

To: Laboratories participating in ProfTest SYKE proficiency tests

Proficiency test DW 09/2022 – Drinking water analyses

ProfTest SYKE will organize a proficiency test for the analysis of COD_{Mn}, Fe, Mn, chloride, fluoride, sulphate, pH, conductivity, NH₄, NO₂, NO₃, Ca, K, Mg, Na and hardness in drinking water and in raw water.

The purpose of this proficiency test is to ensure the comparability and accuracy of the results of the participants. About 40 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, drinking water and raw water.

Timetable

Registration	13 June – 15 August 2022	
Sample dispatch date (national participants)	13 September 2022 (see Chapter 4 <i>Sample delivery</i>)	
Analysis of the samples	COD _{Mn} , pH, conductivity	15 September 2022
	N compounds	at the latest on 16 September 2022
	Ca, K, Mg, Na, hardness	at the latest on 23 September 2022
	Cl, F, SO ₄	at the latest on 23 September 2022
	Fe, Mn	at the latest on 23 September 2022
Reporting of the results	14 – 26 September 2022	

Participation fee

The participation fee is **895 €** (+ VAT) including all measurements and samples.
See detailed information in Chapter 9 *Participation fee*.


Päivi Grönroos, 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 proficiency test

1 Organizer

Proftest SYKE, Finnish Environment Institute SYKE, Laboratory Centre

Address: Mustialankatu 3, FI-00790 Helsinki, FINLAND

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Contact

Coordinator: Päivi Grönroos, tel. +358 295 252 174

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Analytical experts

COD_{Mn}, Cl, F, SO₄, pH,
conductivity, N compounds

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Expert laboratory SYKE, Oulu and Helsinki (T003, www.finas.fi/sites/en)

2 Samples and measurands

The sample matrices in this proficiency test are: synthetic sample, drinking water and raw 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.

Note! The Fe/Mn samples can be ordered as preserved in sulfuric acid or nitric acid. Please choose the right type of preservation when placing your order.

3 Registration

The registration for this proficiency test is open until 15 August 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 13 September 2022. To ensure timely arrival, the samples are dispatched earlier for participants abroad.

If the sample package does not arrive **at the latest on 14 September 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. Samples are analysed within the laboratory where they are delivered to, and analyses are conducted according to the participant's normal procedures. For the samples and measurements, replicated analysis should be done no more than according to the method of analysis or the instructions within the sample letter. 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 **26 September 2022**.

Note! N compounds are reported as NH₄, NO₂ and NO₃ (not as nitrogen).

ProfTest SYKE delivers the preliminary result report to the participants at the latest in the week 40 (3 – 7 October 2022). The final report will be published at the latest in January 2023 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 (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 **895 €** (+ VAT) including all measurements and samples. The basic fee is **460 €** (+ VAT) and the fees for each sample and measurand are as follows:

COD _{Mn}	22 €/ sample	(3 samples)
F	18 €/ sample	(3 samples)
Fe, Mn	22 €/ sample	(3 samples)
Ca, K, Mg, Na, hardness	25 €/ sample	(3 samples)
N compounds	30 €/ sample	(3 samples)
pH, conductivity	12 €/sample	(4 samples)
Cl, SO ₄	12 €/ sample	(3 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 is the samples.

10 Appendices

Appendix 1 Samples, measurands, concentration ranges and preservations

Appendix 1 Samples, measurands, concentration ranges and preservations

Measurands	Sample matrix	Sample code	Sample volume ¹⁾ and container	Concentration range and preservation
Ca K Mg Na Hardness	Synthetic sample	A1K	500 ml, plastic	A1K: Ca, K, Mg, Na > 0.1 mg/l D2K: Ca, K, Mg > 1.0 mg/l, Na 1.0 – 200 mg/l G3K: Ca, K, Mg, Na > 0.1 mg/l Hardness > 0.1 mmol/l
	Drinking water	D2K		
	Raw water	G3K		
Cl ⁻ SO ₄ – as sulphate ²⁾	Synthetic sample	A1S	500 ml, plastic	A1S: Cl ⁻ > 10 mg/l, SO ₄ > 5 mg/l D2S: 3 – 250 mg/l G3S: > 3 mg/l
	Drinking water	D2S		
	Raw water	G3S		
COD _{Mn}	Synthetic sample	A1C	250 ml, plastic	A1C: > 2 mg/l D2C: 2 – 5 mg/l G3C: > 2 mg/l <i>Preservation in SYKE:</i> <i>2.5 ml 4 mol/l H₂SO₄/250 ml</i>
	Drinking water	D2C		
	Raw water	G3C		
F ⁻	Synthetic sample	A1F	250 ml, plastic	A1F: > 1 mg/l D2F: 0.2 – 1.5 mg/l G3F: > 0.2 mg/l
	Drinking water	D2F		
	Raw water	G3F		
Fe Mn	Synthetic sample	A1Fe	250 ml, plastic	A1Fe: Fe, Mn > 20 µg/l D2Fe: Fe 20 – 200 µg/l, Mn 20 – 50 µg/l G3Fe: Fe > 20 µg/l, Mn > 50 µg/l <i>Sample is preserved in SYKE:</i> <i>with 2.5 ml 4 mol/l H₂SO₄/250 ml</i> <i>or</i> <i>with 1.25 ml conc. HNO₃/250 ml ³⁾</i>
	Drinking water	D2Fe		
	Raw water	G3Fe		
NH ₄ as ammonium ²⁾ NO ₂ as nitrite ²⁾ NO ₃ as nitrate ²⁾	Synthetic sample	A1N	400 ml, glass	NH₄ A1N: > 0.1 mg/l D2N: 0.05 – 0.5 mg/l G3N: > 0.05 mg/l NO₂ A1N: > 0.15 mg/l D2N: 0.15 – 0.5 mg/l G3N: > 0.003 mg/l NO₃ A1N: > 4 mg/l D2N: 2 - 50 mg/l G3N: > 0.8 mg/l <i>Samples are autoclaved at SYKE.</i>
	Drinking water	D2N		
	Raw water	G3N		
pH	Synthetic sample	A1P	100 ml, glass	A1P: 5 - 9 pH unit D2PJ: 6.5 – 9.5 pH unit G3PJ: 4.5 - 9 pH unit
	Drinking water	D2PJ		
	Raw water	G3PJ		
Conductivity	Synthetic sample	A1J	100 ml, glass	A1J: 200 - 500 µS/cm D2PJ: 100 - 2500 µS/cm G3PJ: > 30 µS/cm
	Drinking water	D2PJ		
	Raw water	G3PJ		

¹⁾ Please check the sample volume and, in case needed, order additional samples.

²⁾ Results are reported as compounds (not as sulphur or nitrogen).

³⁾ Please choose the preservation acid when ordering samples.

Sample codes (first letter showing sample matrix):

A = Synthetic sample D = Drinking water G = Raw water (ground water)