New and improved analysis of microplastic and rubber particles in water
Quantitative method
It is difficult to give an exact figure of the amount of microplastics that is released into nature. The sources are numerous and the uncertainties are large but among the biggest sources, road traffic has been pointed out together with artificial turfs, boats, building facades, plastic production and waste water treatment plants. Occurrence in environmental matrices such as wastewater, landfill leachates and surface water varies and depends on several factors.

The filling and rinsing of bottles three times in the sampling process is recommended. The sampler should carefully take into account the presence of polymer contamination risk. Please wear all natural fiber clothing when taking samples (e.g. 100% cotton). Do not wear synthetic fleece. It can also be advantageous to perform the sampling against the wind direction.

Put screw top/lids back on as soon as possible after sampling. There is no need of conservation or cooling of sample prior to shipment to lab in Bergen. The samples are treated in polymer-particle free lab facility. We carry out blanks throughout the analysis process.
Micro plastic particles can be easily filtered from clean liquid samples with a vacuum filter. Filter papers will be assessed for the presence of suspected plastics with different methods. The presence of high volumes of particulate matter can make processing and identification more complicated.

For regulatory purposes the mass determination by Py-GCMS is most relevant and expected to become the most relevant analytical technology. The Py-GCMS is a very specific method to determine particles of individual polymer types of all sizes.

Py-GCMS offer the possibility of analyzing the chemical composition of rubber particles despite these difficulties. Common tire rubber constituents such as polyisoprene from natural rubber (NR) and polybutadiene from butadiene rubber (BR) and styrenebutadiene rubber (SBR) can be used to indicate the presence of rubber particles in a filtrated sample.

References:
Tomasz Lachowicz, Janina Zieba-Palus, and Pawel Kszewczynski, Jagiellonian University, Faculty of Chemistry, Krakow, Poland, Analytical Letters, 46, 2337-2344, 2013.
QUESTIONS AND SHIPMENT

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