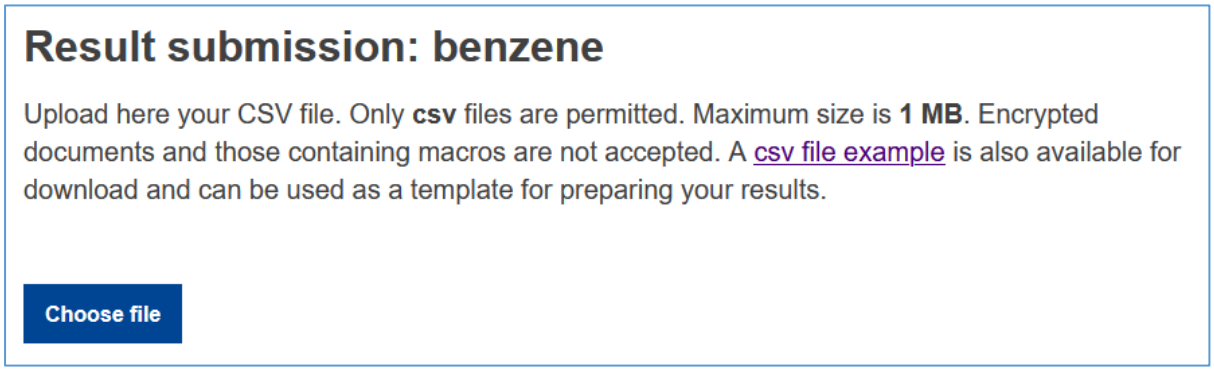


Figure 6 - CSV file selection

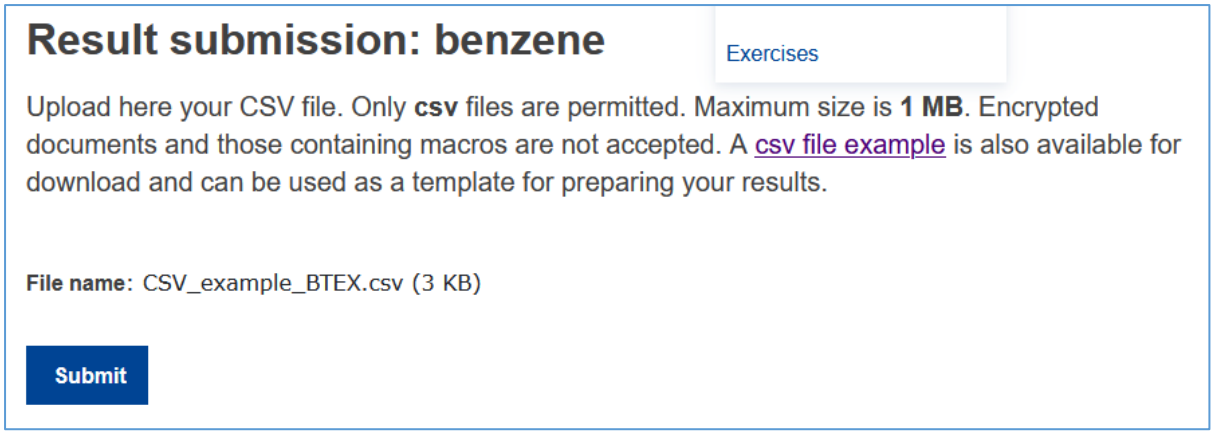


Figure 7 - CSV file submission

Reviewing submitted results

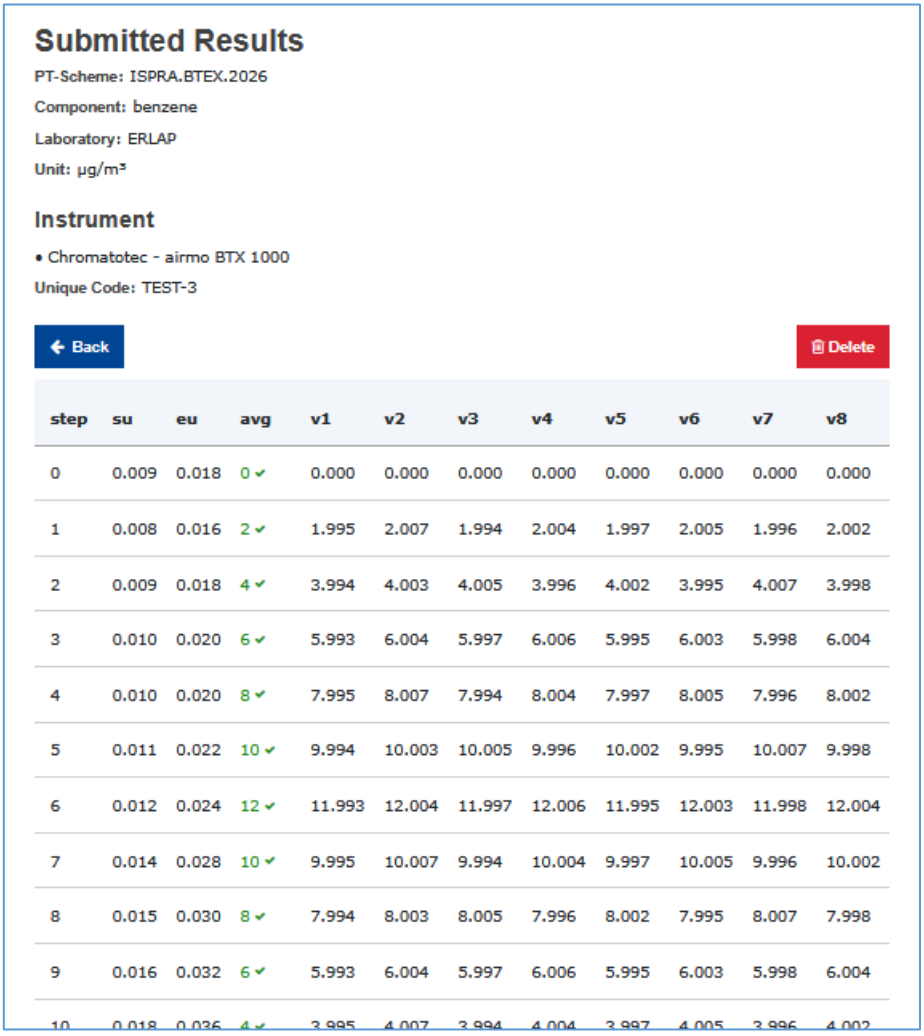
After a successful upload, the submitted results can be accessed from the Submitted results table on the **PostData** page.

This table lists the submitted measurand/instrument combinations and their upload dates.

To review a submission:

1. Locate the corresponding measurand/instrument combination.
2. Click View to open the Submitted Results report (*Figure 8*).
3. Review the uploaded measurement values, including the **step** number, standard uncertainty (**su**), expanded uncertainty (**eu**), average concentration (**avg**) and individual measurements (**v1–v8**).

The report displays the results for the selected instrument and measurand, allowing participants to check that the uploaded values are correctly recorded.



