

Cos. Should Track Microplastic Research And Regulations

By **Tara Paul and Willis Hon**

The increasing prevalence of microscopic plastic particles, known as microplastics, in oceans, living organisms and drinking water has become a major emerging concern for environmental regulators in the U.S. and internationally. The pervasiveness and persistence of microplastics in the marine environment have been well documented.

There remain significant research gaps on the impacts of microplastics on human health. Nonetheless, many jurisdictions are pressing forward by adopting law and promulgating regulations aimed at addressing these ubiquitous pollutants.

Underscoring the difficulty of the challenge for the regulatory community is the fact that there is currently no universally agreed-upon definition for microplastics. Plastic particles constitute a very broad family of substances, made up of different chemical compositions, existing in different shapes and sizes.

The influence of these and other parameters on the dispersion of microplastics in the environment, and on their human health impacts, are not fully understood. As with per- and polyfluoroalkyl substances and other emerging environmental contaminants of concern, the regulatory framework for microplastics is being developed concurrently with the latest scientific research on their characteristics and effects.

California's Progress on Microplastics

In the U.S., California has led efforts to try to understand and address the impacts of microplastics. In 2018, the state passed a pair of bills relating to microplastics, S.B. 1263 and S.B. 1422.

S.B. 1263 requires that on or before Dec. 31, 2024, the California Ocean Protection Council, in collaboration with other specified entities, adopt and implement a statewide microplastics strategy, and authorizes the specified entities to enter into contracts with marine research institutes for the provision of research services that would contribute directly to the development of the strategy.

The goal of the strategy is to develop a framework for evaluating the impacts of microplastics on the marine environment, and to provide options for source reductions and product stewardship techniques.

Earlier this year, the California Ocean Protection Council partnered with the California Ocean Science Trust to convene an interdisciplinary working group. The working group is made up



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of scientific experts who have been charged with developing a risk assessment framework for microplastic pollution in California, identifying information gaps that hinder risk assessment, and providing guidance on future research to fill those information gaps.

S.B. 1422 required the State Water Resources Control Board, or SWRCB, to develop, by July 1 of this year, a definition of microplastics in drinking water, and to adopt, on or before July 1, 2021, a standard methodology to be used in the testing of drinking water for microplastics, as well as requirements for four years of testing and reporting of microplastics in drinking water, including public disclosure of those results.

On June 16, California, through the SWRCB, adopted an official definition of microplastics in accordance with S.B. 1422, becoming the first state in the nation to do so: "Microplastics in Drinking Water" are defined as solid polymeric materials to which chemical additives or other substances may have been added, which are particles which have at least three dimensions that are greater than 1nm and less than 5,000 micrometers (μm). Polymers that are derived in nature that have not been chemically modified (other than by hydrolysis) are excluded.

The SWRCB's definition additionally notes that "evidence concerning the toxicity and exposure of humans to microplastics is nascent and rapidly evolving, and the proposed definition of 'Microplastics in Drinking Water' is subject to change in response to new information," or in response to advances in analytical techniques and methods.

The SWRCB is expected to take action to fulfill the other mandates of S.B. 1422 by July 1, 2021:

- Adopt a standard methodology to be applied in testing drinking water for microplastics;
- Adopt requirements for four years of testing and reporting of microplastics in drinking water, including public disclosure of the results;
- Consider issuing a notification level or other guidance to aid consumer understanding of the results and testing requirements; and
- Accredit qualified laboratories in California to analyze microplastics.

Developments on the State and Federal Level

On the federal level, relatively little has been done to advance broad-based regulation of microplastics in water systems. In February, the U.S. House and Senate each introduced legislation that would create a pilot program for the development of research into microplastics.

As described in the Senate legislation, titled the MICRO Plastics Act of 2020, the program would "test the efficacy and cost effectiveness of tools, technologies, and techniques to (1) remove microplastics from the environment, and (2) prevent the release of microplastics into the environment." The U.S. Environmental Protection Agency would be tasked with oversight authority and required to test contaminant and removal technologies used at stormwater systems, waste treatment facilities and drinking water systems, as well as inland waterways and estuaries.

On the state level, a handful of states have passed legislation concerning the use of larger plastic materials and microbeads that pollute state waters. For instance, California, Illinois, Minnesota, New York and Ohio have implemented regulations banning the use of microbeads in personal care products, particularly microbeads used in body soaps, exfoliates and the like. However, none except California have taken additional steps to implement regulations addressing microplastics as a water quality standard.

