



CPSC Staff Statement on: Per and Polyfluoroalkyl Substances (PFAS) Next Steps for Hazard, Exposure, and Risk Analyses

The U.S. Consumer Product Safety Commission (CPSC, or Commission) contracted with ICF (Contract No. 61320622A0005, Order No. 61320623F2025) to complete a report *Per-and Polyfluoroalkyl Substances (PFAS): Next Steps for Screening-Level Hazard, Exposure, and Risk Analyses*. The objective of this call order was to provide initial categorization and ranking of key PFAS chemistries and consumer product combinations, identify subsets of PFAS and products for preliminary hazard and exposure quantification and document uncertainty and data needs.

While there are potentially more than 16,000 PFAS chemical substances, only a subset are currently in commerce. As part of prioritization, 326 PFAS chemical substances were initially identified to have (i) toxicity data and (ii) known or potential uses in consumer products. Chemicals were then qualitatively ranked depending on exposure potential and data availability. From a prioritized list of 35 PFAS chemical substances determined to have sufficient information to assess initial hazards, exposures, and risks, 10 PFAS chemical substances were selected for this report.

Table 1. PFAS Chemical Substances included in the report

CASRN	Chemical Name	Chemical Abbreviation	PFAS Category	Chain Length
647-42-7	6:2 Fluorotelomer alcohol	6:2 FTOH	Fluorotelomer alcohols	6
678-39-7	8:2 Fluorotelomer alcohol	8:2 FTOH	Fluorotelomer alcohols	8
754-91-6	Perfluorooctanesulfonamide	PFOSA	Perfluoroalkane sulfonamides	8
375-22-4	Perfluorobutanoic acid	PFBA	Perfluorocarboxylic acids	4
375-85-9	Perfluoroheptanoic acid	PFHpA	Perfluorocarboxylic acids	7
307-24-4	Perfluorohexanoic acid	PFHxA	Perfluorocarboxylic acids	6
375-73-5	Perfluorobutanesulfonic acid	PFBS	Perfluorosulfonic acids	4
75-37-6	1,1-Difluoroethane	DfE	Short-chain hydrofluorocarbons	2
811-97-2	1,1,1,2-Tetrafluoroethane	TFE	Short-chain hydrofluorocarbons	2
3825-26-1	Ammonium perfluorooctanoate	APFO	Perfluoroalkyl carboxylate salt	8

The contractor report does not include Perfluorooctanoic Acid (PFOA) and Perfluorooctane Sulfonate (PFOS), two of the most widely known PFAS chemicals. However, these two chemicals are no longer legally manufactured in the United States and have not been intentionally formulated into consumer products domestically for some time, so CPSC staff chose to focus resources on other PFAS with ongoing consumer product uses. Currently, some estimated exposures for PFOA and PFOS generally are lower than for other PFAS chemical substances included in the contractor report.¹

The probability and types of risk varied and are described in the report. The data sources and approaches used in this report are further characterized across thirty supplemental files. CPSC staff plans to use this report in ongoing work to understand hazards, exposures, and potential human health risks related to specific PFAS—or subclasses of PFAS—and consumer products.

This statement was prepared by the CPSC staff. ICF produced the accompanying report for CPSC staff. The statement and report have not been reviewed or approved by, and may not represent the views of, the Commission.

¹ East, A., Egeghy, P. P., Hubal, E. A. C., Slover, R., & Vallero, D. A. (2023). Computational estimates of daily aggregate exposure to PFOA/PFOS from 2011 to 2017 using a basic intake model. *Journal of exposure science & environmental epidemiology*, 33(1), 56-68.

Appendix A: TABLE 1. List of Supplemental Files

Filename	Description	Report Section
A. Prioritization Approach		
Supplemental File A_PFAS Prioritization Approach_2025-05-23.docx	Approach used to identify a prioritized set of PFAS chemicals for evaluation in the main report (this is the Task 1 memo without the appendices)	2
B. Huffing		
Supplemental File B_Huffing Scenario_2025-05-23.docx	Summary of the hazards, exposures, and risks from huffing	2
Attachment B-01_DFE 6 hrs Huffing Results_2025-05-23.xlsx	CEM ² inputs and outputs and postprocessed 1, 2, 4, 8, and 24-hour TWA ³ s for a huffing scenario where the user huffs DFE ⁴ for 6 hours, once every 4 minutes	2
Attachment B-02_DFE 2 hrs Huffing Results_2025-05-23.xlsx	CEM inputs and outputs and postprocessed 1, 2, 4, 8, and 24-hour TWAs for a huffing scenario where the user huffs DFE for 2 hours, once every 4 minutes	2
Attachment B-03_TFE 6 hrs Huffing Results_2025-05-23.xlsx	CEM inputs and outputs and postprocessed 1, 2, 4, 8, and 24-hour TWAs for a huffing scenario where the user huffs TFE ⁵ for 6 hours, once every 4 minutes	2
Attachment B-04_TFE 2 hrs Huffing Results_2025-05-23.xlsx	CEM inputs and outputs and postprocessed 1, 2, 4, 8, and 24-hour TWAs for a huffing scenario where the user huffs TFE for 2 hours, once every 4 minutes	2
C. Literature Search and Screening		
Supplemental File C_Literature Search and Screening_2025-05-23.docx	Literature search strategies, search results, and PECO ⁶ criteria for screening	3.1.2
D. TRVs		
Supplemental File D_TRVs for Prioritized PFAS_2025-05-23.xlsx	Compilation of existing and derived TRV ⁷ s	4.1.2–4.1.4
E. Exposure – SHEDS-HT		

