



PFAS Strategic Roadmap: EPA's Commitments to Action 2021-2024

Chem Watch - Global PFAS 2022

March 24, 2022

epa.gov/pfas

Overview of Today's Briefing

- **EPA Council on PFAS:** Roadmap and Early Actions
- **EPA's Approach to Tackling PFAS:** Principles and Goals
- **Actions:** Commitments and Timelines
- **Next Steps:** Engagement and Implementation

EPA Council on PFAS: Roadmap and Early Actions

- EPA Administrator Michael Regan established the EPA Council on PFAS in April 2021 and charged it to develop a bold, strategic, whole-of-EPA strategy to protect public health and the environment from the impacts of PFAS.
- The Council is comprised of senior technical and policy leaders from across EPA program offices and Regions and is chaired by Assistant Administrator for Water Radhika Fox and Deputy Region 1 Administrator Deb Szaro.
- The PFAS Council developed a strategic roadmap to lay out EPA's whole-of-agency approach to tackling PFAS and set timelines by which the Agency plans to take concrete actions during the first term of the Biden-Harris Administration. The Roadmap fills a critical gap in federal leadership, provides a basic floor of federal protection, and supports states' ongoing efforts to address PFAS.
- The Roadmap builds on existing bold EPA actions under the Biden-Harris Administration to restore scientific integrity and accelerate the pace of research and actions needed to tackle the PFAS crisis and protect American communities.

EPA's Approach to Tackling PFAS: Principles

PFAS contamination poses unique challenges, and EPA must use every tool in its tool box. EPA's approach is centered around the following principles:

- Consider the Lifecycle of PFAS.
- Get Upstream of the Problem.
- Hold Polluters Accountable.
- Ensure Science-Based Decision-Making.
- Prioritize Protection of Disadvantaged Communities.

EPA's Approach to Tackling PFAS: Goals

RESEARCH

Invest in research, development, and innovation to increase understanding of PFAS exposures and toxicities, human health and ecological effects, and effective interventions that incorporate the best available science.

RESTRICT

Pursue a comprehensive approach to proactively prevent PFAS from entering air, land, and water at levels that can adversely impact human health and the environment.

REMEDiate

Broaden and accelerate the cleanup of PFAS contamination to protect human health and ecological systems.