Submitted Results

PT-Scheme: ISPRA.BTEX.2026

Component: benzene

Laboratory: ERLAP

Unit: µg/m³

Instrument

• Chromatotec - airmo BTX 1000

Unique Code: TEST-3

Back | Delete

step	su	eu	avg	v1	v2	v3	v4	v5	v6	v7	v8
0	0.009	0.018	0 ✓	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1	0.008	0.016	2 ✓	1.995	2.007	1.994	2.004	1.997	2.005	1.996	2.002
2	0.009	0.018	4 ✓	3.994	4.003	4.005	3.996	4.002	3.995	4.007	3.998
3	0.010	0.020	6 ✓	5.993	6.004	5.997	6.006	5.995	6.003	5.998	6.004
4	0.010	0.020	8 ✓	7.995	8.007	7.994	8.004	7.997	8.005	7.996	8.002
5	0.011	0.022	10 ✓	9.994	10.003	10.005	9.996	10.002	9.995	10.007	9.998
6	0.012	0.024	12 ✓	11.993	12.004	11.997	12.006	11.995	12.003	11.998	12.004
7	0.014	0.028	10 ✓	9.995	10.007	9.994	10.004	9.997	10.005	9.996	10.002
8	0.015	0.030	8 ✓	7.994	8.003	8.005	7.996	8.002	7.995	8.007	7.998
9	0.016	0.032	6 ✓	5.993	6.004	5.997	6.006	5.995	6.003	5.998	6.004
10	0.018	0.036	4 ✓	3.995	4.007	3.994	4.004	3.997	4.005	3.996	4.002

Figure 8 - Submitted results report

Validating average values

The Submitted Results report allows participants to review all uploaded individual measurements and identify which values were used to calculate the reported average concentration (avg) for each measurement step (Figure 9).

By default, all reported measurements (v1–v8) are included in the validation. Participants can exclude individual measurements from the average calculation by clicking on the corresponding values. Excluded measurements are displayed in grey with a strikethrough but remain visible and stored in the database. Clicking an excluded value again includes it in the calculation.

The platform automatically calculates the average of the selected measurements and compares it with the average concentration (avg) declared in the CSV file, applying the specified validation tolerance.

A green check mark indicates that the declared average is consistent with the selected measurements.

A red warning symbol indicates that the declared average does not match the calculated average within the permitted tolerance.

Participants must ensure that the selected measurements correspond to those used to calculate the stabilised concentration reported for the corresponding step. If the average remains invalid, the reported value should be verified and, if necessary, the CSV file corrected and resubmitted. All reported measurement steps must have a valid average, consistent with the individual measurements selected for its calculation. The declared average is considered valid when the absolute difference between the declared and calculated averages does not exceed **1% of the declared average or 0.001 µg/m^3, whichever is greater**.

Important: This validation procedure serves only to verify the consistency between the declared average and the selected individual measurements. It does not modify the average concentration originally reported by the laboratory. The declared average (avg), together with its associated uncertainties (su and eu), is retained and used for the subsequent proficiency testing performance assessment and inter-laboratory comparison.

step	su	eu	avg	v1	v2	v3	v4	v5	v6	v7	v8
0	0.009	0.018	1.245 ⚠	12.556	1.239	1.251	1.241	1.248	1.243	1.250	1.244
1	0.008	0.016	1.487 ✔	1.487	1.493	1.482	1.483	1.490	1.485	1.492	1.486
2	0.009	0.018	1.732 ✔	1.732	1.727	1.736	1.728	1.735	1.730	1.737	1.731
3	0.010	0.020	2.019 ⚠	2.019	2.025	14.120	2.015	2.022	2.017	2.024	2.018
4	0.010	0.020	2.342 ✔	2.342	2.336	2.349	2.338	2.345	2.340	2.347	2.341
5	0.011	0.022	2.695 ✔	2.695	2.701	2.690	2.691	2.698	2.693	2.700	2.694

step	su	eu	avg	v1	v2	v3	v4	v5	v6	v7	v8
0	0.009	0.018	1.245 ✔	~~12.556~~	1.239	1.251	1.241	1.248	1.243	1.250	1.244
1	0.008	0.016	1.487 ✔	1.487	1.493	1.482	1.483	1.490	1.485	1.492	1.486
2	0.009	0.018	1.732 ✔	1.732	1.727	1.736	1.728	1.735	1.730	1.737	1.731
3	0.010	0.020	2.019 ✔	2.019	2.025	~~14.120~~	2.015	2.022	2.017	2.024	2.018
4	0.010	0.020	2.342 ✔	2.342	2.336	2.349	2.338	2.345	2.340	2.347	2.341

Figure 9 - Average (avg): validation with warnings and validation with excluded values

Removing or correcting submitted results

If a submission contains incorrect data, participants can remove it and upload a corrected CSV file (*Figure 8*):

1. Open the corresponding **Submitted Results** report.
2. Click **Delete** to remove the submitted results.
3. Return to **Results submission** and upload the corrected CSV file.

