Performance Fluoropolymer Partnership

Please see the attached comments.

PERFORMANCE FLUOROPOLYMER PARTNERSHIP

December 28, 2024

Washington Department of Ecology
Hazardous Waste and Toxics Reduction
Olympia, Washington

RE: Draft Identification of Priority Products Report to the Legislature: Safer Products for Washington Cycle 2 Implementation Phase 2

Submitted electronically via
https://hwtr.ecology.commentinput.com/?id=9gHGTCx2EV&utm_medium=email&utm_source=govdelivery

On behalf of the American Chemistry Council's Performance Fluoropolymer Partnership,[1] thank you for the opportunity to comment on the Washington Department of Ecology's (hereafter "Ecology") report *Draft Identification of Priority Products Report to the Legislature: Safer Products for Washington Cycle 2 Implementation Phase 2*.[2] The Partnership's members are some of the world's leading manufacturers, processors, and users of fluoropolymers, including fluoroelastomers and polymeric perfluoropolyethers. The Partnership's mission is to promote the responsible production, use, and management of fluoropolymers, while also advocating for a sound science- and risk-based approach to their regulation. These comments focus on the consideration of architectural paint as a category of priority product.

Clarity of Definitions

It is our understanding that "architectural paint" is not a category of paints specifically defined in a standard or regulation or by the coatings industry itself. As such, Ecology's use of it requires qualification and detail.

In the draft report to the legislature, Ecology defines the product category as "coatings intended to be applied to the interior and exterior surfaces of buildings." We urge Ecology to further clarify the proposed product category, to specify that it covers coatings intended to be applied to residential and commercial buildings, but excludes coatings used on infrastructure such as bridges, water towers, and transmission towers, as well as structures such as airport terminals, train stations, and sports and entertainment arenas. As discussed further below, coatings used in these infrastructure applications differ fundamentally from the coatings typically applied to residential and commercial structures.

[1] https://fluoropolymerpartnership.com/
[2] Draft Identification of Priority Products Report to the Legislature: Safer Products for Washington Cycle 2 Implementation Phase 2 (November 2024, Publication 24-04-049)

We appreciate that Ecology clarifies the category in the draft technical support document that accompanies the draft priority products report when it states, "This category doesn't include automotive paints, special purpose, or industrial original equipment manufacturer coatings, applied in factory settings" (page 87). This is an important sentence that helps to clarify the definition of "architectural paint", and it should be included in the final report to the legislature.

Fluoropolymers

In the draft technical report, Ecology states, "Paints with polymeric PFAS, or fluoropolymer paints, can be used in applications where anti-corrosion resistance is needed due to harsh conditions of use (salt, moisture, corrosive chemicals)." As detailed in our white paper on fluoropolymer coatings (White Paper),[3] fluoropolymers provide those performance benefits and many others, including several that are essential for infrastructure applications. For example, fluoropolymer based coatings have an erosion rate that is roughly 50 percent lower than other coatings used in infrastructure applications, which, in part, is why fluoropolymer based coatings have a life expectancy of 50 years or more in many settings compared to 20 years or less for alternate technologies.[4] Similarly, fluoropolymer coatings have been shown to be resistant to UV light, which provides them with superior resistance to chalking and fading.[5] Because fluoropolymer-based coatings last two to three times longer than alternative coatings, structures with fluoropolymer-based coatings need to be repainted and maintained much less frequently, which results in substantially reduced exposures to people and the environment, compared to alternative coating technologies. Indeed, the Organization for Economic Cooperation and Development (OECD) indicates that due to the superior weather- and corrosion resistance of fluoropolymer-based coatings, bridges painted with fluoropolymer paints are expected to require repainting only once every 60 years.[6] In addition, according to a recent report from the US Department of Energy, fluoropolymer-based coatings can reduce building cooling costs and improve energy efficiency by up to 22%.[7] Fluoropolymer coatings also reduce building maintenance by extending building life, even in harsh environments, and they are resistant to contamination by dirt and pollution, which enhances their solar reflective and protective properties.[8]

Furthermore, fluoropolymers in paints are very much unlike other PFAS substances that have been found in drinking water, groundwater, and blood samples. For example, fluoropolymers are not soluble in water so they cannot enter drinking water or groundwater, and they do not degrade into smaller, water-soluble molecules. Also, fluoropolymers are not bioavailable or bioaccumulative nor do they degrade to smaller, bioavailable or bioaccumulative

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[3] https://fluoropolymerpartnership.com/wp-content/uploads/2023/12/PFP-White-Paper-on-Fluoropolymers-in-Infrastructure-and-Construction.pdf (hereinafter, "*White Paper*")
[4] *Id.* at 8.
[5] *Id.* at 11.
[6] OECD, *Per- and Polyfluoroalkyl Substances and Alternatives in Coatings, Paints and Varnishes (CPVs), Report on the Commercial Availability and Current Uses*, OECD Series on Risk Management, No. 70, Environment, Health and Safety, Environment Directorate, OECD, (2022) at 63.
[7] Savannah River National Laboratory, *Assessment of Fluoropolymer Production and Use with Analysis of Alternative Replacement Materials* (January 2024) at 2-11.
[8] *Id.*

molecules, so they do not present the toxicity concerns identified by Ecology. In addition, the fluoropolymers in paints and coatings are high molecular weight substances that do not exhibit the volatility (and the risk of inhalation exposure) highlighted as a concern throughout the draft report to the legislature and the supporting technical document. [9,10]

Ecology has understood for many years that fluoropolymers are a distinct group of PFAS. In its 2022 PFAS Action Plan, Ecology said of fluoropolymers:

> *Fluoropolymers have been found to have thermal, chemical, photochemical, hydrolytic, oxidative, and biological stability (Henry et al., 2018; Korzeniowski & Buck, 2019a). They are almost insoluble in water and not subject to long-range transport. With very high molecular weight (greater than 100,000 Da), fluoropolymers cannot cross the cell membrane. They are neither bioavailable nor bioaccumulative. Clinical studies of their use in medical devices has [sic] demonstrated lack of chronic toxicity or carcinogenicity and no reproductive, developmental, or endocrine toxicity.*[11]

Ecology has also acknowledged that fluoropolymers "are generally agreed to be inert and not bioavailable or bioaccumulative, suggesting minimal health impact."[12] Indeed, fluoropolymers are large, stable molecules that have been demonstrated to meet criteria that can be used to identify polymers of low concern for potential impacts on human health and the environment.[13] Those criteria include evaluation of:

- Structure and elemental composition;
- Molecular weight and the consistency of molecule size in a sample;
- Particle size;
- Presence of low molecular weight residuals that might leach from the polymer;
- Electrical charge;
- Presence and nature of reactive functional groups;
- Resistance to physical, chemical, and biological transformation; and
- Resistance to heat and other environmental stressors.

Because fluoropolymers have been shown to be of low concern for human health and the environment, Ecology should not spend limited time and resources assessing alternatives to fluoropolymers used in paints when other types of PFAS may possess the characteristics and behaviors of concern.

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[9] Henry, B.J. *et al.* 2018. A critical review of the application of polymer of low concern and regulatory criteria to fluoropolymers. Integr Environ Assess Manag, 14: 316-334, https://doi.org/10.1002/ieam.4035.
[10] Korzeniowski, S.H. *et al.* 2022. A critical review of the application of polymer of low concern regulatory criteria to fluoropolymers II: Fluoroplastics and fluoroelastomers. Integr Environ Assess Manag, https://doi.org/10.1002/ieam.4646.
[11] *Per- and Polyfluoroalkyl Substances Chemical Action Plan*. Hazardous Waste and Toxics Reduction Program Washington State Department of Ecology. Olympia, Washington. Revised September 2022, publication 21-04-04. Page 97. https://apps.ecology.wa.gov/publications/documents/2104048.pdf.
[12] *Id.* at 223.
[13] See references 8 and 9 above.

Fluoropolymer Based Paints Do Not Satisfy Statutory Criteria for Designation as a Priority Product

The Safer Products for Washington law requires that, in deciding whether to designate a priority product under the law, Ecology must consider the potential for the priority chemical to be found in the environment when the product is used, disposed, or has decomposed, "with priority given to surface water, groundwater, marine waters, sediments and other ecologically sensitive areas."[14] As noted above, fluoropolymers are not water soluble and do not degrade into water soluble molecules. Therefore, fluoropolymers cannot migrate to surface waters, groundwater, or marine water and, to our knowledge, fluoropolymers have not been detected in those waters in Washington State.

Similarly, in assessing a potential priority product, Ecology must examine the potential for exposure of the priority substance to sensitive human populations or species when the product is used, disposed or has decomposed.[15] As noted previously, fluoropolymer coatings are highly resistant to abrasion (and the formation of dusts) and the fluoropolymers in coatings are non-volatile and non-soluble in water. Moreover, they are non-bioavailable. Because of these properties, it is highly unlikely that use or disposal of fluoropolymer-based paints would result in exposures to sensitive populations or species.

Finally, the statute directs Ecology to consider the volume of products made with the priority chemical as well as the availability and feasibility of safer alternatives.[16] According to OECD, the overall market penetration for fluoropolymer-based architectural coatings is "very low" comprising just 1% of the market for architectural protective coatings, suggesting that fluoropolymer-based architectural coatings are utilized only when needed for their superior weatherability, durability, and resistance to UV deterioration and degradation.[17] The relatively small degree of market penetration further supports the conclusion that the potential for environmental and human exposures to fluoropolymers from architectural paints is, at most, negligible. Finally, ample evidence indicates that there are no available alternatives that provide the same degree of protection as fluoropolymer-based architectural paints. For example, OECD points to several studies which show that alternatives to fluoropolymer-based coatings suffer from "much higher degradation" and demonstrate much lower weatherability and durability than fluoropolymer coatings.[18] Similarly, data presented in the White Paper indicate that fluoropolymer-based coatings used in outdoor applications degrade at 1/20th the rate of non-fluoropolymer alternative coatings and have a theoretical life of greater than 100 years, compared to less than 15 years for non-fluoropolymer alternatives.[19]

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[14] RCW 70A.350.030(2)(d)
[15] RCW 70A.350.030(2)(c)
[16] RCW 70A.350.030(2)(b)
[17] OECD, *Per- and Polyfluoroalkyl Substances and Alternatives in Coatings, Paints and Varnishes (CPVs), Report on the Commercial Availability and Current Uses*, *supra*, at 11; 21, 60.
[18] *Id*. at 55-56.
[19] *White Paper* at 53.

In short, fluoropolymer-based coatings do not satisfy the statutory criteria for designation as priority products. Due to their physical and chemical properties, including their insolubility and the lack of bioavailability, fluoropolymers are not likely to be found in the environment (including surface waters, groundwater, or marine water) and they are not likely to result in exposures to sensitive populations or species. Furthermore, substantial evidence confirms that, for critical applications, there are no currently available feasible alternatives to fluoropolymer-based coatings.

For all the foregoing reasons, we request that Ecology exempt fluoropolymers and fluoropolymer-based products from its potential future consideration of architectural paints.

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Thank you for the opportunity to provide these comments. Please contact me if you have any questions (Jay_West@americanchemistry.com).

Jay West
Executive Director
Performance Fluoropolymer Partnership