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RE: Comments on SPWA Draft Report to the Legislature on Regulatory Determinations from Students in ENV H 593, Department of Environmental & Occupational Health Sciences, University of Washington, Fall 2021.

Dear Marissa,

Thank you for this opportunity to comment on Ecology's Draft Report on Priority Consumer Products (Draft Report). Your involvement with ENV H 593, a University of Washington graduate-level journal club, has greatly benefitted the classroom experience and expanded our knowledge of state regulations, safer alternatives science and practice, and the implementation of our state's Safer Products for Washington Program. Below is a compilation of some student comments, as well as my own, for your program to consider in your review of the report, starting from general to specific.

1. **General Comment:**

"I think that regulating harmful chemicals in products that consumers use is very important and that Safer Products for Washington is working to do that. For the draft report I really like the way it was organized with a legislative report and the draft determinations at the beginning so you can just read those if you want the overview, but then each individual section on the different chemical classes does a good job talking about what products are being looked out [at] and how their determinations to restrict or not restrict was made. I like that they kept it simple by putting a lot of the background information in the appendices." – Graduate student comment

In reviewing many such drafts, I also would applaud Department of Ecology's approach for providing the detailed information on methodologies in the appendices so that the reviewer could understand the details but not lose the big picture. Methods chosen and applied in the various product-chemical sections provided ample justification for the methods chosen to evaluate available alternatives. This could be used as a textbook for how states could choose alternatives for complex chemical hazard assessment. – Elaine Faustman

2. **General Comment – Section regarding APEs:**

"I would suggest there be some involvement from laundromats and apartment complexes in stakeholder discussions. With specific replacements being proposed for detergents, it should be communicated to the industries that rely on and offer them why these changes are important and what hurdles they predict in actualization. Also I would suggest that tables including replacement product, benchmark level, and data levels come prior to product specific information. Within the field, it is easy to determine what information would be most relevant in these alternative proposals but to others unfamiliar the summary being first would benefit the flow of information. When key details are

communicated prior to the explanation paragraphs, these paragraphs will become easier to digest and apply. Overall, the document itself is strong and the system of review is logical. The process is convincing and provides clear guidance for the next steps in product regulation." – Graduate student comment

3. **General Comment – Generalize PFAS groups to a Stain- and Water-Resistance Treatments group:**

"Washington Dept. of Ecology identified three priority product groups that contain PFAS: leather and textile furniture and furnishings, carpets and rugs, and aftermarket stain- and water-resistance treatments. In both the carpets and rugs and the leather and textile furniture and furnishings product groups, the sources of PFAS in the product are premarket topical chemical treatments. The purpose of these treatments is to provide some level of water-stain resistance and make cleaning of surfaces easier. This aligns with the third product group, aftermarket stain- and water-resistance treatments, where the PFAS are added to improve stain and water resistance. For clarity to the public, these categories could be generalized to, "Stain- and Water-Resistance Treatments," to more directly say that PFAS chemicals are not integral components of a furniture/product itself but are really secondary treatments (whether before- or after-market). This expanded group would include items that are particularly relevant in Washington such as: rain jackets, water resistant boots/shoes, and other rain-proofed outdoor gear.

The report includes interesting discussion on, "whether the function provided by the priority chemical is necessary to meet the performance requirements of the priority product." This is important when discussing PFAS, and relates back to the suggestion of combining and re-naming the product groups to, "Stain- and Water-Resistance Treatments," where the addition of PFAS may not be a critical piece to the products function. If the product does require a higher level of water/stain/oil resistance, communication to consumers that the PFAS is critical to the coating, not the product, can help reduce consumer concerns around these products generally and focus interest on the coatings. For example, if a jacket requires a certain level of impermeability, it can be kept separate from other articles of clothing and washed as needed with specialized materials. Along this line, water/stain/oil resistant furniture can be reserved for high need scenarios (like hospitals) where preventing fluids/oils from permeating the outer surface is critical to thorough cleaning. This is less necessary in a residential setting where a consumer could purchase a couch with washable cushions and proceed to wash as needed (rather than apply coatings) [and reduce overall use and dependency on treatments]." – Graduate student comment

Ecology approached the very complex product-chemical combinations in this scenario should be applauded in taking a transparent and evidence-based approach to consider the alternatives. – Elaine Faustman

4. **Specific Comment – More specifics on breakdown of PFAS:**

"The hazard data presented in Table 19 represents many PFAS compounds, though the source of this data is unclear because the reference for the table includes seven GreenScreen assessments for some of these compounds. It was not noted which endpoints were based on primary data versus surrogate data. This is particularly interesting given the range of endpoints listed for this group of very similar compounds—suggesting that small changes in structure are related to significant changes in toxicity. This makes the choice of surrogate even more important. The report discusses the concerns around persistence and bioaccumulation of PFAS chemicals, where all PFAS chemicals with existing hazard assessments scored high or very high for persistence. Without further discussion of the potential

breakdown of PFAS chemicals, the statement, "*The majority of the data rich PFAS identified are PFAAs. The hazards of PFAAs are relevant because all PFAS are PFAAs,* ***break down into PFAAs****, or require PFAAs as part of the manufacturing process,"* needs more detail provided. This could include: structures that suggest potential breakdown, conditions (through specific uses) that would be optimal for breakdown, and/or human metabolism considerations for PFAS breakdown (children/adults/elderly?)." – Graduate student comment

Regarding the comments presented above, I would reiterate the importance of referencing the sources for hazard assessment and in particular, the need to date the various assessments as there can be significant differences in these actively researched hazard assessments associated with PFASs. – Elaine Faustman

5. **Specific Comment – Consider use/volume ratios with alternatives:**

"The report provides potential alternatives for each product group, however, it does not include general ratios of use volume, where chemical A is used X amount and alternative B would require 3X to perform the same function. These are important considerations and would be of interest to the public/consumers/manufacturers for practicality and cost comparisons." – Graduate student comment

The use/volume ratios with the alternatives are especially important in these studies and indicate that functionality can be complicated to calculate. That, however, does not mean these should be absent. The comment above highlights a critical component to add to the current draft. Some sensitivity analyses could be done to see how accurate the functionality data needs to be to change the decisions about acceptable alternatives. – Elaine Faustman

Conclusion

We encourage Ecology to consider these comments collected from students in class as well as the additional comments that I've provided. Again, we appreciated the opportunity to learn about SPWA and participate in the public comment process. Please do not hesitate to contact me regarding this submission. Special thanks to the students for developing these comments and to Marissa for facilitating access to the materials that Ecology had developed and presented through stakeholder engagement and the Ecology webpage for SPWA.

Sincerely,

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