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December 26, 2024

Washington Department of Ecology
300 Desmond Drive SE
Lacey, WA 98503

Re: Draft Identification of Priority Products Report to the Legislature: Safer Products for Washington Cycle 2

To Whom It May Concern:

Albemarle appreciates the opportunity to provide comments on the Washington Department of Ecology's ("Ecology") Draft Identification of Priority Products Report to the Legislature: Safer Products for Washington Cycle 2 (Draft Report). Albemarle is a global leader in flame retardant technology. Our flame retardants help enable the safe and reliable performance of many products that are critical to today's society, including building insulation. Our comments below on the Draft Report are offered to inform Ecology's future action related to the use of flame retardants in insulation.

1. **OFRs provide important flame retardancy to insulation materials.**

   Organohalogen flame retardants (OFRs) are used in insulation materials to protect building occupants and to ensure the safety and effectiveness of the insulation throughout its lifecycle. Federal and state building codes regulate the use of insulation and other combustible materials through fire safety standards (e.g., ASTM E-84 and NFPA 285, 286) and other performance requirements. Through the use of OFRs, stringent fire performance criteria for flame and smoke spread–as required by regulation–can be met. Ecology should ensure the availability of FRs that can meet building fire safety standards for use in insulation materials.

2. **Ecology should distinguish additive HBCD and TCPP from safe OFRs used in insulation.**

   Ecology's technical supporting document raises concerns regarding HBCD and TCPP, both additive flame retardants. Ecology points to environmental concerns around these FRs that include the potential to migrate from the insulation foam to the environment.

   Notably, many flame retardants used in building insulation today, including those produced by Albemarle, are larger additives that include polymeric as well as reactive systems. These do not have the tendency to migrate out of the polymer matrix into the environment and can be distinguished from HBCD and TCPP.

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Reactive flame retardants are designed to react with the molecular structure of the insulation and become part of the polymeric network. These FRs will not bloom on the surface of the flame retarded article. Because of their large molecular size and chemical structure, reactive FRs remain within the foam and minimize the likelihood of exposure. Additionally, they have low bioavailability and are thus unlikely to be taken up by the body or environment.

Further, additive flame retardants that include larger, polymeric systems can also have positive environmental profiles and be safe for their intended use. The basis of safety depends on many factors such as chemical structure, molecular size, structural and stereoisomeric aspects, etc.

Albemarle FRs used in insulation applications show no significant health hazards associated with acute toxicity, carcinogenicity, genotoxicity, reproductive effects, developmental effects, neurological effects, repeated dose effects, or effects via skin contact, further supporting their safety profile for both consumers and workers handling these materials.

For potential future regulatory purposes, Ecology should evaluate all FRs separately and avoid broadly classifying them into a single grouping. Additionally, Ecology should exclude non-blooming additive FRs (such as those with polymeric materials) and reactive OFRs used in insulation foams in this regulatory effort.

3. Safe OFR-based insulation provides important benefits.

In compliment to effective flame retardancy, safe OFR-based insulation offers well-recognized benefits compared to alternatives like mineral-based insulation. For example, spray foams based on reactive OFR technologies can provide up to two times the insulation R-values (i.e., higher energy efficiency, lower carbon footprint); improved sealing (better filling of gaps around piping or wiring, exclusion of radon); and improved structural integrity of walls and roofs[1].

We look forward to additional opportunities during the regulatory process to discuss with Ecology the characteristics of specific flame retardants used in insulation products. If you have questions or need clarification, please email me at jessica.bowman2@albemarle.com.

Sincerely,

Jessica Bowman
Senior Director, Regulatory Affairs

[1] https://www.greenbuildermedia.com/blog/insulation-r-values-chart