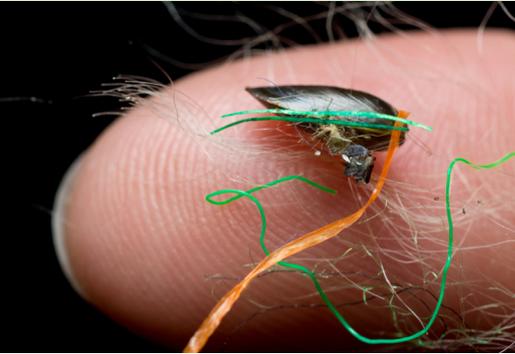


# Microplastics from textiles

## What causes it and how it can be avoided



Mussel from the Baltic Sea; entangled with microplastics.

Photo: © Wolf Wichmann

*„Consumers can reduce microplastics by using their clothes for a long time. Manufacturers should take responsibility for their production processes and the disposal of their textiles.“*

Caroline Kraas, WWF Germany

Microplastics in the environment are a widely discussed topic. Even our clothing contributes significantly to this problem, as it is estimated that around 20 to 35 percent of the total microplastics input is caused by fiber abrasion from textiles. With every washing cycle, tiny particles are released from synthetic clothing, which can then enter the environment via wastewater.

### What causes textile microplastics and how do the particles enter the environment?

Household laundry is an important input pathway for textile microplastics into the environment. Both during washing and drying of synthetic clothing, microplastic particles are released from textiles, e.g., through mechanical processes such as friction, and enter the sewage treatment plant via the wastewater. The particles that are not filtered out by the wastewater treatment plant are released into the environment, especially into bodies of water. Particles can also be released during the textile production process and when clothing is worn. Once in the environment, microplastic particles remain there and cannot be removed. In nature, living creatures can ingest textile microplastics via their food or become entangled in fibres and suffer damage as a result.

### Preventing the release of microplastics from textiles: Here's what you can do

When washing clothes, you can make sure that the washing machine is fully loaded to reduce the mechanical friction of the garments against each other (and the release of microplastics). Fiber residue from washing and drying that remains in the washing drum or lint filter should be disposed of with residual waste, not wastewater. Wearing clothing for a long time can also have a positive effect, as new clothing usually releases a particularly large amount of microplastics during the first few washing cycles.



Under the microscope the fiber-like structure of textile microplastics is clearly visible.

Photo: © Niederrhein University of Applied Sciences

## Research to reduce the input of microplastics from textiles

The „TextileMission“ project aims to reduce the input of microplastics into the environment caused by the domestic washing of synthetic sports and outdoor clothing. An interdisciplinary approach

is being pursued, which includes the analysis of microplastics emissions in washing tests as well as the development of sustainable textiles and the optimization of wastewater treatment.



The wastewater collected during the various washing tests was filtered through this filter cascade by the researchers at Niederrhein University of Applied Sciences. The filtrate was weighed and subsequently further analyzed.

Photo: © Carlos Albuquerque

## Production processes and disposal are preventable sources of microplastics

Both in production processes in the textile industry and in the disposal of clothing, the issue of microplastics must be addressed systematically. For example, new textiles should be treated before sale to prevent them from releasing large amounts of microplastics during the first few washes. Disposal must be coordinated so that no textiles enter the environment uncontrolled and contribute to the microplastic problem in the long term.

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