



PFAS Overview

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Overview

- **PFAS background information**
- **Roadmap and accomplishments**
- **Key activities across OCSPP**

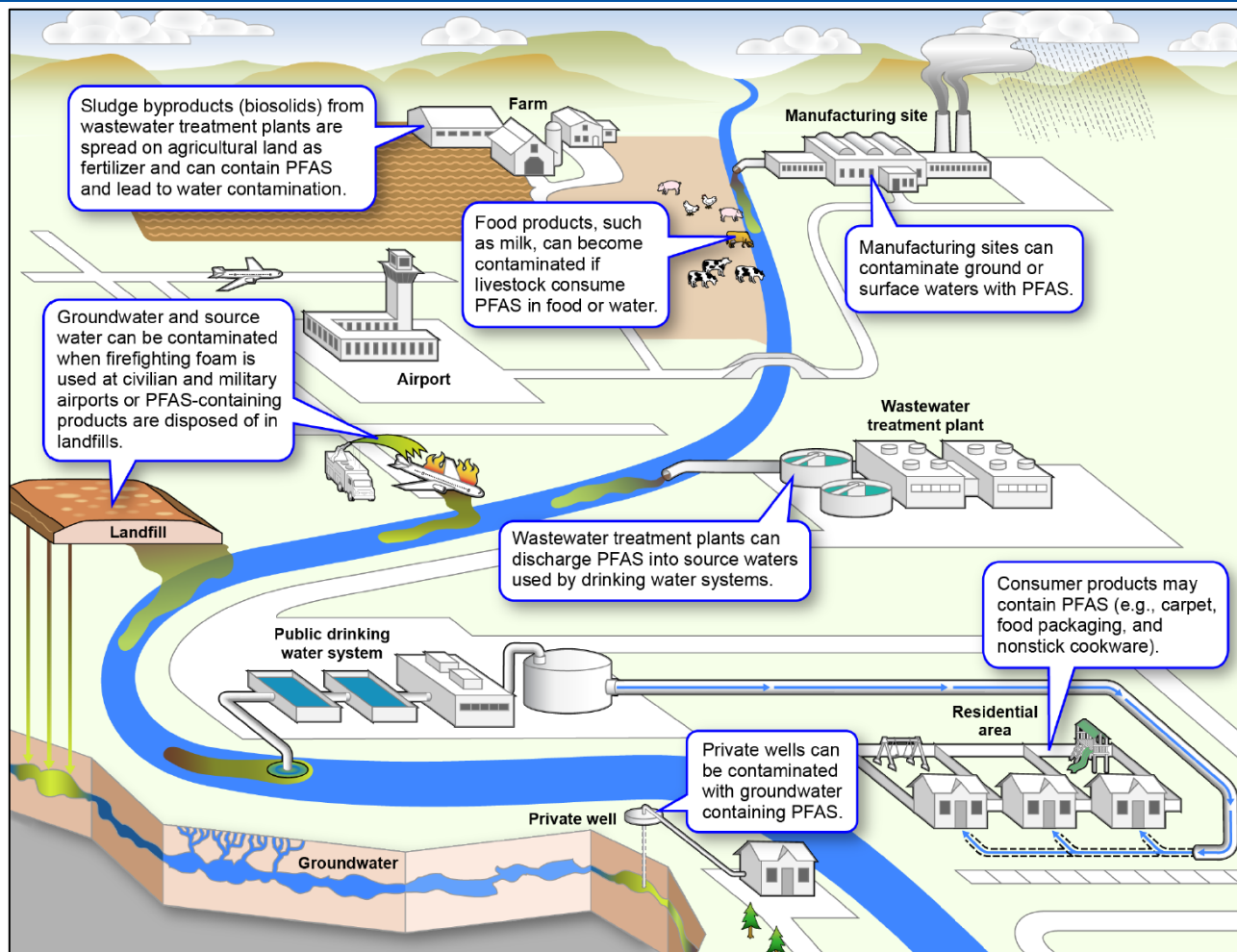
EPA's PFAS Strategic Roadmap: EPA's Commitments to Action 2021-2024

- EPA Administrator Michael Regan established the EPA Council on PFAS in April 2021.
- The Council developed the PFAS Strategic Roadmap, released in October 2021 – a bold, strategic, whole-of-EPA strategy to protect public health and the environment from PFAS.
- The Roadmap:
 - Sets timelines for concrete actions from 2021 to 2024;
 - Fills a critical gap in federal leadership;
 - Supports states' ongoing efforts; and
 - Builds on the Biden-Harris Administration's commitment to restore scientific integrity.



<https://www.epa.gov/pfas> and <https://www.epa.gov/pfas/pfas-strategic-roadmap-epas-commitments-action-2021-2024#council>

What Are Per- and Polyfluoroalkyl Substances (PFAS) and Why are We Concerned?



PFAS captures a large class of synthetic chemicals.

- Chains of carbon atoms surrounded by fluorine atoms.
- Wide variety of chemical structures.

Used in homes, businesses, and industry since the 1940s.

- Used by a number of industries and found in many consumer products.
- Detected in soil, water, and air samples.
- Most people have been exposed to PFAS.

Known or suspected toxicity.

- Potential developmental, liver, immune, and thyroid effects.
- Some are relatively well understood; many others are not.
- Resist decomposition in the environment and in the human body.

