Actions Cos. Can Take Now To Address Microplastics Risk

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Microplastics are increasingly in the news and a topic of debate, including among environmental regulators, companies and members of the public. In just the past few months, momentum has built to the point that California became the first state to issue a regulation defining microplastics, and is now launching a regulatory effort that will impose a testing regime, which would eventually provide the data for to regulate microplastics directly.

Recent articles and documentaries have raised concerns that these small particles of plastic are ending up in global water systems, and that they could have adverse effects on the environment — e.g., potentially affecting the digestive tracts of marine animals — and ultimately on human health.

On Oct. 30, Science Advances published an article identifying the U.S. as a major contributor to ocean plastic pollution, and in November, an organization named Oceana released a report asserting that ingestion of microplastics is to blame for many marine animal deaths.

Though the World Health Organization recently pointed to a lack of evidence that microplastics in drinking water can hurt humans, state governments are proceeding to issue regulations, and plaintiffs lawyers are beginning to file lawsuits — which means that the need to understand the science is critical to ensuring a responsible regulatory and scientific response to this issue.

Microplastics are the classic emerging contaminant: something that the scientific community has identified as potentially of concern, but for which hard effects data is lacking, and for which the need for, and method of, regulation remain open questions.

For stakeholders who produce or utilize microplastics in their operations, this article identifies regulations and liabilities that might exist, and explores what companies can do now to manage risk while the landscape is evolving. Companies should consider coordinating microplastics expertise, tracking technical/medical studies, reviewing insurance policies, developing guidance for sampling/containment/permitting/disposal, and conducting a risk evaluation.

What are microplastics?

Though no universally accepted definition of microplastics currently exists, they are generally classified as small plastic pieces less than five millimeters in length. In general, they originate from large plastic refuse that sequentially degrades into smaller and smaller (hence microplastics) pieces. Microplastic beads have been around about half a century, according to the United Nations Environment Programme.

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The U.S. Environmental Protection Agency has not yet adopted a definition of microplastics. States regulators are starting to adopt definitions, as a prelude to imposing regulatory requirements, like monitoring, concentration limits for drinking water and industrial wastewater discharge limits, among others.

In 2020, the California State Water Resources Control Board was perhaps the first regulatory body to adopt a microplastics definition, with an upper limit of 5 millimeters and a lower limit of 1 nanometer, covering an impressive range of six orders of magnitude.

How do we know if — and how much — microplastics are present in water or air?

A major challenge, typical of all emerging contaminants, is the lack of an industry standard for testing for its presence as the technology evolves. And the cost of testing is high.

As incremental progress occurs, accepted and less expensive test methods will surely develop. For now, though, current research indicates no standardized test method. Both spectroscopy and mass spectrometry are employed with different chemistries, significantly different labor requirements — i.e., cost and timing differences — and currently, unknown comparability.

Beyond that, no method currently can provide a particle count number below one micrometer — which becomes problematic when state agencies define microplastics to include particles one thousand times smaller than tests can measure accurately.

In addition, test methods need to account for the possibility that microplastics may contain additives, and be attached to other substances or microbes that create interference in analytical methods. This can complicate measurement, and impact toxicity levels or compound environmental risk.

This is a clear example of how the science of measurement is connected to understanding risk. Companies and regulators alike require clear measurements, because without them, response steps and new regulations may address the wrong problem or no problem at all — or they may fail to address an important concern that would be evident with accurate and uniform testing.

How will microplastics be regulated?

Regulations tend to take the form of limits (like concentration in water) or outright bans (like the pesticide DDT). To date, regulatory developments on microplastics are in the nascent, information-gathering stage at the federal level, and even in states that are beginning to take action.

California has begun development of regulations addressing microplastics as a water quality standard. And California, Illinois, Minnesota, New York and Ohio have implemented regulations banning microbead usage in personal care products.

Several federal regulatory regimes are being bandied about by stakeholders as providing potential authority to regulate microplastics. Under the Clean Water Act, some suggest that the EPA should mandate that states identify water bodies that fail to meet the state's water quality standards and list them as impaired waters. While the EPA currently has a water quality standard on the books for trash, none exists for microplastics. So the EPA would have to develop a new water quality standard.