² CEM | Consumer Exposure Model

³ TWA | Time-weighted Average

⁴ DFE | Difluoroethane

⁵ TFE | Tetrafluoroethane

⁶ PECO | Population, Exposure, Comparison, and Outcome

⁷ TRV | Toxicity Reference Value

Supplemental File E_SHEDS-HT_2025-05-23.docx	Description of SHEDS-HT ⁸ input and output files, derivation of y_0 , and consumer product-PUC crosswalk	3.3.2
Attachment E-01_chem_props_pfas_2025-05-23.csv	Chemical properties input file for SHEDS-HT	3.3.2
Attachment E-02_source_chem_pfas_2025-05-23.csv	Source chemicals input file for SHEDS-HT	3.3.2
Attachment E-03_source_vars_pfas_2025-05-23.csv	Source variables input file for SHEDS-HT	3.3.2
Attachment E-04_source_scen_pfas_2025-05-23.csv	Source scenarios input file for SHEDS-HT	3.3.2
Attachment E-05_6-2 FTOH_SHEDS-HT Results_2025-05-23.xlsx	Consolidated outputs from SHEDS-HT for 6:2 FTOH, prior to postprocessing	4.2.2
Attachment E-06_8-2 FTOH_SHEDS-HT Results_2025-05-23.xlsx	Consolidated outputs from SHEDS-HT for 8:2 FTOH, prior to postprocessing	4.2.2
Attachment E-07_PFOSA_SHEDS-HT Results_2025-05-23.xlsx	Consolidated outputs from SHEDS-HT for PFOSA, prior to postprocessing	4.2.2
Attachment E-08_PFBA_SHEDS-HT Results_2025-05-23.xlsx	Consolidated outputs from SHEDS-HT for PFBA, prior to postprocessing	4.2.2
Attachment E-09_PFHpA_SHEDS-HT Results_2025-05-23.xlsx	Consolidated outputs from SHEDS-HT for PFHpA, prior to postprocessing	4.2.2
Attachment E-10_PFHxA_SHEDS-HT Results_2025-05-23.xlsx	Consolidated outputs from SHEDS-HT for PFHxA, prior to postprocessing	4.2.2
Attachment E-11_PFBS_SHEDS-HT Results_2025-05-23.xlsx	Consolidated outputs from SHEDS-HT for PFBS, prior to postprocessing	4.2.2
Attachment E-12_DFE_SHEDS-HT Results_2025-05-23.xlsx	Consolidated outputs from SHEDS-HT for DFE, prior to postprocessing	4.2.2
Attachment E-13_TFE_SHEDS-HT Results_2025-05-23.xlsx	Consolidated outputs from SHEDS-HT for TFE, prior to postprocessing	4.2.2
Attachment E-14_Postprocessed SHEDS-HT Results_2025-05-23.xlsx	Postprocessed SHEDS-HT results for all chemicals	4.2.2
F. Exposure – Empirical Measurements		
Supplemental File F_Empirical Measurements Data_2025-05-23.xlsx	Empirical measurement data used and corresponding doses calculated from R script	4.2.1, 4.2.3
G. Exposure – Biomonitoring Data		
Supplemental File G_Biomonitoring Data_2025-05-23.xlsx	Biomonitoring data used and daily intakes calculated from R script	3.3.4, 4.2.4

⁸ SHEDS-HT | Stochastic Human Exposure Dose Simulation- High Throughput (model)

H. Risk Characterization		
Supplemental File H_Risk Characterization_2025-05-27.xlsx	Doses and TRVs used and corresponding cumulative probability of a hazard quotient > 0.1	4.3
X. Scripts		
Attachment X-01_Database_Fitting_2025-05-23.R	R code to fit extracted PFAS concentrations to distributions to obtain pooled concentrations and corresponding doses	4.2.1–4.2.4
Attachment X-02_SHEDS-HT Postprocessing_2025-05-23.R	R code to calculate population statistics for the sub-population of simulated individuals with non-zero product exposures and the % contribution by PUC ⁹ for each chemical	4.2.2
Attachment X-03_CEM Postprocessing for Huffing_2025-05-23.R	R code to postprocess CEM output to calculate TWAs for huffing scenario with multiple uses in a huffing session	2
Attachment X-04_CumulativeProbability_2025-05-27.R	R script to calculate distribution and hazard quotients	4.3

⁹ PUC | Product Use Category