Actions: Office of Chemical Safety and Pollution Prevention

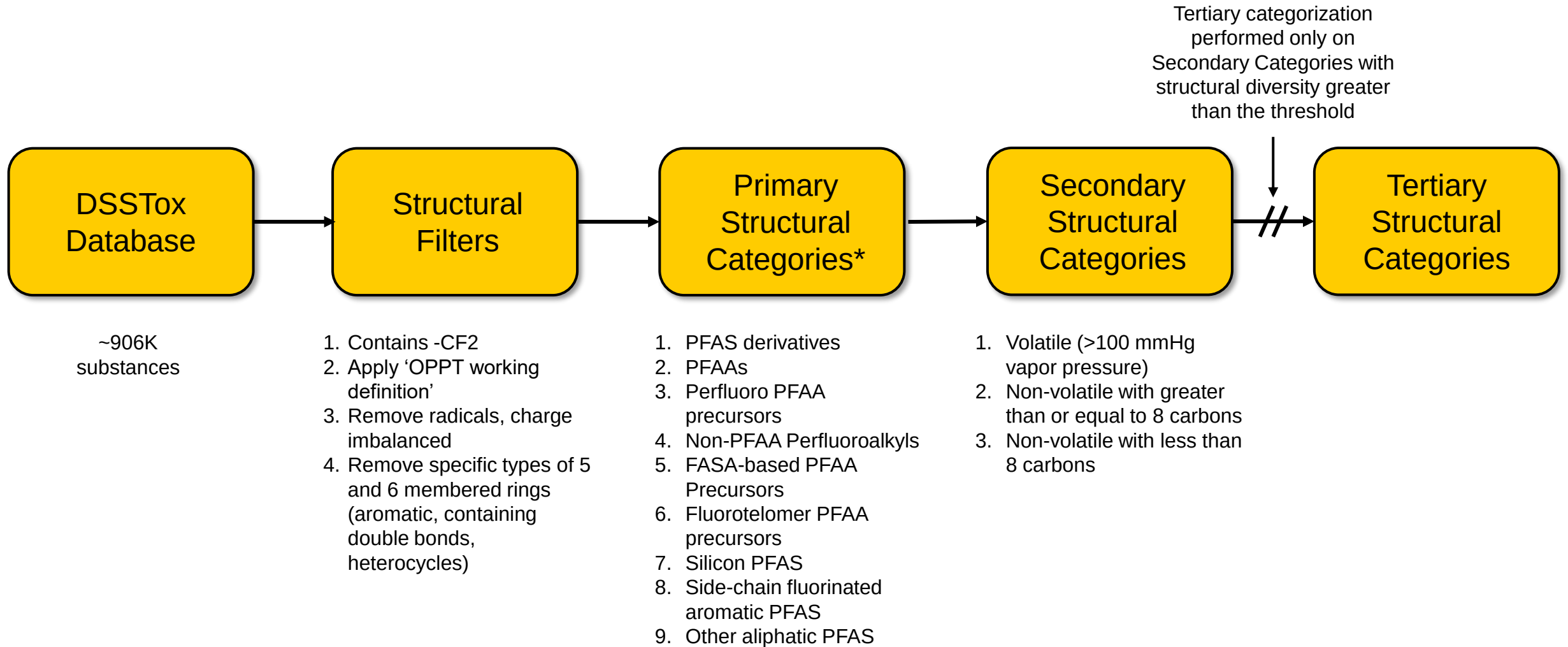
- **Publish a national PFAS testing strategy.** Released October 2021.
- **Ensure a robust review process for new PFAS.** Efforts ongoing.
- **Review existing PFAS under TSCA.** Expected Summer 2022 and ongoing.
- **Enhance PFAS reporting under the Toxics Release Inventory.** Expected Spring 2022.
- **Finalize new PFAS reporting under TSCA Section 8.** Expected Winter 2022.

OCSP Action: Publish a National PFAS Testing Strategy

- EPA needs to evaluate a large number of PFAS for potential human health and ecological effects. Most PFAS have limited or no toxicity data; however, what we know about the few with data is that they are all not alike, in either their environmental fate/transport or biological effects.
- If EPA attempts to research them one at a time, it will be impossible for EPA to expeditiously understand, let alone address, the risks these substances may pose to human health and the environment.
- To address this data gap and fundamentally advance our understanding of these substances, EPA has developed this National PFAS Testing Strategy (Strategy) to deepen understanding of the impacts of PFAS, including potential hazards to human health and the environment
- There is emerging consensus on the need to use category/grouping-based approaches to evaluate PFAS for a range of decision contexts.
 - Historically, for human health assessment within EPA, PFAS analogs and/or groups were based on a combination of chain-length and functional groups.
 - In the 2020 National Defense Authorization Act (NDAA), Congress directed EPA to develop a process for prioritizing which PFAS or classes of PFAS should be subject to additional research efforts based on potential for human exposure to, toxicity of, and other available information.
 - In a category/grouping approach, one or more data rich analogs is used to read-across toxicity values for the remaining data poor substances within the group.
- EPA's National PFAS Testing Strategy addresses this gap by creating a strategic approach for identifying and selecting PFAS for testing.

