February 9, 2024

Vermont Bill S.197
RE: PFAS Related to Fluorination and the Viability of Alternatives

Senators Lyons, Gulick, Watson and Wrenner,

I am writing to you in support of S.197 and the importance of protecting the public and the environment from insidious sources of PFAS contamination in pesticides and fluorinated packaging. My name is Kevin Callahan, and I am the Chief Operating Officer for BP Polymers, LLC ("BPP"). BPP offers a unique, proprietary resin, Kortrax® (patent-pending), that can be added to high-density polyethylene ("HDPE") to create various types of packaging imbued with barrier properties. Unlike surface modification barrier treatments such as fluorination, Kortrax® is free of PFAS contamination and the adjoining environmental and public health effects. BP Polymers Kortrax® can be found in a wide variety of industries including agricultural chemical, flavors and fragrances, industrial chemicals, healthcare, and beauty. BPP provides proven technologies that benefit users and consumers every day.

Fluorination plays a prominent role in the packaging industry and many consider it to be a critical and essential process to create a successful barrier against the leakage of aggressive substances. However, fluorination comes with its drawbacks – PFAS contamination being one of them. Though PFAS contamination is not a concern with all types of fluorination, it is present within the most widely used types of fluorination processes. Proponents of fluorination argue that PFAS contamination related to fluorination is a new discovery and, if true, only a minimal amount of PFAS is generated by the process. Moreover, they claim that there is little to no transfer of PFAS to the contents housed within fluorinated containers. Yet, the presence of PFAS in fluorinated HDPE is not a novel issue and has been demonstrated as far back as 2011.[1] Furthermore, studies indicate that there is a high rate of transferability of the PFAS generated by the fluorination process into the contents of fluorinated HDPE containers, including food products.[2]

The PFAS associated with the most common fluorination processes comes with alarming environmental and public health effects. PFAS has a significant negative impact on an assortment of bodily systems, and the most hazardous types, including PFOA and PFOS, are bioaccumulative and almost impossible to remove.[3] Additionally, as we now know, these chemicals are everywhere – in our water, packaging,

[1] Rand, A. A., & Mabury, S. A. (2011). Perfluorinated Carboxylic Acids in Directly Fluorinated High-Density Polyethylene Material. *Environmental Science & Technology*, *45*(19), 8053–8059. https://doi.org/10.1021/es1043968.
[2] US EPA, O. (2022, September 12). *EPA Releases Data on Leaching of PFAS in Fluorinated Packaging*. Www.epa.gov. https://www.epa.gov/pesticides/epa-releases-data-leaching-pfas-fluorinated-packaging.
Whitehead, H. D., & Peaslee, G. F. (2023). Directly Fluorinated Containers as a Source of Perfluoroalkyl Carboxylic Acids. *Environmental Science & Technology Letters*. https://doi.org/10.1021/acs.estlett.3c00083.
[3] Fenton, S. E., Ducatman, A., Boobis, A., DeWitt, J. C., Lau, C., Ng, C., Smith, J. S., & Roberts, S. M. (2020). Per- and Polyfluoroalkyl Substance Toxicity and Human Health Review: Current State of Knowledge and Strategies for Informing Future Research. *Environmental Toxicology and Chemistry*, *40*(3), 606–630. https://doi.org/10.1002/etc.4890.

BP Polymers, LLC
1020 Carrington Place, Office No. 2
Charlottesville, VA 22901

O:949-633-1115
F: 434-956-4628
Barrierplastics.com

clothes, food, and more.[4] When you consider the breadth of exposure to PFAS on a daily basis, it is alarming to say the least. Looking at the scale of this issue, the American public has been robbed of their autonomy to decide for themselves the dose of this constant poison that they are exposed to. Fluorination is just one piece of the puzzle but an important one.