Important: Participants are responsible for checking the correctness and completeness of their submitted results before the data submission deadline.

Questionnaires

Participating laboratories must complete the questionnaires related to the instruments and reference materials used during the exercise.

From the **PostData** page, select **Manage Questionnaires** to access the questionnaires associated with each registered instrument.

Two main types of questionnaires are required:

- **Sampling Methods** – One mandatory questionnaire describing the sampling or measurement method used. Depending on the selected method, additional technical specifications may be required.
- **Reference Material** – One questionnaire for each reference material used during sampling. Multiple questionnaires must be completed if multiple reference materials were used.

Sampling Methods questionnaire is required once per instrument, while **Reference Material** questionnaires must reflect the actual number of reference materials used.

Important: All applicable questionnaires must be completed before the data submission deadline.

Completing the Sampling Methods questionnaire

The **Sampling Methods** questionnaire is mandatory and must be completed before accessing the related questionnaires.

For instruments without a completed Sampling Methods questionnaire, the platform displays a warning message (*Figure 10*).

To complete the questionnaire:

1. Locate the instrument and click **Open questionnaire**.
2. Complete the mandatory questions describing the sampling or measurement method used.
3. **Save** the questionnaire to proceed to the related questionnaires.

Depending on the selected sampling method, additional questionnaires are made available to collect the corresponding technical specifications.

Once completed, these questionnaires are displayed under Sampling Methods, where they can be edited or deleted as necessary (*Figure 11*).

