

To: Laboratories participating in ProfTest Syke proficiency tests

## Proficiency test SPW 02/2024 – Swimming pool water analyses

ProfTest Syke will organize a proficiency test (PT) for the analysis of free, combined and total chlorine,  $\text{KMnO}_4$ ,  $\text{NO}_3$ , 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 ([finas.fi/sites/en](https://finas.fi/sites/en)).

### Sample matrices

Synthetic sample (for urea) and swimming pool water.

### Timetable

Registration	<b>4 December 2023 – 12 January 2024</b>
Sample dispatch date (national participants)	30 January 2024 (see Chapter 4 <i>Sample delivery</i> )
Analysis of the samples	<b>All samples are analyzed on 1 February 2024</b>
Reporting the participant results	<b>1 – 6 February 2024</b>

### Participation fee

The participation fee is **801 €** (+ VAT) including all measurements and samples.  
See detailed information in Chapter 9 *Participation fee*.



Mirja Leivuori,  
Group manager, coordinator



Päivi Grönroos,  
Substitute for coordinator

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



## Organizing the proficiency test

### 1 Organizer

Proftest Syke, Finnish Environment Institute (Syke)  
Address: Mustialankatu 3, FI-00790 Helsinki, Finland  
Email: [proftest@syke.fi](mailto:proftest@syke.fi)

#### Contact

Coordinator: Mirja Leivuori, tel. +358 295 251 366  
Substitute for coordinator: Päivi Grönroos, tel. +358 295 252 174  
Email: [firstname.lastname@syke.fi](mailto:firstname.lastname@syke.fi)

#### Analytical experts

Free, combined and total chlorine, urea	Marjo Laurén (MetropoliLab Oy), tel. +358 10 391 3595 <a href="mailto:firstname.lastname@metropolilab.fi">firstname.lastname@metropolilab.fi</a>
NO <sub>3</sub> , pH, turbidity, KMnO <sub>4</sub>	Mika Sarkkinen (Syke) <a href="mailto:firstname.lastname@syke.fi">firstname.lastname@syke.fi</a> , tel. +358 295 251 620

#### Expert laboratory

Syke, Oulu (T003, [finas.fi/sites/en](https://finas.fi/sites/en))

#### Subcontracting

Chlorine and urea measurements: MetropoliLab Oy (T058, [finas.fi/sites/en](https://finas.fi/sites/en))

### 2 Sample 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 2024**.

Registration is done via the electronic client interface, ProftestWEB:  
<https://www.wp5.ymparisto.fi/Labtest/en>. If there are problems when using ProftestWEB or you need username and password, please contact [proftest@syke.fi](mailto:proftest@syke.fi).

## 4 Sample delivery

The sample dispatch day for national participants is 30 January 2024. To ensure timely arrival, the samples are dispatched earlier for participants abroad.

If the sample package does not arrive **at the latest on 31 January 2024**, or there are missing and/or broken sample containers, please contact the provider immediately ([proftest@syke.fi](mailto: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. Replicated analysis should be done no more than according to the normal method of analysis. For the analysis for the chlorine, turbidity and urea two replicate result are reported. Samples are analysed within the laboratory where they are delivered to.

**All samples are analyzed on 1 February 2024.**

## 6 Reporting the participant results

The participant results are reported to Proftest Syke at the latest on **6 February 2024**.

Proftest Syke delivers the preliminary result report to the participants latest in the week 7 (12 – 16 February 2024). The final report will be published at the latest in May 2024 and it is then available on ProftestWEB and on Proftest Syke website ([syke.fi/proftest/en](http://syke.fi/proftest/en)). The availability of the report will be informed to the participants.

## 7 Assigned values, evaluation of the results, and result reports

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 sample. 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 **801 €** (+ 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)	45 €/ sample (2 samples)
pH	22 €/ sample (2 samples)
NO <sub>3</sub>	22 €/ sample (2 samples)
KMnO <sub>4</sub>	22 €/ sample (2 samples)
Turbidity	27 €/ sample (2 samples)
Urea	35 €/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 sample.

## 10 Appendices

**Appendix 1** Samples, measurands, concentration ranges and preservations.

## Appendix 1. Samples, measurands, concentration ranges and preservations.

Measurands	Sample type	Sample code	Sample volume <sup>2)</sup> , container and preservation <sup>3)</sup>	Concentration range
<b>Chlorine, combined</b> <sup>1)</sup> [Cl <sub>2, comb</sub> ] <b>Chlorine, free</b> <sup>1)</sup> [Cl <sub>2, free</sub> ] <b>Chlorine, total</b> <sup>1)</sup> [Cl <sub>2, total</sub> ]	Swimming pool water	<b>U1K</b>	500 ml plastic <i>not preserved</i>	Cl <sub>2, comb</sub> < 1 mg/l Cl <sub>2, free</sub> < 2 mg/l Cl <sub>2, total</sub> < 2.5 mg/l
	Swimming pool water	<b>U2K</b>		
	Addition solution	<b>L1K</b>	4 ml vial	
	Addition solution	<b>L2K</b>		
<b>KMnO<sub>4</sub></b>	Swimming pool water	<b>U1P</b>	100 ml plastic <i>preserved with H<sub>2</sub>SO<sub>4</sub></i>	5 – 15 mg/l
	Swimming pool water	<b>U2P</b>		
<b>NO<sub>3</sub></b>	Swimming pool water	<b>U1N</b>	100 ml plastic <i>not preserved</i>	15 – 60 mg/l
	Swimming pool water	<b>U2N</b>		3 – 15 mg/l
<b>pH</b>	Swimming pool water	<b>U1H</b>	100 ml glass <i>not preserved</i>	5 – 8 pH units
	Swimming pool water	<b>U2H</b>		
<b>Turbidity</b>	Swimming pool water	<b>U1S</b>	250 ml plastic <i>not preserved</i>	0.2 – 1.5 FNU/FTU
	Swimming pool water	<b>U2S</b>		
<b>Urea</b>	Synthetic sample	<b>A1U</b>	250 ml plastic <i>not preserved</i>	0.3 – 2 mg/l
	Swimming pool water	<b>U2U</b>		

<sup>1)</sup> 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.

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

<sup>3)</sup> KMnO<sub>4</sub> 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