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Earlier this year, an EPA regional office withdrew approval of Hawaii's 2018 approved list of impaired waters because the state had not adequately addressed information regarding plastic trash. Advocates for regulation argue that the Clean Water Act should also be used to regulated microplastics under the act's discharge permit program, which requires any company that discharges water from a point source into a water of the United States to hold a permit that sets discharge limits for contaminants.

Companies must periodically test and report discharge results. Some have suggested that the EPA and states should set case-by-case technology-based effluent limits under the national permit program. But others highlight the lack of current analytical methods to measure microplastic levels.

The Clean Water Act's effluent limitations, guidelines and standards could also address microplastics in industrial stormwater and wastewater. These are technology-based, using the performance of treatment and control technologies, and are set whether or not there is risk or impacts of pollutants upon receiving waters.

One of the most talked-about statutes in this area is the Safe Drinking Water Act, which could be used to require monitoring of water systems and issuing naximum contaminant limits for microplastics. Even now, the EPA is regulating microplastics under so-called turbidity requirements — which regulate the cloudiness of water caused by quantities of individual suspended particles generally invisible to the naked eye.

Another candidate for microplastic regulation is the Clean Air Act — the most likely avenue of argument being to treat microplastics as a particulate. Fine particulates are already subject to national ambient air quality standards, and proponents argue that the EPA could require particulate components to be separately regulated.

Putting aside that the EPA has not traditionally asserted authority to regulate components of fine particulate, undertaking such regulation would first require the agency to establish an accepted standardized test method. And this would require a regulatory process, to propose the details of the test method and take comment on it. This illustrates how challenging it is to launch regulation with an emerging contaminant — particularly when the science of measurement is evolving.

Finally, while other statutes like the Resource Conservation and Recovery Act, Superfund, the Endangered Species Act, the Pollution Prevention Act, the National Environmental Policy Act and the Ocean Dumping Act could come into play, the recently-revamped Toxic Substances Control Act, or TSCA, which substantially expanded and strengthened the EPA's regulatory authority, could be a preferred choice for proponents of microplastics regulation, since the EPA will already be active in that space.

Four years after passage of the statutory amendments, some advocates argue that the EPA could and should use TSCA Section 4 authority to require testing where the agency suspects microplastics of presenting an unreasonable risk to health or the environment, Section 6's risk evaluation process to impose restrictions, and Section 8's information-gathering authority to fill data gaps on existing chemicals.

Could there be claims of historic liability for microplastics?

With environmental contaminants, the traditional liability model includes forward-looking regulation, historical cleanup and legal action between parties for traditional harms — e.g., common law claims. On

top of action on microplastics on the regulatory front, litigation is already in progress.

In February, a group of environmental advocacy groups sued a group of industrial companies, claiming that the historic sale of products in plastic packaging constituted a public nuisance, because, in their view, it was foreseeable that the plastic packaging would be misused and pose risk to waterways, coasts, oceans and marine life. Such lawsuits face substantial uphill battles, including on procedural issues like standing.

These plaintiffs will clearly face hurdles in establishing that they have particularized injuries as compared with society as a whole, that the defendants' actions caused their injuries and that the court can make a ruling that would redress the injuries. In addition, a host of other defenses are available.

Some have argued that these cases are an analog to a series of lawsuits that have been brought by cities, counties and state governments against oil and gas companies, claiming that the emissions of their fossil fuel products by third parties constituted a public nuisance by causing climate change.

The climate nuisance suits are mostly in the midst of court decisionmaking about whether they should be decided in state court or federal court, with the plaintiff governments seeking adjudication in state court and the defendant companies asserting that federal courts have jurisdiction.

To date, those courts that have reached the substance of the climate claims have dismissed the cases. The plaintiffs in the microplastics cases will face these same obstacles, and perhaps additional ones.

Since regulations have not been issued yet, what can companies do now to minimize risk of cleanup liability or lawsuits by third parties?

Confronting a widespread emerging contaminant such as microplastics can be daunting, making it tempting to wait for the full picture to develop before taking action. But there are risks to inaction.

