

To: Laboratories participating in ProfTest SYKE proficiency tests

Proficiency test SPW 01/2022 – Swimming pool water analyses

ProfTest SYKE will organize in cooperation with Eurofins Environment Testing Finland Oy a proficiency test for the analysis of free, combined and total chlorine, KMnO_4 , NO_3 , pH, turbidity and urea in swimming pool waters.

The purpose of this proficiency test is to ensure the comparability and accuracy of the results of the participants. About 25 laboratories are expected to participate in this proficiency test. The organizing of this proficiency test is included in the accreditation scope (www.finas.fi/sites/en).

Sample matrices

Synthetic sample (for urea) and swimming pool water.

Timetable

Registration	1 December 2021 – 12 January 2022
Sample dispatch date (national participants)	1 February 2022 (see Chapter 4 <i>Sample delivery</i>)
Analysis of the samples	All samples are analyzed on 3 February 2022
Reporting the participant results	At the latest on 9 February 2022

Participation fee

The participation fee is 755 € (+ VAT) including all measurements and samples.
See detailed information in Chapter 9 *Participation fee*.



Mirja Leivuori,
Head of Unit, coordinator



Riitta Koivikko,
Substitute for coordinator

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 proficiency test

1 Organizer

Proftest SYKE, Finnish Environment Institute SYKE, Laboratory Centre

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Contact

Coordinator: Mirja Leivuori, tel. +358 295 251 366

Substitute for coordinator: Riitta Koivikko, tel. +358 295 251 750

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Analytical experts

Free, combined and total chlorine, urea Sami Tyrväinen (Eurofins Testing Finland Oy, Lahti)
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NO₃, pH, turbidity, KMnO₄ Teemu Näykki (SYKE)
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Jaana Kolehmainen (SYKE), in expert orientation
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Subcontracting

Chlorine and urea measurements: Eurofins Environment Testing Finland Oy, Lahti
(T039, www.finas.fi/sites/en)

2 Samples and measurands

The sample matrices in this proficiency test are: synthetic sample (for urea) and swimming pool water. Samples, measurands, concentration ranges and sample preservations are presented in Appendix 1.

Note! Check the samples volumes and, in case needed, order additional samples.

3 Registration

The registration for this proficiency test is open until 12 January 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 **1 February 2022**. To ensure timely arrival, the samples are dispatched earlier for participants abroad.

If the sample package does not arrive at the latest on **2 February 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

The samples are stored at 4 °C. Sample preservation, if needed, and analysis are conducted according to the participant's normal procedures. Analysis should be done according to the normal method of analysis. Chlorines, urea, and turbidity measurements should be performed as duplicate determination (two results). One result is reported for the other samples and analysis. Excess replicates shall not be done. Samples are analysed within the laboratory they are delivered.

All samples are analyzed on 3 February 2022.

6 Reporting the results

The participant results are reported to ProfTest SYKE at the latest on **9 February 2022**.

ProfTest SYKE delivers the preliminary result report to the participants at the latest in the week 7 (14 – 18 February 2022). The final report will be published at the latest in April 2022 and it is then available via ProfTestWEB and via 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, 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 **755 € (+ VAT)** including all measurements and samples. The basic fee is **455 € (+ VAT)** and the fees for each sample and measurand are as follows:

Chlorine (free, combined and total)	40 €/sample	(2 samples)
pH	20 €/ sample	(2 samples)
NO ₃	20 €/ sample	(2 samples)
KMnO ₄	20 €/sample	(2 samples)
Turbidity	20 €/sample	(2 samples)
Urea	30 €/sample	(2 samples)

The invoice will be sent after the delivery of the preliminary result 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 of the samples.

10 Appendices

Appendix 1 Samples, measurands, concentration ranges and preservations

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Measurands	Sample type	Sample code	Sample volume ²⁾ , container and preservation ³⁾	Concentration range
Chlorine, combined ¹⁾ [Cl _{2, comb}] Chlorine, free ¹⁾ [Cl _{2, free}] Chlorine, total ¹⁾ [Cl _{2, total}]	Swimming pool water	U1K	500 ml plastic <i>not preserved</i>	Cl _{2, comb} < 1 mg/l Cl _{2, free} < 2 mg/l Cl _{2, total} < 2.5 mg/l
	Swimming pool water	U2K		
	Addition solution	L1K	4 ml vial	
	Addition solution	L2K		
KMnO₄	Swimming pool water	U1P	100 ml plastic <i>preserved with H₂SO₄</i>	5 – 15 mg/l
	Swimming pool water	U2P		
NO₃	Swimming pool water	U1N	100 ml plastic <i>not preserved</i>	15 – 60 mg/l
	Swimming pool water	U2N		5 – 15 mg/l
pH	Swimming pool water	U1H	100 ml glass <i>not preserved</i>	5 – 8 pH units
	Swimming pool water	U2H		
Turbidity	Swimming pool water	U1S	250 ml plastic <i>not preserved</i>	0.2 – 1.5 FNU/FTU
	Swimming pool water	U2S		
Urea	Synthetic sample	A1U	250 ml plastic <i>not preserved</i>	0.3 – 2 mg/l
	Swimming pool water	U2U		

¹⁾ Combined, free and total chlorine will be analysed from the same sample container. Samples are prepared by the participant according to the guidelines given in the sample letter. The addition solutions L1K and L2K are included in the order.

²⁾ Please check the sample volume and in case needed, order additional samples.

³⁾ KMnO₄ samples U1P and U2P have been preserved. Other samples have not been preserved.

Sample codes (first letter showing the sample matrix):

A = Synthetic sample

U = Swimming pool water

L = Addition solution