March 16, 2025

Dear Members of the House Environment and Natural Resources Committee,

My name is Charles Paul and I live in Barrington. I am writing to you today about bill H5492, the Microplastics Reduction Act. My training (PhD) and career (>40 years) have been in the field of polymer science, of which "plastics" is a sub-field.

I fully support the bill for several reasons. We are each processing microplastics in our bodies. This cannot be good. It should not be facilitated – and need not be. We should understand better what is happening and what we can do about it.

Microplastics (defined as less than 5mm (1/5 inch)) break down over time upon exposure to the elements into nanoparticles (1000 or more times smaller), and these have been shown to enter human cells – showing up in arterial plaques, in lungs, human milk, and even the brain.[1] Even if they carry no especially toxic extractable materials, which many do, these solid, surface active, foreign bodies can only cause problems. The effects on humans of these foreign particles is under intense investigation. To date the only controlled studies are on rodents, and behavioral changes have been documented which suggest brain impairment.[1]

The bill would ban the sale or distribution of products containing synthetic polymer microparticles. Where are these used? Mostly in personal care or cleaning formulations to provide "grit". There are alternatives. Inorganic particles, from rock deposits, while harder to suspend in formulas, will work. Wood fiber derived cellulose nanoparticles are being marketed as an alternative. These particles degrade readily in waste treatment. There is simply no compelling use case where there is no alternative.

Especially concerning for Rhode Island is that they end up in seafood and at the highest levels in mollusks – oysters, clams, and mussels.[1] Unwelcome stuff in your stuffie!

Most concerning in my view are the nanoparticles that are broken off from tires. These contain polyaromatic oils and aromatic amines – both suspect carcinogens.

Rhode Island like many other governments needs to stop the needless pollution of our waters with added microplastics and stay on top of the best science to characterize the issue in the state and to address the issue as mitigation strategies are evolving.

Please vote yes on H5492.

(1) Chemical and Engineering News, Nov. 25, 2024, p.18-20.
Note: this news magazine is published weekly by the American Chemical Society, the largest professional society representing the Chemical Industry.