Producing plastic to reduce plastic

PRefs®
Plastic Reference Materials

Plastic pollution is globally recognised as a planetary boundary threat to humans and our environment.

Our beaches and marine sediments are contaminated, organisms have plastic particles in their stomachs, and microplastics are found in our drinking water and food.

There is a clear desire, at an international level, to implement effective mitigation strategies to reduce inputs into the environment and lessen the impact of those plastics already there.

The challenge is that no certified reference materials (CRMs) currently exist to address this problem.

The PRefs project will create plastic reference materials to support the identification, characterisation and quantification of microplastics.

About PRefs

PRefs, established in partnership with Innovation Norway and Chiron, is an evolving portfolio of plastic reference materials consisting of the six most environmentally prevalent plastics: PE, PET, PS, PP, PVC and PC, with particle size distribution ranging from 50-300 micron.

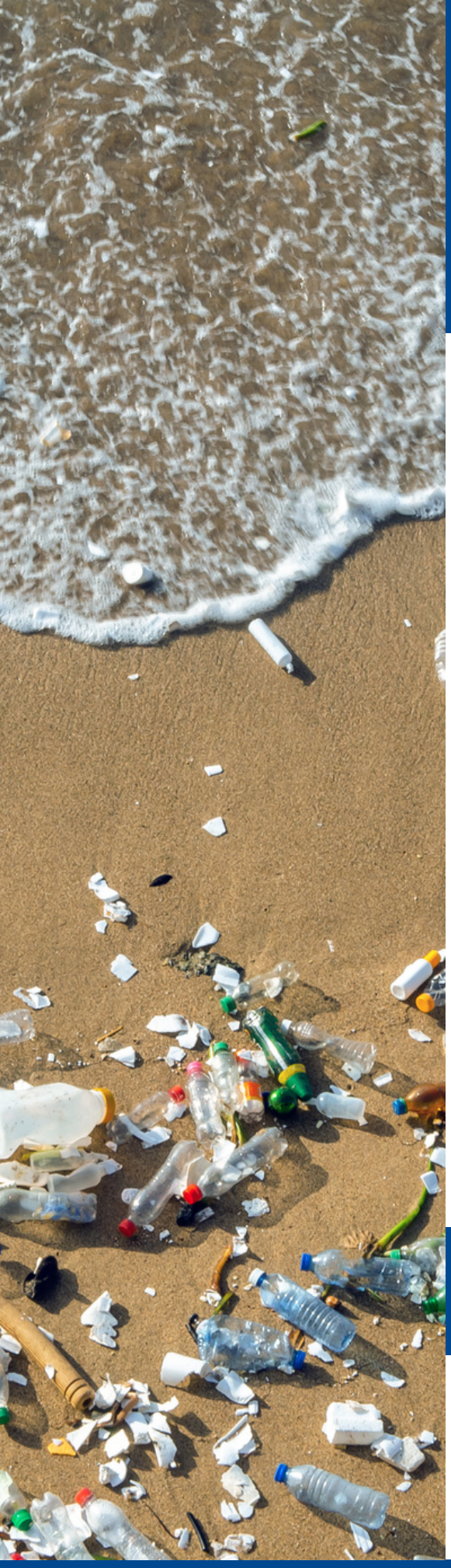
PRefs will produce plastic reference materials to support researchers in establishing:

- Polymer types
- Quantity of particles present
- Particle size
- Mass of polymers present

The three sub-brands, MacroPRefs, MicroPRefs and NanoPRefs, will each specialise in microplastics of different sizes and provide its own respective reference materials.

A phased approach will be adopted, starting with macro and microplastics and finally progressing onto the more challenging nanoplastics to complete the suite.

Macro PRefs® Micro PRefs® Nano PRefs®



In addition to bulk CRMs for individual polymers, PRefs will create CRM tablets containing known amounts (number of particles and/or mass) of single virgin and weathered MPs.

These tablets are user-friendly and are designed for the reliable creation of calibration curves to accurately quantify plastics in test samples using both optical and mass spectrometry-based methods.

PRefs will also manufacture bulk CRMs containing mixtures of three polymers across the three size ranges.

EUROqCHARM

The PRefs brand has developed from the former EUROqCHARM project, an EU project established in partnership with NIVA (the Norwegian Institute for Water Research) and other partners (www.euroqcharm.eu).

The EUROqCHARM project critically reviewed state-of-the-art analytical methods and validated them through an interlaboratory comparison (ILC) study. It initiated the research into the methods needed for monitoring plastic pollution and produced candidates which contributed to the establishment of microplastic monitoring reference materials, now known as **PRefs**.

Innovation Norway and Chiron partnership

Innovation Norway is the Norwegian Government's instrument for innovation and development of Norwegian enterprises and industry, aiming to assist Norwegian businesses to grow and find new markets.

Chiron, headquartered in Trondheim, Norway, is a world leading producer and supplier of advanced chemical products and high-quality reference standards, with an extensive portfolio consisting of native compounds, internal standards (deuterated, 13C, fluorinated), metabolites and custom mixtures.

Together, Innovation Norway and Chiron will fund and develop the PRefs project to produce plastic CRMs to quantify the true scale of plastic pollution.

Interested in plastic reference materials?

We are interested in hearing your questions and comments and recording interest in our project. Scan the QR code to keep informed of the latest product availability.

Chiron – your PReferred supplier of Plastic Standards

Innovation Norway

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