

To: Laboratories conducting PAH measurements of material sample

Interlaboratory comparison ORG 14/2022 – PAH compounds in material sample

ProfTest SYKE will organize in cooperation with Finnish Institute of Occupational Health an interlaboratory comparison (ILC) for laboratories conducting PAH measurements of material samples.

The purpose of this interlaboratory comparison is to ensure the comparability and accuracy of the results of the participants. About 15 laboratories are expected to participate in this ILC. The organizing of this interlaboratory comparison is not included in the accreditation scope (www.finas.fi/sites/en), but the organizing follows the procedures of the accredited schemes.

Sample matrices

Synthetic sample and material sample

Timetable

Registration	11 October – 1 November 2022
Sample dispatch date (national participants)	22 November 2022 (see Chapter 4 <i>Sample delivery</i>)
Analysis of the samples	at the latest on 8 December 2022
Reporting of the results	23 November – 8 December 2022

Participation fee

The participation fee is **780 €** (+ VAT) including all measurements and samples.
See detailed information in Chapter 9 *Participation fee*.



Riitta Koivikko,
Coordinator



Mirja Leivuori,
Head of Unit

ProfTest SYKE is proficiency testing provider PT01
(EN ISO/IEC 17043:2010) accredited by FINAS
(Finnish Accreditation Service, www.finas.fi/sites/en).



Organizing the interlaboratory comparison

1 Organizer

Proftest SYKE, Finnish Environment Institute SYKE, Laboratory Centre

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Contact

Coordinator: Riitta Koivikko, tel. +358 295 251 750

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Cooperation partner

Finnish Institute of Occupational Health (FIOH, T013, www.finas.fi/sites/en)

Analytical experts

Evgeny Parshintsev (FIOH), tel. +358 30 474 2198

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Expert laboratory

FIOH (T013, www.finas.fi/sites/en)

SYKE, Helsinki (T003, www.finas.fi/sites/en): synthetic sample

Subcontracting

FIOH (T013, www.finas.fi/sites/en): PAH measurements of material sample

2 Samples and measurands

The sample matrices in this interlaboratory comparison are synthetic sample and material sample.

Participation in this interlaboratory comparison requires both synthetic sample and material sample.

Material sample is building material from renovation site in Finland. Samples, measurands (16 PAH compounds and their sum), and concentration ranges are presented Appendix 1.

3 Registration

The registration for this proficiency test is open until 1 November 2022.

Registration is done via the electronic client interface, ProftestWEB: <https://wwwp5.ymparisto.fi/Labtest/en>.

If there are problems when using ProftestWEB or you need username and password, please contact proftest@syke.fi.

4 Sample delivery

The sample dispatch day for national participants is 22 November 2022. To ensure timely arrival, the samples are dispatched earlier for participants abroad.

The initial weight of the synthetic sample A1PAH is delivered with the samples, together with the criterion for the accepted change of the weight. The shipment also includes an extra sample “Temperature” (water) to monitor the temperature inside the package. The participants shall reweight the synthetic sample and measure the temperature of the “Temperature” sample immediately at the package arrival.

If the sample package does not arrive **at the latest on 23 November 2022**, or there are missing and/or broken sample containers, please contact the provider immediately proftest@syke.fi. More contact details in Chapter 1 Organizer.

5 Sample storage and analysis

Sample A1PAH is kept cool (4 °C) and sample M2PAH in room temperature. Samples are analysed within the laboratory where they are delivered to, and analyses are conducted according to the participant’s normal procedures.

Two replicate determinations are performed of the sample A1PAH and two results are reported. Of the sample M2PAH three replicate determinations are performed and three results are reported.

Timetable for sample analysis is on the first page of this letter.

6 Reporting the results

The participant results are reported to Proftest SYKE at the latest on **8 December 2022**. The results are reported via the electronic client interface [ProftestWEB](#). Together with the results reporting also a survey of the used analytical techniques should be filled.

Proftest SYKE delivers the preliminary result report to the participants at the latest in the week 51 (19 – 23 December 2021). The final report will be published at the latest in May 2023 and it is then available on ProftestWEB and on Proftest SYKE website (www.syke.fi/proftest/en). The availability of the report will be informed to the participants.

7 Assigned values and evaluation of the results

Either the calculated concentration (synthetic samples) or the robust mean, the median, or the mean of the results reported by the participants will be used as the assigned value for the measurand. The calculation of the assigned value is based on the results reported according to the given guidelines. Also, when needed, the result of the expert laboratory can be used as the assigned value. The evaluation of the results will be based on z scores. The preliminary standard deviation for proficiency assessment will be given in the cover letter of the samples. In special cases also E_n or D% scores can be used for the performance evaluation.

8 Confidentiality

The results of participants are treated anonymously.

9 Participation fee

The participation fee is **780 €** (+ VAT) including all samples. The basic fee is **480 €** (+ VAT) and the fee for each sample is **150 € / sample** (+ VAT) according to the registration.

The invoice will be sent after the delivery of the preliminary results report. If the participant orders additional samples, they are charged according to the prices listed above.

Note! In Finland VAT is 24 %. Further, if the invoicing address or any other additional information has to be corrected after the invoicing, the extra handling cost will be charged. The participant is also responsible for possible custom clearance or customs fee is the samples.

10 Appendices

Appendix 1 Samples, measurands, and concentration ranges

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Table 1. Samples and concentration ranges

Sample matrix	Sample code	Sample volume / Concentration range
Synthetic sample, <i>Dichloromethane solution</i>	A1PAH	4 ml / PAH < 3000 ng/ml Σ PAH ₁₆ < 20000 ng/ml
Material sample	M2PAH	5 g / Σ PAH ₁₆ > 200 mg/kg

Table 2. Measurands

Measurand	CAS number
Acenaphthene	83-32-9
Acenaphthylene	208-96-8
Anthracene	120-12-7
Benzo[a]anthracene	56-55-3
Benzo[a]pyrene	50-32-8
Benzo[b]fluoranthene	205-99-2
Benzo[ghi]perylene	191-24-2
Benzo[k]fluoranthene	207-08-9
Chrysene	218-01-9
Dibenzo[a,h]anthracene	53-70-3
Fluoranthene	206-44-0
Fluorene	86-73-7
Indeno[1,2,3-cd]pyrene	193-39-5
Naphthalene	91-20-3
Phenanthrene	85-01-8
Pyrene	129-00-0
Σ PAH ₁₆	