In the absence of regulation, environmental advocates and stakeholders have started pushing to address microplastics through litigation. Earlier this year, environmental groups in Hawaii sued the EPA for failing to require the state to include waters impacted with microplastic pollution on its 2016 or 2018 lists of "impaired waters" under the Clean Water Act.[1]

Section 303(d) of the Clean Water Act requires each state to identify water bodies that fail to meet the state's water quality standards, and list them as "impaired" waters. The EPA then evaluates that list to determine whether it meets the requirements of environmental laws and regulations.

The complaint filed in this case alleges that the state of Hawaii failed to evaluate available data on microplastics, and because it did not include waters that failed to meet applicable water quality standards due to microplastic pollution, the EPA should not have approved the list. Following the lawsuit, the EPA withdrew its approval of Hawaii's 2018 impaired waters list, requesting further information from the state's Department of Health on the prevalence of microplastics.

Moving forward, state regulators may encounter similar pressure to consider available data on the presence of microplastics in their Section 303 compliance under the Clean Water Act.

Developments in Europe

In the meantime, the European Union has stood out as an early leader in efforts to regulate both larger plastic litter and microplastics. However, most of those efforts have been geared toward regulating the production of plastics in the economy and their disposal, and reducing the presence of plastic litter in oceans.

Corresponding regulations addressing microplastics in freshwater systems or drinking water have not yet emerged. Nevertheless, the region may serve as an indicator for where the American regulatory field is headed.

In 2008, the EU adopted the Marine Strategy Framework Directive, aimed at improving marine environments within the EU's jurisdiction, including achieving reduction in plastic litter. It required each member states to develop strategies for protecting marine environments, including establishing monitoring programs and setting targets for achieving "good environmental status" by 2020.

Good environmental status is defined by means of 11 qualitative descriptors, and the relevant criteria for those descriptors includes "trends in the amount, distribution and, where possible, composition of micro-particles." In 2018, member states began a second cycle under the directive, to continue monitoring and environmental assessments to either improve or maintain good environmental status progress made.

The EU has also stepped up its efforts to regulate the prevalence in consumer products. In September 2018, the European Parliament voted to endorse a report from the European

Committee on the Environment calling for an EU-wide ban on intentionally added microplastic substances and microbeads in cosmetics, soaps and detergents, among other products, and to set minimum requirements for use of the particles in textiles, tires and other products by 2020.

The decision was in furtherance of the EU's Strategy for Plastics in the Circular Economy to address the prevalence of plastics in the environment by improving their design, use, production and recycling. The strategy endorses a cradle-to-cradle approach for plastic products to create incentives and opportunities for reuse, thereby recapturing plastics that might otherwise contribute to health hazards and pollute the environment.

In response to the European Parliament vote, the European Chemicals Agency published a proposal in January 2019 restricting the use of microplastics under the Registration, Evaluation, Authorization and Restriction of Chemicals regulations, which address the production and use of chemical substances. The proposal includes examples of potential definitions for microplastics sampled from other member countries (as well as U.S. states) that already regulate them in similar products.

Some of the examples are similar to California's definition, and target insoluble synthetic particles less than 5 millimeters (or 5,000 micrometers) in size. The proposed ban is expected to be submitted to the European Commission for review later this year.

Potential Implications for the Regulated Community

Because California's new definition for microplastics in drinking water was promulgated under the state's Safe Drinking Water Act, its application is limited to those entities regulated under the act — specifically, any public water system that provides drinking water "through pipes or other constructed conveyances that has 15 or more service connections or regularly serves at least 25 individuals daily at least 60 days out of the year."

Nevertheless, since most California residents receive their drinking water from such systems, the new regulation will have significant statewide impacts. Entities that are not directly affected should anticipate future requirements that may impact their operations, especially with the development of more data and knowledge around the health impacts of microplastics.

States should also anticipate future litigation under the Clean Water Act, as well as the potential for federally mandated National Pollution Discharge Elimination System permits, or cleanup obligations.

Finally, changes in the regulatory field are also likely to have important implications for certain industries that use microplastic materials in their products, or whose products may otherwise be connected with such contaminants. As new regulations relating to microplastics continue to be promulgated, both domestically and abroad, the unique challenge of even classifying what will fall under the formal regulatory definition of microplastics in each jurisdiction presents substantial uncertainty for stakeholders.

This underscores the need for companies to stay on top of the latest developments in order to fully comprehend the extent to which new regulations may affect their operations — and the particular manner in which those effects may manifest.

As with other emerging contaminants where the regulatory framework is unfolding concurrently with the latest research on environmental and health impacts, companies must

properly consider microplastics in their long-term planning, not only by taking into account existing laws and regulations, but also by incorporating reasonable contingencies and adequate reserves in anticipation of possible future regulatory developments.

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[1] Center for Biological Diversity v. U.S. Environmental Protection Agency, Case No. 1:20-cv-00056-ACK-KJM (D. Hawaii, filed Feb. 5, 2020).