

European Chemicals Agency

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**Non-confidential comments for Annex XV restriction report:
Restriction on the manufacture, placing on the market and use of PFASs**

Dear Madam or Sir,

We welcome the opportunity to provide input on the restriction report regarding per- polyfluoroalkyl substances (PFAS). The [Food Packaging Forum](https://www.foodpackagingforum.org) (FPF) is a charitable, science-based organization at the science policy interface. FPF is dedicated to raising awareness for hazardous chemicals in and environmental impacts caused by all types of food contact materials (FCMs) and articles, including food packaging. Our work enables science-based decision making in the interest of protecting public health and the environment. As our expertise is mainly on chemicals in food contact materials, we focus our remarks on this aspect within the PFAS restriction report.

General Comments

These comments cover the following relevant topics: scope or restriction option analysis, and environmental emissions.

As already carefully outlined in the restriction report by the Member State authors, PFAS are intentionally present across a wide range of FCMs with clear evidence for their migration into food. This represents a direct exposure route for consumers and the environment. The recognized persistence of this class of synthetic chemicals implies that the planetary boundary for chemical pollution has been exceeded (Cousins et al., 2022), and human and environmental health are affected due to known hazards for specific class members, as the robust evidence shows. Ongoing emissions of a persistent chemical will lead to ever-increasing concentrations in the environment and ultimately result in toxic effects. In this way, persistence acts as a multiplier of toxicity (Scheringer, 2023). Therefore, in our view, swift regulatory action is warranted on the entire class of substances. Given the available evidence for notable emissions of a wide range of PFAS (at levels of up to 500+ ng/g) from fluorinated polymers and polymeric substances during their manufacturing and use phases (Lohmann and Letcher, 2023; Joudan, et al. 2023), the EU restriction should apply to them as well.

We are further providing additional, supporting information relating to two of the specific information requests on FCM sectors and (sub-)uses, as well as on emissions in the end-of-life phase. This includes a confidential attachment with information from our unpublished research that is currently undergoing peer-review.

Specific Information Requests

1. Sectors and (sub-)uses

Regarding the sector of: Food contact materials and packaging

Subuses of: Paper & board packaging and plastic packaging

A wide variety of PFAS are known to be used broadly and globally across various FCMs including in paper- and plastic-based materials and final articles as outlined in the restriction report. Our recent peer-reviewed and open access research has resulted in a systematic evidence map showing both the detected presence of PFAS in various FCMs, as well as their migration into food (Geueke et. al. 2022). This results in direct human (and also potentially environmental) exposure. Our follow-up study (currently under revision with the journal *Environmental Science & Technology*) shows the diversity of PFASs detected in FCMs, as well as the migration from FCMs into food. In addition, this study also provides an overview of these PFAS detected in humans from biomonitoring studies. In summary, this work highlights the lack of available hazard data for many of these substances. The results of this study combined with the identification of available alternatives (OECD, 2020) support the currently proposed restriction on all PFAS in food packaging and other FCMs that consumers interact with without derogations. We are providing ECHA with key information from this study in advance of its publication via a separate confidential attachment.

In addition, other recent peer-reviewed studies have been published related to PFAS in FCMs that we would like to make the committees aware of. They provide additional scientific evidence in support of the current restriction proposal (including presence in FCMs and feasibility of fluorinated plastic containers as a source of PFAS emissions and migration):

- Whitehead, H. D., & Peaslee, G. F. (2023). Directly Fluorinated Containers as a Source of Perfluoroalkyl Carboxylic Acids. *Environmental Science & Technology Letters*, 10(4), 350–355.
<https://doi.org/10.1021/acs.estlett.3c00083>
- Schwartz-Narbonne, H., Xia, C., Shalin, A., Whitehead, H. D., Yang, D., Peaslee, G. F., Wang, Z., Wu, Y., Peng, H., Blum, A., Venier, M., & Diamond, M. L. (2023). Per- and Polyfluoroalkyl Substances in Canadian Fast Food Packaging. *Environmental Science & Technology Letters*, 10(4), 343–349.
<https://doi.org/10.1021/acs.estlett.2c00926>
- Sapozhnikova, Y., Taylor, R. B., Bedi, M., & Ng, C. (2023). Assessing per- and polyfluoroalkyl substances in globally sourced food packaging. *Chemosphere*, 337, 139381.
<https://doi.org/10.1016/j.chemosphere.2023.139381>

