

# Microplastics Analysis

Recognising the major global environmental problem that microplastics present, Eurofins is at the forefront of providing testing solutions to identify the prevalence of microplastics in our environment



"Microplastics are everywhere. When we wash our clothes, they shed fibres, and a lot of those fibres are synthetic. Those microplastics find their way into the sewage treatment plants."

"Most of the micro plastics do not break down in the wastewater treatment process. They are concentrated into biosolids, which then get applied to agricultural land, creating a loop where microplastic pollution gets back into the food chain."

Dr. Bob Symons, Eurofins Environment Testing

## Types of Samples

Eurofins microplastics analysis methods have been developed and validated to measure microplastics in a range of samples including :

- Biota (mollusks, mussels, fish, prawns)
- Sand
- Drinking water (tap and bottled)
- Surface water (rivers and lakes)
- Seawater
- Groundwater
- Food products (salt, tea bags, rice)
- Wastewater (influent, effluent, biosolids)
- Sediments (sand, soil)
- Consumer products (coffee cups, personal care products)



Approximately 80% of plastic waste from land can end up in our waterways and eventually end up in marine environments (Jamie et al., 2011).

## Infra-red imaging

Using an innovative laser direct infra-red imaging (LDIR) system, Eurofins not only identifies the polymers present but also the size of the microplastic particles. In addition, high-resolution images are taken, this is especially useful for particles greater than 500µm and ≤5 mm to characterise the particles as to whether they are films, fibres, foams, spheres etc. Eurofins now offer Microplastics Analysis reporting on:

- Polymer ID
- Quantity
- Colour
- Morphology
- Size



## Reporting Parameters

All samples will be analysed for the eight most common microplastics detected in the environment (polyethylene, PE; polystyrene, PS; polypropylene, PP; polyvinyl chloride, PVC; polyethylene terephthalate, PET; polycarbonate, PC; polymethylmethacrylate, PMMA; and polyamide, PA)

- Total number of microplastics per sample
- Total number of each polymer per sample

## Field Sampling

Eurofins supplies glassware that has been specially prepared in order to reduce the presence of MPs for most matrices.

For waters we have adopted ASTM D8332-20, Standard Practice for Collection of Water Samples with High, Medium, or Low Suspended Solids for Identification and Quantification of Microplastic Particles and Fibres that provides for the collection of water samples with high, medium, or low suspended solids to determine the presence, count, polymer type, and physical characteristics of microplastic particles and fibres. This collection practice has been validated for the collection of samples from drinking water, surface waters, wastewater influent and effluent (secondary and tertiary), and marine waters.

Water samples are passed through stainless steel filters or sieves of adequate mesh size to enable capture of the smallest desired particle size. For waters with high or medium suspended solids content, a series of sieves with increasingly smaller mesh size (stainless steel stacked sieves (20 µm, 50 µm, 150 µm, 300 µm, 500 µm, 1000 µm and/or 5000 µm) are used to prevent clogging and allow for the collection of desired particle size fractions. Typically 24-hour composite samples are collected with volumes of between 1,500 and 5450 litres.

**Please contact the laboratory for advice on the protocols for the collection of samples.**

## Quality Assurance

Each batch of results will be accompanied with both positive and negative controls. Positive controls (Laboratory Control Samples), negative controls (Method Blank). Recoveries of reference materials for both polyethylene and polystyrene of different particle sizes are added to each sample to monitor recoveries throughout the extraction and clean-up steps. All analyses are conducted in a positive pressure laboratory along with good laboratory practises in order to reduce or negate background impurities.



Environment Testing

Contact us Today

email: [MicroPlasticsAUS@eurofins.com](mailto:MicroPlasticsAUS@eurofins.com)

Eurofins Environment Testing Australia Pty Ltd | ABN: 50 005 085 521

[www.eurofins.com.au/environmental-testing](http://www.eurofins.com.au/environmental-testing)

Sydney Melbourne Brisbane Perth Adelaide Darwin Newcastle Geelong Wollongong Auckland Christchurch