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EPA Microfiber Pollution Report Sets Stage For Regulation

By **Byron Brown and Preetha Chakrabarti** (September 30, 2022, 2:47 PM EDT)

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A new draft report by the federal government cites textiles and the fashion industry as the leading sources of microfiber pollution in the environment.[1]

While the draft report acknowledges uncertainty about how microfiber pollution affects the environment and human health, it may lay the groundwork for future regulation.

The report's authors recommend that the textile and fashion industry — along with manufacturers of clothes washers and dryers and personal care products — redesign their products to prevent microfibers from being released into the environment.

In recent years, the issue of marine debris and plastic pollution has garnered the attention of not only the environmental community but also policymakers on Capitol Hill and in states across the country.

Enacted in 2020 on a bipartisan basis to address problems associated with marine debris and plastics in the ocean, the Save Our Seas Act 2.0 directed the Interagency Marine Debris Coordinating Committee to prepare a report for Congress that included a definition of microfiber, examined the sources of microfiber pollution, and recommendations for reducing microfiber pollution.

Prepared by the U.S. Environmental Protection Agency and the National Oceanographic and Atmospheric Administration on behalf of the IMDCC, the draft report has been made available for public comment, which closes Oct. 17.

Companies or organizations, ranging from textile manufacturers and fashion designers to personal care product companies and large appliance producers, should consider providing comments in response to this latest report and offering their own perspectives on potential concerns about microfibers and ways to prevent their release into the environment.

The report highlights how microfibers have been observed throughout the oceans, lakes and other bodies of water across the globe, and are also commonly found in the air, soil, animals, drinking water and food for human consumption.

It cites several studies that have raised concerns that microfibers themselves can injure animal tissue, cause intestinal blockages and inflammation in certain organisms, and that they may increase exposure to chemicals and heavy metals.

Clothes washing is identified as a major source of microfibers, because almost no residential washing machines in the United States have filters to capture microfibers from entering wastewater systems.

The report also cites textile manufacturing, clothes drying with machines that vent to the atmosphere, improperly discarded cigarette filters, and wastewater treatment plants and biosolids, as other sources of microfibers that can spread throughout the environment.

According to the report, textile waste accounted for 5.8% of all municipal solid waste in 2018, up from 3.9% in 2000, and that more than 11 million tons was landfilled in 2018.

The report calls on the textile and fashion industry to reduce its waste and to develop manufacturing processes that reduce pre-consumer microfiber emissions and to design fabrics that are low-shedding during use or laundering.

It also calls on the EPA to review and update Clean Water Act effluent limit guidelines for the textile industry. Separately, the EPA had already announced plans[2] to update the effluent guidelines for the organic chemicals, plastics and synthetic fibers point source category,[3] with a proposed rule expected in September 2023.

The report encourages guidelines and incentives to reduce microfiber discharges and emissions from washing machines and dryers, personal care products, and the food and beverage industry, pointing to the apparent effectiveness of several after-market filters used to capture microfibers during the laundering process, as an example — although noting the need for additional research on the use of filtering technology.

The report also recommends additional research to fill other gaps in data, especially concerning the prevalence of microfibers in all environmental media and potential impacts to human health and the environment.

The report's authors also note that no single definition exists for the term "microfiber," which has made it difficult for scientists and policymakers to communicate consistently when discussing the scope of the problem and how humans and the environment are affected.

For example, some limit the term to mean synthetic fibers such as polyester or nylon, whereas others include natural fibers such as wool that are chemically treated and semisynthetic fibers that are derived from naturally occurring materials such as cellulose.

Further adding to the confusion, the report explains that the textile industry has used the term microfiber since the 1950s to describe a type of ultrafine synthetic fiber used in a variety of products and the term fiber fragment to mean the part of fiber that breaks off or sheds from fabric. Different scientists and organizations also use different size measurements to distinguish between microfibers and other fibers.

The state of California passed a law in 2018 that required the State Water Resources Control Board to establish a definition of the term microfiber by July 1, 2020, and to develop standard methodology for

testing drinking water for microplastics, following on a similar effort by the European Chemicals Agency to establish a definition for microfiber.

The draft report relied on those efforts to propose the following definition:

> Microfibers are solid, polymeric, fibrous materials: to which chemical additives or other substances may have been added, and which have at least two dimensions that are less than or equal to 5 mm, length to width and length to height aspect ratios of greater than 3, and a length of less than or equal to 15 mm.

Excluded from the proposed definition are natural fibers that have not been modified by chemicals.

The establishment of a standard definition for the term "microfiber" could be the first step toward future regulation. Several bills to mandate the use of filters or other controls on washing machines or to require clothing labels to instruct consumers to hand-wash to prevent microfiber shedding have been introduced in the California Legislature in recent years but have not been enacted.

However, Connecticut enacted a law in 2018 that required the state's environmental regulator to convene a working group with representatives of the fashion industry and to develop a publicity campaign to reduce microfiber pollution, including changes to brand care labels attached to clothes.

With retail and consumer products companies more and more focused on their environmental, social and corporate governance metrics, it will be important for them to monitor how the government continues to tackle issues like microfibers.

A standardized definition of "microfiber" could shake up how companies are currently measuring their environmental impact, particularly those companies engaged in textile and appliance manufacture, and laundry operations, e.g., hospitality and commercial laundries.

Companies that are already making moves to reduce the release of microfibers should heed the follow-up from this report lest such reduction efforts are wasted.

Finally, the concerns the report raises are not singular to consumer-facing companies, but affect the entire supply chain as well, so informing supply chain partners of what comes next will be essential.

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[1] https://www.govinfo.gov/content/pkg/FR-2022-09-15/pdf/2022-19939.pdf.

[2] https://www.reginfo.gov/public/do/eAgendaViewRule?pubId=202204&RIN=2040-AG10.

[3] https://www.epa.gov/eg/organic-chemicals-plastics-and-synthetic-fibers-effluent-guidelines.