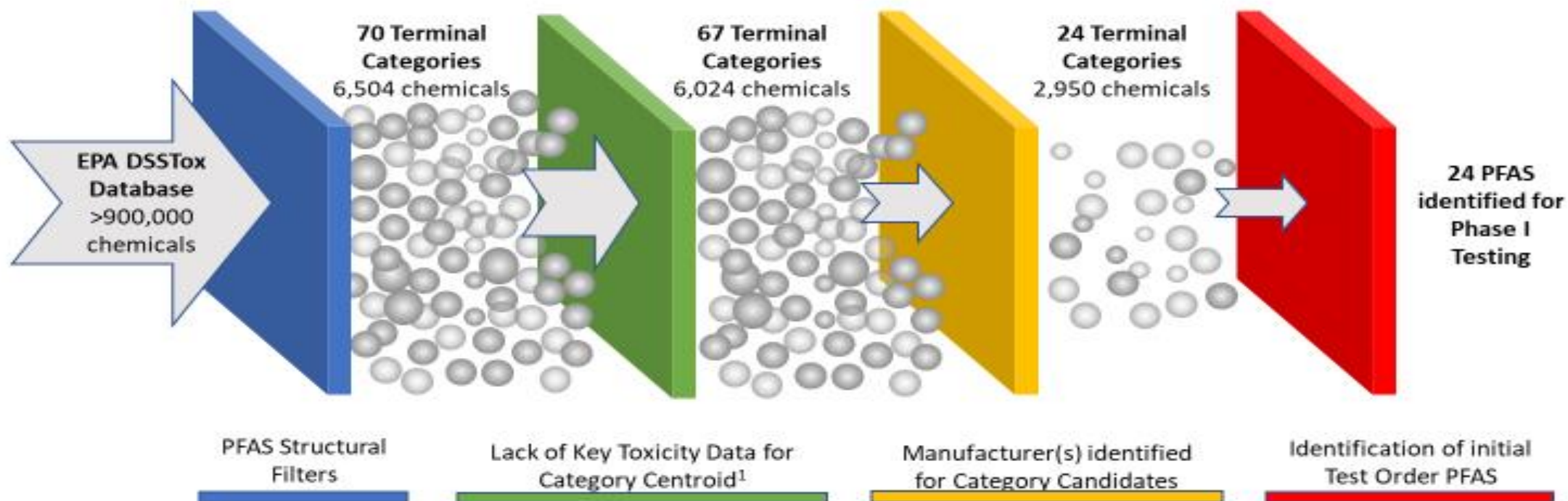
Develop Initial PFAS Structural Categories

Collaboration between ORD & OCSPP



*Based on Su and Rajan, 2021

Testing Candidate Identification



¹ In some cases, a PFAS within the category with close structural distance to the category's centroid was selected as the candidate

OCSP Action: Tiered Testing Approach

- As contemplated in TSCA sections 4(a)(4) and 4(h)(2)(A), (B), Tiered Testing, which includes BOTH *in vitro* and *in vivo* testing, is envisioned:
 - Tier I: Testing of physical-chemical properties (e.g., vapor pressure, solubility) and *in vitro* testing (e.g., nuclear receptor, toxicokinetics, genotoxicity) to inform short-term *in vivo* toxicity and/or toxicokinetic tests.
 - Tier II: Testing to inform which species and doses to use in Tier III testing including *in vivo* toxicokinetic studies, *in vivo* short-term inhalation studies for potential surfactants, and *in vitro* dermal absorption.
 - Tier III: Testing to identify dose levels for hazard characterization and risk assessment including potential *in vivo* subchronic, developmental, reproductive, and carcinogenicity testing.
- EPA expects to refine initial structural categories using mechanistic and toxicokinetic data from EPA's Office of Research and Development (ORD) as well as further evaluation of degradation products and exposure data (e.g., environmental monitoring, biomonitoring).
- EPA expects to issue further TSCA Test Orders after the categories are refined. The process for refining and issuing Test Orders will be an iterative process as testing data is submitted to the Agency.
- While EPA expects to use TSCA Section 4 order authority to require PFAS manufacturers to conduct and fund the studies, the information derived from this testing strategy **will be used by the Agency to evaluate of toxicity and risks associated with this large class of chemicals, and thereby further inform the Agency's future research, monitoring, and regulatory efforts under multiple statutes/programs.**

Take Home Messages

- EPA undertaking a multi-pronged strategy to characterize the chemistry, toxicity, and toxicokinetic properties of the broader class of PFAS.
- A category-based approach is being used to identify candidate PFAS for further *in vivo* testing and provide toxicity values for the constituent substances.
- Initial structural categories will be refined using the mechanistic and toxicokinetic data.
- ORD has worked closely with OCSPP to develop the strategy for regulatory application.