Although the fluorination industry may present themselves as the pinnacle of barrier technology, the reality is that there are a wide range of innovative alternatives - our product being one of them. BPP has been present in the market for more than ten years, but we have become more widely known after we came to the aid of Clarke Mosquito in 2020. After an EPA investigation led to the discovery of PFAS contamination stemming from fluorinated packaging, Clarke came to BPP looking for a PFAS-free alternative that could successfully contain their mosquito abatement products and be supplied on an expedited timeline. We successfully delivered on both counts. HDPE containers made with BPP's proprietary resin, Kortrax®, passed every rigorous test needed to demonstrate safe and effective containment of Clarke's products. Furthermore, Kortrax® imbued containers were shown to be PFAS-free. BPP worked with our manufacturing partners to meet Clarke's urgent demand for PFAS-free bottles, and, in the spring of 2021, Clarke mosquito transferred all of their container needs over to BPP. Today, we count them as one of our most loyal and passionate customers.

However, BPP is only one of many. There are multiple resin barrier products, such as EVOH, that compete with fluorination and perform successfully without concerns about PFAS.[5] Moreover, many of these alternatives are present within the fuel tank market, demonstrating that fluorination's claim regarding its critical importance to the fuel tank industry is false.[6]

There have been concerns raised by proponents of fluorination of the economic and supply chain effects of a ban on fluorination in packaging. They argue that there will be significant disruption in various markets as companies transition over to alternatives, and widespread unemployment as workers in fluorination plants are laid off in response to regulations. However, the alternative packaging industry is poised to respond to this rapid change, as seen by BPP's response to Clarke mosquito, and our free-market, capitalist system thrives on innovative growth and competition. We are hopeful that this in it of itself will create new jobs and opportunities for the American workforce. Contrary to assertions made by the fluorination industry, popular fluorination processes that yield PFAS are not a necessary evil.

Statewide efforts to ban fluorinated HDPE and its role in pesticides are critical. The work of the Environmental Protection Agency ("EPA"), while important, takes time and many of EPA's PFAS enforcement actions have been challenged in ongoing litigation. Statewide responses are urgently needed to encourage a change in the market and protect consumers.

Brunn, H., Arnold, G., Körner, W., Rippen, G., Steinhäuser, K. G., & Valentin, I. (2023). PFAS: forever chemicals—persistent, bioaccumulative and mobile. Reviewing the status and the need for their phase out and remediation of contaminated sites. *Environmental Sciences Europe*, *35*(1). https://doi.org/10.1186/s12302-023-00721-8.

[4] Jeffrey Kluger (2023, May 19). *All The Stuff in Your Home That Might Contain PFAS 'Forever Chemicals.'* TIME. https://time.com/6281242/pfas-forever-chemicals-home-beauty-body-products/.

[5] www.kuraray.com, https://www.ulprospector.com/plastics/en/datasheet/137784/hyperier-ip1105.

[6] https://www.gemstarmfg.com/gemstars-rotomolded-acetal-fuel-tanks-are-viable-alternative-to-fluorinated-hdpe-tanks/, https://eval.kuraray.com/oursolutions/by-industry/automotive-fuel-tanks, https://www.envalior.com/en-us/products/akulon.html, https://www.ulprospector.com/plastics/en/datasheet/137784/hyperier-ip1105.

In conclusion, we support S.197 and the efforts to ban fluorinated HDPE packaging as a source of PFAS in pesticides. With the negative health effects of PFAS becoming more widely known, it is important to reduce exposure and reliance on processes that create these substances. However, considering the widespread use of fluorinated HDPE packaging across various industries, including food packaging, cosmetics, household cleaners, and healthcare, a more expansive ban focusing on the process that results in PFAS and less so the industry is vitally important. Proponents of the fluorination process will negate its negative health effects and argue for its role in the economy, but the reality is that we cannot avoid regulatory enforcement of a known health hazard. Therefore, we champion S. 197 but it is only the beginning and we urge a wider regulatory response to fluorination not limited to pesticides.

Should you have any questions or wish to further discuss this letter and the information contained therein, please do not hesitate to reach out as we welcome the opportunity to discuss fluorination alternatives in the marketplace.

Sincerely,

Kevin J. Callahan
COO of BP Polymers, LLC
Kevin@bppolymers.com