Interlaboratory Study on the Analysis of Microplastics
Round 1 (2019)

Announcement Flyer

March 2019

'Microplastic' is a catch-all phrase for plastic particles spanning six orders of magnitude in particle size (ca. 0.01–5000 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. A Microplastics Analysis Workshop was held in November 2018 in Amsterdam and was dedicated to the topic of microplastics analysis in environmental matrices and quality control. Based on the outcome of that workshop we now announce the first phase of an international microplastics interlaboratory study (ILS). Because this ILS is focused on a new and difficult analysis, we term this study a 'Development Exercise' (DE).

This study is intended to serve the scientific and data user community in several ways. First of all, interlaboratory studies and workshops that go with them create a platform of exchange, learning and a community of microplastics analysts working towards a common goal: robust, reliable microplastics data that are fit for purpose. Participating laboratories follow a stepwise programme, receiving microplastic samples of increasing complexity and difficulty to identify and quantify. The results from all participating laboratories will be compiled and analysed and presented and discussed at upcoming workshops. The main goals of this study are to improve proficiency of participating laboratories, and improve quality control aspects of microplastics analyses.

Design of the Study
This development exercise will consist of a minimum of three rounds, unless it appears that corrective actions or a repetition of a round is needed. It is anticipated that after the entire study, analytical methodologies will be harmonized and microplastics can be included in the routine proficiency testing scheme of QUASIMEME.
Test samples are sent to participating laboratories in each round for analysis using methods selected by the laboratories. Each laboratory reports its analytical results via online reporting sheets.

Round 1
For the first round of this study participants will receive test samples in the form of an aluminum strip with pills containing microplastics. Each lab is requested to analyse and report the outcomes through the website of QUASIMEME.

Content of test materials:
1. Microplastics (size range ca. 150 µm – 3 mm) and one blank (10 pills)
2. Microplastics (size range <150 µm) (2 pills)

The results of all laboratories will be compared and described in a report prepared by the organisers. The report will include a description of the preparation of the materials, the methods of analysis used by the participants, a discussion including advice to the participating labs and conclusions.

The tentative scheme for this first round of the study is:

14 March 2019 Announcement and invitation
30 April 2019 Deadline for registration
21 May 2019 Dispatch of test materials to participants
1 August 2019 Deadline for returning results
30 Sept. 2019 Draft report
11 Nov. 2019 Final report

Soon after November 2019 a second round will be organized in which we propose to focus on the extraction of microplastics from more complex matrices such as sediments and fish. Beach plastic identification may also be added to this second round. In the third round we will focus on the analysis of microplastics (including small size ranges) in realistic environmental samples such as fish and sediment.

Second Workshop
A new workshop will be planned after the second round, probably around June or September 2020 to provide an opportunity to the analytical community to discussion of analytical performance results of the study so far, technical aspects of the analyses used, and to give participants a chance to provide input for the following round(s).

Coordination
This study is coordinated by Dr. Heather Leslie, Dr. Louise van Mourik and Prof. Jacob de Boer, Vrije Universiteit, Amsterdam, The Netherlands, a team highly experienced in the organization of large, international interlaboratory studies. Materials will be provided by the research group of Prof. Bert van Bavel, NIVA, Oslo, Norway. Data management and statistics for this exercise will be developed and provided by QUASIMEME (Quality Assurance of Information in Marine Environmental Monitoring in Europe) (Prof. Wim Cofino, Steven Crum and Esther van de Brug). QUASIMEME operates Proficiency Testing Studies for institutes making chemical measurements in the aquatic environment worldwide. As part of the improvement programme, QUASIMEME cooperates with centers of excellence to provide workshops for discussion, and “hands-on” experience to complement the development programmes in the Laboratory Performance Studies.

**Participation Fee**
The fee for participation in this study will be 750 Euro per round. If a pre-payment is made for all three rounds, the fee will be 2000 Euro in total for all three rounds. The samples will be dispatched after receipt of the fee.

**Registration**
Participants can register before 30 April 2019 by returning the Round 1 (2019) application form DE-17 Microplastics, containing all necessary details, by email to the Quasimeme office (quasimeme@wur.nl) Upon receipt of your email you will receive a confirmation of your participation and an invoice.

**Feedback welcome**
Suggestions with regard to the design of the study and the type of test materials are also welcome by email.