Microplastics – "The New PFAS?"

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Microplastics are defined as plastic particles between 1 nm and 5mm in size. They are being increasingly recognized as a significant environmental and public health concern. As with per- and polyfluoroalkyl substance (PFAS), their persistence in ecosystems, potential toxicity and widespread distribution make them a pressing concern for scientists, policymakers and communities around the world.

These particles originate from various sources, including the degradation of larger plastics,synthetic fibers from clothing, microbeads in personal care products and industrial plastic waste. Microplastics enter the environment through wastewater discharge, atmospheric deposition, and surface runoff, leading to contamination of water bodies, soil, and air.

Sampling and analysis of microplastics require specialized techniques such as filtration, spectroscopy, and microscopy to quantify and characterize them effectively in different environments. However, the lack of standardized methodologies presents a challenge for accurate assessment and delineation of the problem globally thereby impacting regulatory efforts. Existing policies for microplastics management vary, with some nations implementing bans on specific microplastic sources while others focus on monitoring and mitigation strategies.

Treatment methods to address microplastic pollution include advanced filtration systems, wastewater treatment innovations, and the development of biodegradable alternatives. While these approaches show promise, reducing plastic use at the source remains the most effective long-term solution.

This presentation will describe the problem of microplastics as environmental contaminants, highlighting their sources, the challenges in sampling and analysis, evolving regulations, and potential treatment strategies to mitigate their impact on the environment and human health.

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Dr. Terry Obal is the Specialty Testing Practice Leader for SGS North America. Terry's mission is to position SGS as a thought leader in the specialty testing and PFAS marketplace and ensure that customers have access to the latest scientific advancements and best practices. This mandate includes the design, development, and implementation of specialty testing programs in collaboration with key clients. Terry also provides technical representation, consultative support, and expert opinions for SGS clients and key environmental stakeholders.

Terry has almost 40 years of experience in analytical chemistry, laboratory management and environmental chemical consulting. He holds B.Sc., M.Sc., and Ph.D. degrees in chemistry, and is a Chartered Chemist (C.Chem.) through the Association of the Chemical Profession of Ontario (ACPO).