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Memorandum

To: Board of Pesticides Control
 From: Pamela J. Bryer, Ph.D. | Pesticides Toxicologist
 Subject: Update on Federal and State Actions on Fluorinated Pesticide Containers

June 9, 2023

Summary:

This memo summarizes the results of staff reaching out to the EPA for updates on container fluorination actions at the federal level. Staff have also outlined existing federal and Maine rules to clarify what is allowed in pesticide products as of spring 2023.

Updates from EPA:

At the annual Association of American Pesticide Control Officials meeting in March 2023, EPA presented recent PFAS regulatory achievements and developments of note:

- EPA announced it would soon release a review of the Lasee et al. 2022 paper. On May 30th, 2023 that review was released. Lasee et al. found high concentrations of PFOS in several (six out of ten) insecticides. In their paper, it was notable they found PFAS that did not correspond to the same individual types of PFAS found in previous container contamination studies. Additionally, the concentrations they found were significantly higher in concentration. For its review, EPA tested pesticides from the same containers used in the Lasee et al. paper and found no detections of any PFAS. In the accompanying press release, EPA describes the differences in methodology that lead to differences in results. Briefly, pesticide products are challenging to analyze due to the high concentration of chemicals in the product mixture. Lasee et al. used a method involving dilution to avoid matrix interference, while EPA used a different sample clean-up process. EPA's memo points to the sample prep steps leading to this difference in results. EPA also states that their methodology was 2,500 times more likely to detect compounds.
- EPA's Fort Mead Laboratory is set to release a new analytical method appropriate for analyzing PFAS in pesticides. (Related note: at the state level,

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there has been recent discussion about what method should be used for PFAS determinations. The standard PFAS analytical method, Method 537.1, has been inconsistent with results between different animal product types. There may be a shift in the standard methodology to an alternate method that is less likely to return false positive results.)

- EPA’s TSCA program has received nine Significant New Use Notification (SNUN) related to containers (not specifically pesticide containers). EPA requires manufacturers whose fluorinated containers leach PFAS to notify the agency via the SNUN process. EPA sued Inhance Technologies for not notifying the agency about PFAS that had migrated from containers. Inhance Technologies is the company that produced the original plastic containers of Anvil 10+10, a mosquito adulticide commonly used in aerial spray programs.
- EPA is working on a system that should allow public access to 6(a)(2) reports, also called “Incident Reports.” Manufacturers are required to send EPA incident reports when the company becomes aware of any of a number of problems with their products, including contamination issues. Companies are required under FIFRA to report to EPA within 30 days following the discovery of PFAS contamination in their pesticide products. It is unclear what this public-facing 6(a)(2) reporting will look like because portions of 6(a)(2) reports are protected health information while others are confidential business information. The system is expected to be live within the federal fiscal year.
- EPA is categorizing PFAS into groups to streamline the next regulatory steps of data call-ins and generating new standards. There is a challenge in generalizing across all individual PFAS when this chemical group has over 14,000 unique structures. EPA is currently working with 70 PFAS groupings and indicated that the number may increase.
- EPA recognizes four pesticide active ingredients and two inerts as PFAS (as of June 2023).

EPA PFAS Active Ingredients	EPA PFAS Inert Ingredients
Broflanilide (insecticide)	1,1,1,2-Tetrafluoroethane
Pyriproxyfen aka PYZ (insecticide)	1,3,3,3-Tetrafluoroprop-1-ene
Tetraconazole (fungicide)	
Hexaflumuron (insecticide)	

Status of pesticide container fluorination in Maine:

PFAS are not an allowable contaminant in pesticide products at both the state and federal levels. The following infographic points to specific pieces of law where these protections are found.

Statewide, PFAS are currently still allowed for use as a liner in containers and specifically in food contact surfaces; that practice will be ended in Maine as part of the intentional use ban taking effect in 2030.

Fluorination of containers, as commonly used on high-density polyethylene (HDPE) pesticide containers, is still allowed. Some fluorinated containers have been linked to the presence of PFAS in pesticide products. Different fluorination processes are said to change the amount of PFAS generated during container use, with an industry group saying no PFAS are generated with some methods. Vitale et al. 2022 conducted research funded through IPack-Chem Ltd that demonstrated no detectable concentrations of PFAS following in-mold fluorination of HDPE containers.

References

- Lasee, Steven, Kaylin McDermott, Naveen Kumar, Jennifer Guelfo, Paxton Payton, Zhao Yang, Todd A. Anderson. Targeted analysis and Total Oxidizable Precursor assay of several insecticides for PFAS. *Journal of Hazardous Materials Letters* Volume 3, November 2022. <https://doi.org/10.1016/j.hazl.2022.100067>
- Vitale, Rock J., Jared K. Acker, Stephen E. Somerville. 2022. An assessment of the potential for leaching of per- and polyfluoroalkyl substances from fluorinated and non-fluorinated high-density polyethylene containers. *Environmental Advances* Volume 9, October 2022. <https://doi.org/10.1016/j.envadv.2022.100309>