Actions: Office of Water

- **Undertake nationwide monitoring for PFAS in drinking water.** Final rule published December 2021.
- **Establish a national primary drinking water regulation for PFOA and PFOS.** Proposed rule expected Fall 2022, final rule expected Fall 2023.
- **Publish final toxicity assessment for GenX and five additional PFAS (PFBA, PFHxA, PFHxS, PFNA, PFDA).** GenX released October 2021; draft PFHxA released February 2022; others ongoing.
- **Publish health advisories for GenX and PFBS.** Expected Spring 2022.
- **Restrict PFAS discharges from industrial sources through a multi-faceted Effluent Limitations Guidelines program.** Expected 2022 and ongoing.
- **Leverage National Pollutant Discharge Elimination System permitting to reduce PFAS discharges to waterways.** Expected Winter 2022.
- **Publish improved analytical methods.** Expected Fall 2022 and Fall 2024.
- **Publish final recommended ambient water quality criteria for PFAS.** Expected Winter 2022 and Fall 2024.
- **Enhance data availability on PFAS in fish tissue.** Expected Summer 2022 and Spring 2023.
- **Finalize risk assessment for PFOA and PFOS in biosolids.** Expected Winter 2024.

Actions: Office of Land and Emergency Management and Office of Air and Radiation

Land and Emergency Management

- **Propose to designate certain PFAS as CERCLA hazardous substances.** Proposed rule expected Spring 2022, Final rule expected Summer 2023.
- **Issue advance notice of proposed rulemaking on various PFAS under CERCLA.** Expected Spring 2022.
- **Issue updated guidance on destroying and disposing PFAS.** Expected Fall 2023.
- **Additional Action: Initiate two rulemakings under RCRA to address PFAS.** Announced October 26, 2021.

Air and Radiation

- **Build the technical foundation to address PFAS air emissions.** Expected Fall 2022 and ongoing.

Actions: Office of Research and Development

- **Develop and validate methods to detect and measure PFAS in the environment.** Ongoing actions.
- **Advance the science to assess human health and environmental risks from PFAS.** Ongoing actions.
- **Evaluate and develop technologies for reducing PFAS in the environment.** Ongoing actions.

Actions: Cross-Program

- **Engage directly with affected communities in every EPA Region.** Expected Fall 2021 and ongoing.
- **Use enforcement tools to better identify and address PFAS releases at facilities.** Ongoing actions.
- **Accelerate public health protections by identifying PFAS categories.** Expected Winter 2021 and ongoing.
- **Establish a PFAS voluntary stewardship program.** Expected Spring 2022.
- **Educate the public about the risks of PFAS.** Expected Fall 2021 and ongoing.
- **Issue an annual public report on progress towards PFAS commitments.** Expected Winter 2022 and ongoing.

For More Information

PFAS Strategic Roadmap:

EPA's Commitments to Action 2021-2024

[epa.gov/pfas](https://www.epa.gov/pfas) & https://www.epa.gov/system/files/documents/2021-10/pfas-roadmap_final-508.pdf

National PFAS Testing Strategy:

Identification of Candidate Per- and Polyfluoroalkyl Substances (PFAS) for Testing

<https://www.epa.gov/assessing-and-managing-chemicals-under-tsca/national-pfas-testing-strategy>

Risk Management for Per- and Polyfluoroalkyl Substances (PFAS) under TSCA

<https://www.epa.gov/assessing-and-managing-chemicals-under-tsca/risk-management-and-polyfluoroalkyl-substances-pfas>



Thanks