

September 22, 2023

Comments for Annex XV Restriction Report on the Manufacture, Placing on the Market and Use of PFASs; Evidence for Question 3: Emission in the End-of-Life Phase.

Submitted via the webform made available by the European Chemicals Agency at https://comments.echa.europa.eu/comments_cms/AnnexXVRestrictionDossier.aspx?RObjectId=0b0236e1885e69de

This information is submitted on behalf of the American Chemistry Council's (ACC) Performance Fluoropolymer Partnership (hereafter "PFP"), whose members include the world's leading manufacturers, processors, and users of fluoropolymers, including fluoroplastics, fluoroelastomers and perfluoropolyether polymers.¹ The PFP's mission is to promote the responsible production, use, and management of fluoropolymers. We invest in research to support our mission and inform a scientifically sound, risk-based approach to regulation.

This submission provides an updated schedule to the data generation described in our submission on June 2, 2023 (ID# 9823e8c9-6f2f-4973-807d-77dfcba3dc2b). Continued interest in rigorous sampling and analytical methods has led to refining bench-scale reactor design in order to provide sufficient exhaust flow to enable PFAS detection limits on the order of 1 nanogram per dry standard cubic meter. The breadth of analytical results will provide important insights into the fate of fluoropolymers in municipal waste-to-energy plants and inform the need for regulatory action based on questions about the incineration of fluoropolymers at the end of their service life. The objectives of this study are:

1. Determine sampling and analytical techniques necessary to measure full mass balance on organic fluorine across a combustion system and achieve trace-level detection limits for C₄ - C₁₄ perfluorocarboxylic acids (PFCAs), C₄ - C₁₂ perfluorosulfonic acids (PFSAs), and trifluoroacetic acid (TFA) at bench-scale exhaust gas flow rates.
2. Identify, minimize, and monitor sources of external PFAS contamination.
3. Evaluate the generation of nonpolymer PFAS and other products of incomplete combustion from the combustion of commercial fluoropolymers under conditions representative of full-scale municipal waste-to-energy plants in the EU and US.

The PFP has developed the following timeline for achieving these objectives:

No.	Task	Completion Date
1	Design impinger system for efficient halide collection to enable bench-scale mass balance determinations.	3 Nov 2023
2	Develop experimental plan for operating bench-scale reactor system.	1 Dec 2023

¹ <https://fluoropolymerpartnership.com/>

3	Develop GC-MS method to determine C ₁ - C ₄ fluorocarbons in exhaust gas.	5 Jan 2024
4	Share Quality Assurance Project Plan with USEPA technical staff for review.	2 Feb 2024
5	Conduct process hazards review of design for integrated reactor system and revise system design based on results of review.	1 Mar 2024
6	Revise Quality Assurance Project Plan based on feedback from USEPA.	15 Mar 2024
7	Characterize elemental composition and thermogravimetric behavior of fluoropolymer test material(s).	19 Apr 2024
8	Test capability of key components of reactor system to meet design criteria for inherently safer operation.	3 May 2024
9	Fabricate and assemble integrated bench-scale reactor system.	7 Jun 2024
10	Conduct preliminary testing to test stable operation of integrated bench-scale reactor system at conditions representative of full scale, perform calibrations, and develop detailed operating plans.	2 Aug 2024
11	Demonstrate measurement capabilities of FTIR (HF, COF ₂ , SiF ₄) and continuous gas analyzer (O ₂ , CO ₂ , CO, NO _x).	16 Aug 2024
12	Evaluate background PFAS and fluorine contamination of key components of integrated reactor system.	4 Oct 2024
13	Assess fluorine transport efficiency across reactor system via mass balance.	18 Oct 2024
14	Under conditions representative of full-scale municipal waste-to-energy plants in the EU and US, conduct fluoropolymer combustion experiments to determine levels of C ₄ - C ₁₄ PFCAs, C ₄ - C ₁₂ PFSA, other Method 1633 analytes, TFA, C ₁ - C ₄ fluorocarbons, and fluoride ion in exhaust gas.	28 Feb 2025
15	Conduct independent review of experimental results to verify the data were generated in accordance with the Quality Assurance Project Plan, evaluate blanks to assess external contamination, and validate data quality.	28 Mar 2025
16	Document experimental program methods, results, and conclusions in comprehensive report.	23 May 2025
17	Review comprehensive study report with stakeholders.	20 June 2025
18	Submit final study report to European Chemicals Agency and USEPA.	11 July 2025

Sincerely,

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