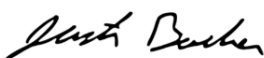
2. Emissions in the end-of-life phase

Considering the high persistence of this chemical class, the use of PFAS in FCMs is a concern for environmental health at the end-of-life phase, because PFAS can also be released into the environment once the FCMs become waste and are landfilled, composted, incinerated (at insufficient temperatures), or are littered (Goosen, et al. 2023, Reinhart, et. al. 2023). PFAS-containing FCMs therefore represent a viable source of PFAS emissions directly into the environment, especially when they are present in products intended for composting. As the migration of PFAS from FCMs has been demonstrated, this knowledge should be taken into account also when assessing the potential release of PFAS from other (non-FCM) products into the environment.

Cited Literature

- Cousins, I. T., Johansson, J. H., Salter, M. E., Sha, B., & Scheringer, M. (2022). Outside the Safe Operating Space of a New Planetary Boundary for Per- and Polyfluoroalkyl Substances (PFAS). In *Environmental Science and Technology* (Vol. 56, Issue 16, pp. 11172–11179). American Chemical Society. <https://doi.org/10.1021/acs.est.2c02765>
- Geueke B, Groh KJ, Maffini MV, Martin OV, Boucher JM, Chiang Y-T, Gwosdz F, Jieh P, Kassotis CD, Łańska P, Myers JP, Odermatt A, Parkinson LV, Schreier VN, Srebny V, Zimmermann L, Scheringer M and Muncke J (2022) Systematic evidence on migrating and extractable food contact chemicals: Most chemicals detected in food contact materials are not listed for use. *Critical Reviews in Food Science and Nutrition*, 1-11. <https://doi.org/10.1080/10408398.2022.2067828>
- Goossen, C. P., Schattman, R. E., & MacRae, J. D. (2023). Evidence of compost contamination with per- and polyfluoroalkyl substances (PFAS) from “compostable” food serveware. *Biointerphases*, 18(3). <https://doi.org/10.1116/6.0002746>
- Joudan, S., Gauthier, J., Mabury, S. A., & Young, C. (2023, May 4). *Aqueous Leaching of Ultra-Short Chain PFAS from Fluoropolymers: Targeted and Non-targeted Analysis*. <https://setac.confex.com/setac/europe2023/meetingapp.cgi/Paper/13576>
- Lohmann, R., & Letcher, R. J. (2023). The universe of fluorinated polymers and polymeric substances and potential environmental impacts and concerns. In *Current Opinion in Green and Sustainable Chemistry* (Vol. 41). Elsevier B.V. <https://doi.org/10.1016/j.cogsc.2023.100795>
- OECD (2020). “PFASs and Alternatives in Food Packaging (Paper and Paperboard) Report on the Commercial Availability and Current Uses”, OECD Series on Risk Management, No. 58, Environment, Health and Safety, Environment Directorate, OECD. <https://www.oecd.org/chemicalsafety/portal-perfluorinated-chemicals/PFASs-and-alternatives-in-food-packaging-paper-and-paperboard.pdf>
- Reinhart, D. R., Bolyard, S. C., & Chen, J. (2023). Fate of Per- and Polyfluoroalkyl Substances in Postconsumer Products during Waste Management. *Journal of Environmental Engineering*, 149(4). <https://doi.org/10.1061/JOEEDU.EEENG-7060>
- Scheringer, M. (2023). Innovate beyond PFAS. *Science*, 381(6655), 251–251. <https://doi.org/10.1126/science.adj7475>

Kind regards,



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