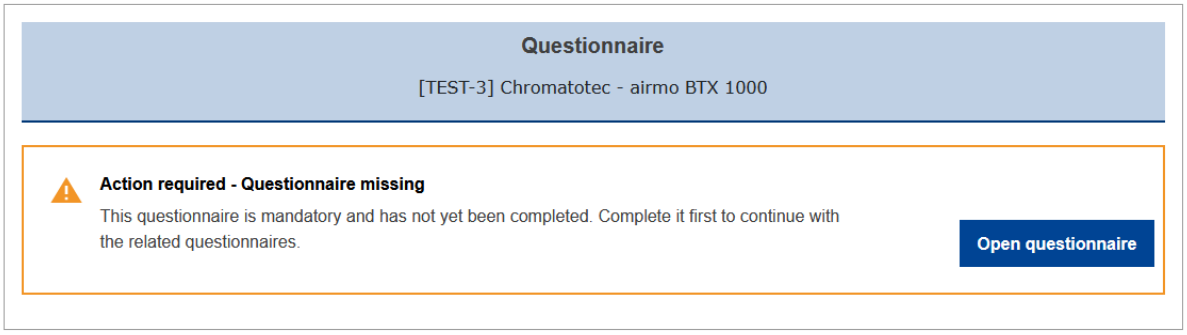


Figure 10 - Missing mandatory questionnaire

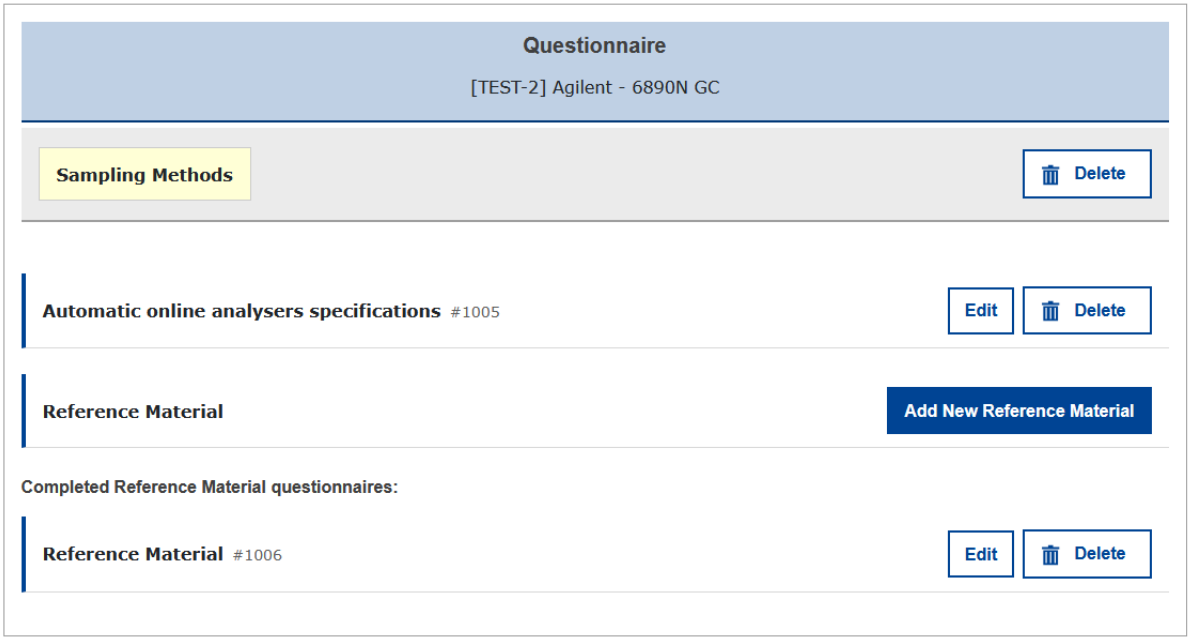


Figure 11 - Completed questionnaires

Completing Reference Material questionnaires

The **Reference Material** section allows participants to provide information about the reference materials used with each instrument.

To register a reference material:

1. Locate the **Reference Material** section for the corresponding instrument.
2. Click **Add New Reference Material** to open a new questionnaire.
3. Complete the requested information about the reference material.
4. **Save** the questionnaire.

Repeat this procedure for each reference material used during the exercise.

Completed questionnaires are listed under **Completed Reference Material questionnaires**, where they can be edited or deleted if necessary (*Figure 11*).

Important: Completing the required Sampling Methods and Reference Material questionnaires is mandatory for the exercise. Participants must ensure that all applicable questionnaires are completed and that the information provided is accurate before the data submission deadline.

Submission Checklist

Before the data submission deadline, participating laboratories should verify that all mandatory activities have been completed:

- **Instruments**: All instruments used during the exercise have been registered with a unique identification code.
- **Measurement results**: CSV files have been submitted for all applicable measurand/instrument combinations, including all available individual measurements (**v1–v8**).
- **Average validation**: All submitted measurement steps have a valid average (**avg**), with the measurements used for its calculation correctly identified.
- **Sampling Methods**: One Sampling Methods questionnaire and all applicable method-specific questionnaires have been completed for each instrument.
- **Reference Materials**: One Reference Material questionnaire has been completed for each reference material used during sampling.

Final Notes

The PT-DAP web platform serves as the official means of transmitting measurement results from participating laboratories to the Proficiency Testing (PT) coordinator (JRC).

All measurement values associated uncertainties (**su** and **eu**) and declared averages (**avg**) are provided by the participating laboratories and remain their responsibility. The PT coordination does not modify, correct, interpolate or recalculate the measurement results submitted by laboratories.

The platform provides a validation procedure to verify the consistency of the declared averages with the individual measurements selected by the laboratory. These validation procedures do not alter the originally submitted values. Measurements excluded from an average calculation remain stored in the database and available to the PT coordinator (JRC).

Important: The results used for the subsequent proficiency testing assessment and inter-laboratory comparison are the values declared and submitted by the participating laboratories. Participants are responsible for ensuring that all submitted results and questionnaire information are accurate and complete before the data submission deadline