Despite growing public and scientific attention, the true risk of microplastics to the environment and human health remains unclear. Earlier in 2018, the World Health Organization (WHO) issued a report calling for more scientific research into microplastics, which will be the first step in addressing the intractable issue.

Standardization in microplastics testing will be key for concrete regulatory actions to follow. An awareness builds from consumers, organizations and scientists all over the world, so does the pressure to act now.

“The lack of standard methods for sampling and analyzing microplastics in the environment means that comparisons across studies are difficult. To better assess human health risks and inform management actions, a number of research initiatives are underway,” said Dr. Maria Neira, WHO Director for the Department of Public Health, Environment and Social Determinants of Health.

“While the need for more data is urgent, some steps can be taken now to mitigate the impact on human health and the environment. For example, the United Nations Environment Programme has called on countries to landfill or incinerate waste plastics, to review national waste policies, and to eradicate the production and distribution of microbeads,” said Dr. Neira.

What is being done?

“Many countries and regions have expanded their efforts to combatting the global issue of plastic pollution and are at the forefront of research in this area. For example, the United States, the European Union and China have implemented or are planning measures to combat microplastics in the environment and marine ecosystems,” said Dr. Simon Batt, Director of Agilent’s Sustainability and Environmental Initiatives.

“Through the company’s expertise in infrared spectroscopy and mass spectrometry, we continue to develop new solutions for microplastics testing. As recognition of the importance of microplastics increases, so too will the need for accurate methods and standards for analyzing them.”

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Microplastics testing

Spectroscopy techniques are a key component of modern analytical instruments and can be used to analyze microplastics in a variety of applications including environmental and personal care products. Gas chromatography combined with mass spectrometry can provide information about the concentration of microplastics, whereas infrared spectroscopy can provide sensitive and specific information about a sample. For example, Gas chromatography combined with mass spectrometry can be used to analyze the composition of microplastics, whereas infrared spectroscopy can be used to identify the type and shape of microplastics.

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