

QUASIMEME/NORMAN Interlaboratory Study on the Analysis of Microplastics in Environmental Matrices

INVITATION TO

ROUND 2 - Development Exercise DE 17

open to all laboratories with an interest in microplastics analysis worldwide

Introduction

Microplastic' is a catch-all phrase for plastic particles spanning six orders of magnitude in particle size (0.1–5000 μm) and a gigantic variety of chemical compositions: (co)polymers, chemical additives, residual monomers, fillers, catalysts, non-intentionally added substances (NIAS) etc. The diversity of this analyte class has resulted in a range of different analytical methodologies being applied thus far. One of the challenges analytical scientists face with microplastics analysis is how to check and demonstrate analytical proficiency. The interlaboratory study (ILS) initiative for microplastics analysis described in this flyer has been designed to answer the need of laboratories working on analytical quality control of their microplastics analyses. Established in 2018, this initiative is dedicated to the development and collaborative improvement of microplastic analytical proficiencies, involving a large number of laboratories worldwide working towards common analytical goals. As a first step, a workshop on microplastics was organized in Amsterdam, the Netherlands, in November 2018. During this workshop it was generally agreed that an open ILS on microplastics was needed, preferably designed as a step-wise approach.

Step-wise ILS Study Design

The ILS consists of a minimum of three rounds, unless corrective actions or a repetition of one step is deemed necessary. Laboratories use their in-house methods, as currently no standard or harmonized methods exist. Because this ILS focuses on a new and difficult analysis, it is also called a 'Development Exercise' (DE). It is anticipated that after the entire study analytical methodologies will be harmonized and the microplastics could be included in the routine proficiency testing scheme of QUASIMEME (www.quasimeme.org). The ILS initiative is strengthened by feedback from the community of participants via workshops and bilateral communications, taking lessons learned from the opening round to future rounds.

- First Workshop (completed in 2018) Ca. 110 participants discussed analysis on microplastics in environmental matrices in Amsterdam, the Netherlands in November 2018.
- ILS Round 1 (completed in 2019) The first round focused on the identification of microplastics with pre-production pellets and identification and quantification of microplastics in tablets of eleven

different tests. The results and outcome of the first workshop and ILS round 1 have been described in a report, which has been sent to all participants of the first round.

- ILS Round 2 (current round) The second round we propose to include exercises with analysis of microplastics in more complex environmental samples as well as in tablets (as in first round)
- Second Workshop in 2021 (details will follow)
- ILS Round 3 (details will follow)

How to participate in the upcoming second round of ILS

All analytical methods are welcome. We encourage laboratories using Py-GC-MS to apply as well.

NB Laboratories who did not participate in the first round are welcome to join this round.

Participants should register on or before **1th September 2020**. To register, please return the completed 2020 Round 2 application form DE-17 Microplastics by email to quasimeme@wur.nl.

Suggestions with regard to the design of the study and the type of test materials are also welcome and may be added to your email. Upon receipt of your application form you will receive a confirmation of your participation and an invoice.

Participants in Round 2 may request a copy of the Round 1 report by emailing quasimeme@wur.nl.

Participation Fee The fee for participation in this study is 750 euro per round. If participants wish to register for rounds 2 and 3 together, a discount of 100 euro will be offered on one workshop registration fee, following round 2. Note that for each round, the test samples cannot be dispatched before receipt of participant fee.

Tentative 2020-2021 timeline

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| <i>5 December 2019</i> | <i>1st Announcement of second development exercise</i> |
| <i>1 September 2020</i> | <i>Deadline registration</i> |
| <i>6 October 2020</i> | <i>Dispatch of test materials</i> |
| <i>10 January 2021</i> | <i>Deadline for returning results</i> |
| <i>12 April 2021</i> | <i>Draft Report sent to participants</i> |
| <i>19 April 2021</i> | <i>Deadline feedback from participants</i> |
| <i>30 April 2021</i> | <i>Final Report</i> |
| <i>20-21 May 2021</i> | <i>Second workshop and planning round 3</i> |

ILS Initiators

This study is being coordinated by Dr. Heather Leslie, Dr. Louise van Mourik and Prof. Jacob de Boer of the Dept. of Environment and Health at the Vrije Universiteit (VU), Prof. Bert van Bavel of the Norwegian Research Institute for Water Research (NIVA) and Prof. Wim Cofino, Steven Crum and Esther van de Brug of WEPAL-QUASIMEME Laboratory Performance Studies (Quality Assurance of Information in Marine Environmental Monitoring in Europe). The ILS initiative is supported and promoted by the NORMAN network and the NORMAN working group on nano-and micro scale particulate contaminants. The four institutions have joined forces to set up a program to address the quality of microplastic analyses. QUASIMEME operates Proficiency Testing Studies for institutes making chemical measurements in the aquatic environment worldwide. As part of the improvement program, QUASIMEME co-operates with centers of excellence to provide workshops for discussion, and “hands on” experience to complement the development programs in Laboratory Performance Studies.

Questions or feedback? Please contact us by email at quasimeme@wur.nl

Website link for ILS: <https://science.vu.nl/en/research/environment-and-health/projects/microplastics-ws-and-ils>