**Global Challenges/Chemistry Solutions**

**Promoting Public Health: Household washing machines are a source of potentially harmful ocean “microplastic” pollution**

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Today’s solution warns that household washing machines seem to be a major source of so-called “microplastic” pollution — bits of polyester and acrylic smaller than the head of a pin — that scientists now have detected on shorelines worldwide.

Mark Anthony Browne, Ph.D., of the University College Dublin, who authored the study, explains that this microplastic pollution is potentially harmful.

*“Accumulation of microplastic debris in marine habitats is raising health and safety concerns. The bits of plastic contain harmful ingredients which when ingested transfer into the bodies of animals and could be transferred to people who consume shellfish and fish. Ingested microplastic can transfer and persist in their cells for months.”*

How big is the problem of microplastic contamination? Where are these materials coming from? To answer those questions, the scientists looked for microplastic contamination along 18 coasts around the world and did some detective work to track down a likely source of this contamination in the report, which appears in ACS’ journal *Environmental Science & Technology*.

*“Using forensic techniques, we found more microplastic on shores in densely populated areas, and identified an important source — wastewater from household washing machines. Indeed, more than 1,900 fibers can rinse off a single garment during a single wash, and these fibers look just like the microplastic debris on shorelines.”*

The problem is likely to intensify in the future, and the report suggests solutions.

*“Designers of clothing and washing machines should consider the need to reduce the release of fibers into wastewater. Research is needed to develop methods for removing microplastic from sewage and determine which fibers pose less of a problem for habitats, animals and humans. It is difficult to finding funding for this necessary research and we are hoping that industry and government soon realize its importance and provide more.”*

**Smart Chemists/Innovative Thinking**

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