For example, various regulatory bodies could act in an uncoordinated manner, resulting in numerous state standards that may even be inconsistent with one another, which can cause compliance challenges and create an uneven playing field for companies. Even worse, while knowledge of health effects, availability of substitutes and relative benefits of products for society evolve, companies could face knee-jerk regulations that actually ban some products.

An action plan that prioritizes science and transparent regulatory advocacy is key to protecting a company's interests going forward. The following are potential components of a company action plan on microplastics.

Coordinating, Analyzing and Reviewing

This involves three elements: coordination of microplastics expertise and activities within the company; analysis of medical and technical studies that would inform regulatory decisions so they are science-based; and review of key documents, like companies' insurance policies or insurance policy requirements for contractors.

A well-coordinated action plan for dealing with microplastics includes all of the organization's stakeholders, such as research, operations, environmental, health, safety, government relations,

communications and legal. It is a mistake for the environmental team to collect samples and generate data without the awareness and input of the company's legal department. Similarly, government relations should ensure positions on legislation align with operations.

The importance of the science can be illustrated through past experiences. Like per- and polyfluoroalkyl substances — a class of contaminants which has emerged over the past 10 years as a potential candidate for regulation — the science on microplastics is still developing, with technical and medical studies published almost daily.

Companies should track these studies to identify and support data helpful to regulatory advocacy, with development of consistent standards, regulatory certainty, sound science as a basis and a cost/benefit balance as the goals.

The company's insurance policies, and its requirements for contractor insurance, should be reviewed to maximize potential for coverage and preservation of rights. This should cover all potentially applicable insurance policies and all conditions, exclusions and time restraints on coverage in those policies, so companies are prepared to respond and meet the requirements to obtain their coverage.

Ensuring Standardization of Sampling, Testing and Permitting

When dealing with contaminants like microplastics — which are measured in micrometers and nanometers — cross-contamination and interference can create incorrect analytical results and data. Generating quality data requires rules of the road for sampling techniques, clothing and approved laboratories and analytical methods. Ensuring standardization may involve developing guidance documents for sampling, managing and permitting.

Management of wastewater should be reviewed to identify containment, treatment capability and the potential to isolate noncontaminated wastewater to reduce hydraulic loading in the treatment process. Companies also need to review product recovery, recycling and cleanup procedures for opportunities to minimize microplastic waste.

A strategy for addressing microplastics in permit actions positions facilities well for compliance. Finally, a list of prequalified waste disposal facilities under contract will limit future liability.

Investigating the Past, and Considering the Future

To estimate the risk to a company's health and well-being, investigate company sites with historical use of microplastics — but do it through the legal office. Consider including divested and nonoperating sites, joint ventures and multiparty sites with comingled operations, so that potential liability for cleanup is assessed.

Consider conducting the investigation under the attorney-client privilege, to protect the analysis from discovery to the extent possible. A strategic approach might be to conduct a qualitative analysis before embarking on quantitative analyses and generating data that could be used against the company.

It is helpful to identify potential alternatives and replacement strategies, either after investigating or independently. The best way to eliminate a risk is to remove it altogether — at least going forward. If companies can identify potential microplastics replacements for their operations and products, they may

be able to mitigate future liability.

Replacement strategies take into account cost, risk and timing needs. Like site investigations, these highly sensitive analyses should occur under attorney-client privilege to protect the analysis from discovery to the extent possible.

Conclusion

Microplastics are the classic emerging contaminant, and create the perfect storm for companies looking to address them. They are mobile, persistent and have a widespread environmental presence.

Analytical technologies and methods are uncertain and still being developed. Health impacts and health risks are not known. Finally, there is expansive media coverage on both local and national levels, with daily articles and documentaries.

The need to understand the science is critical to ensuring a responsible response to this issue. To date, the scientific community has pointed out microplastics as a potential concern, but does not have hard data on their effects. Regardless, state governments are proceeding to issue regulations, and plaintiffs lawyers are beginning to file lawsuits. Therefore, companies should not sit back and wait for the full picture to develop — and there are several actions they can take now.

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