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TerraVerdae BioWorks Launches Ecological Microspheres

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An industrial biotechnology, TerraVerdae BioWorks released a line of biodegradable, natural microspheres to be utilized in cosmetic and personal care products in place of synthetic, non-degradable plastic microbeads. Microbeads have faced a regulatory backlash and were recently banned in Connecticut.

TerraVerdae is recognized for developing advanced bioplastics and environmentally sustainable biomaterials. The recently launched microspheres meet the American Society for Testing and Materials (ASTM) industry standards for biodegradation in a marine environment. According to a press statement, the company's natural microspheres are a PHA-based biomaterial produced using a non-GMO, non-toxic, plant-associated process.

To meet all cosmetic formulations requirements, TerraVerdae is able to produce microspheres in various sizes and diverse finishes, such as smooth or coarse and features high optical clarity and mechanical characteristics.

"With our bioprocess technology, we can design a responsible solution for cosmetic and personal care products that is environmentally sustainable and that has the exfoliation performance that consumers seek," said William Bardosh, CEO and founder of TerraVerdae BioWorks, in the statement.

Since the 1990s, cosmetic manufacturers use synthetic plastic microbeads as abrasives in various personal care products. According to a statement, due to their small size—0.5 microns—the microbeads pass through filtration systems of water treatment plants and flow into many freshwater bodies, which can attract toxic pollutants and can then be consumed by fish, birds and other wildlife. With one container of personal hygiene containing 300,000 or more microbeads, scientists found microbeads concentrations to be as high as 1.1 million per square kilometer in the Great Lakes.

"The scale of pollution found recently in the Great Lakes as a result of plastic microbeads used in personal care products has been dramatic and concerning," said Bardosh, in the statement. "Our biodegradable, environmentally safe microspheres have all the performance characteristics that cosmetic manufacturers demand of current polyethylene plastic products, but they rapidly and safely break down in the marine environment, leaving behind no harmful solids."