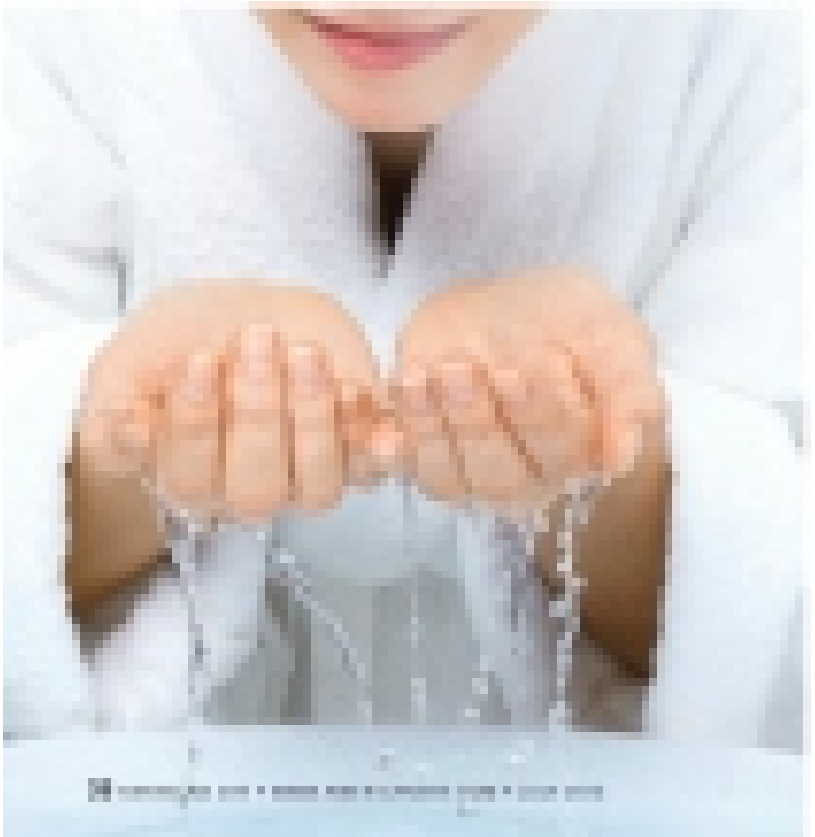
Banning the Bead

Discover the creative natural solutions skincare manufacturers have developed to exfoliate the skin.

PLASTIC POLLUTION IS A GROWING PROBLEM in oceans and waterways worldwide. Offenders include fishing gear as well as plastic bags, bottles and caps that break down into tiny particles. Microbeads, which are used in cleansers, scrubs, soaps, toothpastes, and many other skincare and personal care products are major culprits when washed down the drain. In fact, the same little beads that help slough dead skin and exfoliate the skin are also polluting the seas. "Microbeads are causing quite a stir in the environmental world," says Linda Lazar, co-founder and vice president of Lazar Natural General Skincare. "The plastic waste caused by these microbeads, which are not filtered out during sewage treatment, is damaging entire ecosystems and killing marine life."

According to a study titled "Microplastics Pollution in the Surface Waters of the Laurentian Great Lakes," published Dec. 15, 2014, in the scientific journal *Marine Pollution Bulletin* by Sherry Mason of the State University of New York at Fredonia, high concentrations of microplastics of similar size, shape, texture, and composition to plastic microbeads found in many consumer products such as exfoliants were found in the Great Lakes. Some research suggests that the number of microbeads found in the Great Lakes is on the low end of millions, making it one of the most polluted. But that's not our world's waterway. These plastic microbeads are causing pollution problems in oceans and waterways worldwide. As a result, Colorado, Illinois, Indiana, Maine, Maryland, and New Jersey have passed legislation to restrict the use of microbeads and similar bills are pending in California, Michigan, Minnesota, New York, Ohio, Oregon, and Washington according to the National Conference of State Legislatures.



Tiny Threats

Microbeads, also known as polyethylene beads, are chemically synthetic thermoplastic

continued on page 40

continued from page 36

polymer's shape-memory properties. In addition to offer being a cost effective method, these coated plastic spheres, which are less than five millimeters in size, have three common uses in cosmetics and skincare, says David M. Ferrazzo, Ph. D., chief scientist at Innovative Therapy. In cleansers, microbeads help exfoliate the skin, in lotions and creams, they contribute a silkiness to the application, and in any cosmetic formulation microbeads can be used to provide a light absorbing or light reflecting color effect. "A light absorption can be used to provide a visual sensation to the product or to match the skintone of a customer," says Ferrazzo. "So a light reflecting material, the microbeads can occupy less regions of interest and diminish the appearance of darkness that sometimes the look of fine lines specially."

Despite the benefits they offer and the fact that they are generally considered safe to skincare, microbeads can, in some cases, cause irritation or harm to the skin. "Educating clients on the dangers of plastic beads and the harm they cause to the environment is crucial," says Brittany Gardner, director of sales and education at Mydentity Lab. "Plastic microbeads can oftentimes break apart as they are massaged into the skin, causing small micro lacerations in the skin's delicate top layer, which is why we other textures such as jojoba seed are essential."

As for the environment, there is no doubt that they cause serious harm. "The danger in this when plastic microbeads are washed down our drains, they're too small to be captured by water treatment plants thus ending up in our oceans, lakes, and rivers, posing a danger to wildlife," says Natalie Fergus, lead skincare master artist at Nature Organic Skincare. Fish and other marine organisms often consume the beads because they mistake them for food, which can then lead to the toxic beads entering the food chain where the other contaminants can be problematic. According to the Mydentity educating e-infographic created by The 5 Gyres Institute to raise awareness of the issue, a single product can contain thousands of microbeads, and they could constitute up to 93 percent by volume of a single product. Products that list polyethylene or polypropylene on the label contain microbeads. You can also download the free Microbead app, which allows users to easily check if a product contains microbeads by scanning the product's barcode.

Top: Lipstick tube, Bottom: L'Oreal products contain microbeads, microbeads make a complex image

Alternative Healing

Because of the environmental issues, many manufacturers have started using alternatives to plastic microbeads in their skincare products. "There is an array of fantastic, natural and sustainable alternatives to plastic microbeads available today," says Jenna Lihanny, vice president of research and development at Spectrum Discovery. "Depending on the desired alternative, such options include responsibly sourced jojoba spheres, coral bamboo, acacia, and polyhydroxybutyrate, which is derived from the fermentation of sugars. Nutshells found seeds and nuts and pure sugar and salt are other wonderful natural alternatives." Because natural scrubs can sometimes harvest ingredients in shapes that can abrasive to the skin, Richard Ai, chemical engineer and product development manager at Dermaviduals, recommends the company's Natural Jojoba Cleansing Beads Scrub, which is made with hydrogenated jojoba oil in

continued on page 42

"There is an array of fantastic natural and sustainable alternatives to plastic microbeads available today"

continued from page 8

[illegible] particularly [illegible] Whether they're [illegible] [illegible] the skin, [illegible] [illegible]. "The beauty in [illegible] is that [illegible] of natural and [illegible] to the skin," says Lee.

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