

Micro Plastic in Environment and Research – Tasks and Challenges

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Federal Environment Agency Germany (UBA)

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Microplastics (MP) are small plastic particles found in the environment. Their occurrence in coastal waters has been known since the beginning of the 70s. In recent years, various scientific publications have brought attention to the increasing contamination of aquatic systems. The size and composition of plastic debris can vary immensely – however: there is a lack of definition.

The occurrence of macroplastic debris in aquatic environments and their interactions with biota such as birds, fish or turtles by means of ingestion or other contact are relatively well known. Potentially, MPs can be ingested by an even wider range of biota increasing the risk of bioaccumulation of polymers and associated chemical compounds. Entry, distribution, behavior and effects of MPs in freshwater ecosystems including drinking water are largely unknown, and research on the long-term ecological consequences of these contaminants in surface waters is still in its infancy.

The sources of different plastic materials are diverse. Treated wastewater is assumed to be an essential path for surface waters as indicated by recent studies on wastewater from washing machines. Rainwater runoff might also be a source of MP due to particles washed out in the air or on soils, but this has not yet been investigated. The ratio between primary and secondary MPs in the environment is as yet unknown. Interactions with organic pollutants, pathogens and nanomaterials are suspected. Transitions into the organisms are largely unknown.

Hence, there is still a huge gap of knowledge with respect to MP. Some research projects are running or are in preparation. However, these are rather more or less individual activities at EC, Member State or regional level. So far, the entire life cycle of plastic products is not taken into account.

The workshop aims to discuss:

1. What is the scientific state-of-the-art knowledge on micro plastic?
2. What are the challenges in current micro plastic research?
3. Which topics are currently not under investigation?
4. What could or should be the future priorities in the micro plastic research?

Agenda

Dietrich Borchardt, Helmholtz Center for Environmental Research

Moderator

Gunnar Gerdt, Alfred Wegener Institute-Helmholtz Center for Polar and Marine Research

Microplastics in the marine environment

Christian Laforsch, University of Bayreuth

Microplastics in the limnic environment

Bruno Tassin, Université Paris-Est

Microplastics in the urban environment