
Washing Machine Filters Reduce Microfibre Emissions

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Abstract

Washing clothing is a known pathway for microfibers to reach the environment. Previous research has investigated microfiber capture close to the source (i.e., the washing machine), and demonstrated washing machine filters as a potential mitigation strategy. Widespread deployment into homes may be an effective solution to prevent microfiber emissions. Here, we investigated the effectiveness of washing machine filters at the level of a community. We installed filters in 97 homes in a small town, representing approximately 10% of households connected to the municipal wastewater treatment plant (WWTP). We evaluated treated final effluent and found a significant reduction in microfibers after filter installation. Furthermore, lint samples from filters revealed an average weekly lint capture of 6.4 g, equivalent to 179,200–2,707,200 microfibers. This research shows that microfiber filters on washing machines are effective at scale, and this result can help inform policy decisions to reduce microfiber emissions from laundering textiles.

Keywords: microfibers, microplastics, textiles, washing machines, mitigation, wastewater treatment

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