



National
Metrology
Institute

Proficiency Test

Gas analysis: Elemental mercury (Hg)

Laboratories participate in Proficiency Tests (PTs) to demonstrate their competence, as required by, e.g., ISO/IEC 17025 §7.7. Measurement results from different laboratories are anonymously compared with each other to identify any deviations. The results in a PT will give you valuable insights into your laboratory's performance, ensure and even increase your quality, can be used as a reliable tool for quality and risk management and will meet the requirements of various accreditations and ISO/IEC 17025:2017. VSL organises PTs in accordance with the requirements of ISO/IEC 17043:2010 and is accredited by RvA (registration R006).

VSL will provide:

- A suitable, high-quality gas mixture;
- Instructions and a PT-protocol;
- An anonymised evaluation of your performance;
- A comprehensive PT-report;
- Further metrological and quality management support upon request.

Criterion of participation:

This PT scheme is open for all laboratories performing the analysis of elemental mercury on sorbent traps. It is presumed that laboratories are familiar with the safety issues and have experience in handling compressed gases in cylinders.

Quantities and ranges

Component	Mass (ng)
Elemental mercury	2 - 20

Fee 2025:

€ 2.295,00 (including transport within EU, excluding VAT)

Transport 2025:

On request (outside EU)

Registration:

Please go to our website www.vsl.nl/en/services/proficiency-testing to complete the registration form.

About VSL

VSL, the National Metrology Institute for The Netherlands, is a globally accredited PT provider (ISO/IEC 17043:2010, our scope reg. nr. R006).

Our independent proficiency tests cover a broad range of areas including pressure, mass, viscosity, temperature, electricity, length, chemical analysis, humidity and gas flow. Customers also ask VSL for advice and implementation of custom PTs.

We encompass all calibration capabilities across various technological fields listed in our extensive ISO/IEC 17025:2017 accredited calibration scope (reg.nr. K999) and our ISO 17034:2016 scope (reg. nr. P002).



For more information on VSL and our offer, please visit our website at www.vsl.nl/en/services/proficiency-testing. Should you have any questions or wish to join our PTs, feel free to contact us.



Schedule:

The schedule of this PT can be found on our website. VSL aims to make the PT items available within approximately 4 months or less after registration closes. The PT report will be released no later than six weeks after the deadline for submitting the results by the participants .

Number of participants:

The anticipated number of participants ranges from 5 to 25. VSL retains the right to cancel the PT if the number of participants falls below expectations. In such an event, VSL will contact you to find suitable alternatives.

Terms of payment:

Payment in advance. An invoice will be sent 1 month before the start of the PT. Payment is due within 30 days after invoice date. Failure to pay on time may result in a participant being excluded from participation, without any right to compensation.

PT-item:

Participants will provide four (4) clean (conditioned) and ready for use sorbent traps (e.g., gold or carbon, with a diameter smaller than 1 cm). Two sorbent traps will be sampled with a gas mixture of Hg in air, one sample level in duplicate. One sorbent trap to calibrate our flow system and one as shipping blank.

The tubes will be sampled by pumped sampling, according to ISO 16017-1, from dynamically generated calibration gas mixtures containing Hg in dry, clean air as prescribed in ISO 6145-8 (diffusion).

Choice of method and equipment:

Participants are advised to use their routine methods for sampling and analysis and the equipment that is used in routine measurement for this purpose. Laboratories should calibrate their equipment as done normally.

Instructions and protocol:

VSL will provide the protocol before the shipment of the cylinders. Each participant will have at least 3 weeks to perform the measurements and report the result. VSL will provide a report form for collecting the results.

Performance evaluation:

The evaluation of the results will be carried out by means of a normalised error (E_n -score).

The interpretation of E_n is as follows: $|E_n| \leq 1$ Satisfactory performance
 $|E_n| > 1$ Unsatisfactory performance

Confidentiality arrangements:

The identity of the participant is confidential, and so is the relationship between any participant, its submitted results and the performance evaluation. Results in the PT scheme will be collated, processed, reported and released in anonymised form. The PT reports are provided to the participants only.

VSL

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