EPA's Approach to Tackling PFAS

- Principles

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

- Goals

- Research - invest in research, development, and innovation
- Restrict - comprehensive approach to proactively prevent PFAS from entering air, land, and water at levels that can cause adverse effects
- Remediate - broaden and accelerate the cleanup of PFAS contamination

Key EPA Accomplishments Since October 2021



EPA's PFAS Strategic Roadmap: A Year of Progress

November 2022



- Proposed to designate PFOA and PFOS as CERCLA hazardous substances
- Released drinking water health advisories for four PFAS
- Laid the foundation for enhancing PFAS chemical and drinking-water data
- Began distributing \$10 billion in Bipartisan Infrastructure Law funding to address emerging contaminants in water
- Expanded the scientific understanding of PFAS and translated the latest science into EPA's cross-agency efforts
- Proactively used enforcement tools to identify and address PFAS releases
- Engaged with federal partners and the public

Bipartisan Infrastructure Law and PFAS

The Bipartisan Infrastructure Law makes transformational investments in America's water infrastructure. It provides \$10 billion to invest in communities impacted by PFAS and other emerging contaminants, including:

\$4 billion

Drinking Water State Revolving Fund

\$1 billion

Clean Water State Revolving Fund

\$5 billion

**Small or Disadvantaged Communities
Drinking-Water Grants**

White House OSTP - PFAS Report to Congress

- Publicly available <https://www.whitehouse.gov/wp-content/uploads/2023/03/OSTP-March-2023-PFAS-Report.pdf>
- Discusses
 - Key definitions related to PFAS, PFAS as a class of chemicals, and PFAS research and development.
 - Aligns with priorities around environmental justice, climate change, equitable access to data and technological developments, and broad engagement across stakeholders.
 - Four key strategic areas
 - Removal/destruction/degradation, alternatives, exposure, toxicity

OECD Restriction Proposal

- Publicly available <https://echa.europa.eu/documents/10162/f605d4b5-7c17-7414-8823-b49b9fd43aea>
- Aligned with OECD PFAS definition <https://www.oecd.org/chemicalsafety/portal-perfluorinated-chemicals/terminology-per-and-polyfluoroalkyl-substances.pdf>
- Discusses restriction options under REACH
 - 2 options – full ban or ban with time limited derogations
 - Second option includes time unlimited options for biocides and plant protection products
- OECD briefing is publicly available <https://www.youtube.com/watch?v=CXAZ3ath3To>

OCSP Action Across Offices

- OPPT – Office of Pollution Prevention and Toxics:
 - Various rulemakings
 - National Testing Strategy/Issued test orders for 2 PFAS
 - Container issues
- OPP – Office of Pesticide Programs:
 - Completed inerts activity
 - Continued laboratory work on container issues and methods development
 - Examining issues related to active ingredients

OPPT Actions: Rulemaking Activities

- **TSCA 8(a)(7)** - proposed to require persons that manufacture (including import) or have manufactured these chemical substances in any year since January 1, 2011, to electronically report information regarding PFAS uses, production volumes, disposal, exposures, and hazards <https://www.epa.gov/assessing-and-managing-chemicals-under-tsca/tsca-section-8a7-reporting-and-recordkeeping#rule-summary>
- **New and Existing Chemical SNURs** – require notification at least 90 days prior to manufacturing <https://www.govinfo.gov/content/pkg/FR-2022-12-02/pdf/2022-26252.pdf>
- **Low Volume Exemption** – announcement of new policy for PFAS LVEs <https://www.epa.gov/chemicals-under-tsca/epa-announces-changes-prevent-unsafe-new-pfas-entering-market>
- **Toxics Release Inventory** - proposing to add PFAS subject to reporting under the Emergency Planning and Community Right-to-Know Act (EPCRA) and the Pollution Prevention Act (PPA) to the list of Lower Thresholds for Chemicals of Special Concern (chemicals of special concern <https://www.epa.gov/toxics-release-inventory-tri-program/changes-tri-reporting-requirements-and-polyfluoroalkyl>)

OPPT Actions: Inactive SNUR

- Proposed rule for PFAS designated as “inactive” on the TSCA Chemical Substance Inventory; requires notification at least 90 days prior to manufacturing
 - <https://www.federalregister.gov/documents/2023/01/26/2023-01156/per--and-poly-fluoroalkyl-chemical-substances-designated-as-inactive-on-the-tsca-inventory>
- Applies to expanded group of PFAS chemicals that contain at least one of these three structures:
 - $R-(CF_2)-CF(R')R''$, where both the CF_2 and CF moieties are saturated carbons
 - $R-CF_2OCF_2-R'$, where R and R' can either be F , O , or saturated carbons
 - $CF_3C(CF_3)R'R''$, where R' and R'' can either be F or saturated carbons
- Impact on National Testing Strategy is being evaluated
- Small impact on pesticide issues related to the number of active ingredients considered PFAS

OPPT Actions: National PFAS Testing Strategy

- EPA needs to evaluate a large number of PFAS and they are not alike
- Most have limited or no toxicity data.
- It will be impossible to research them one at a time and achieve meaningful progress
- To address the above issues and advance our understanding of these substances, EPA has developed the National PFAS Testing Strategy
 - Strategy addresses gaps by creating a strategic approach for testing
- There is emerging consensus on the need to use category/grouping-based approaches to evaluate PFAS for a range of decision contexts
 - 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
- The strategy is intended to be flexible and will evolve as additional information is available
 - As issued - 70 terminal categories, 67 are data poor, 24 can be associated with a manufacturer

OPPT Actions: TSCA Test Orders

- Process related to issuing a test order <https://www.epa.gov/system/files/documents/2022-03/issuing-a-section-4-order-24-march-2022.pdf>
- 2 orders issued to date <https://www.epa.gov/assessing-and-managing-chemicals-under-tsca/list-chemicals-subject-section-4-test-orders>
 - 6:2 Fluorotelomer sulfonamide betaine issued June 16, 2022 https://www.epa.gov/system/files/documents/2022-06/9829-01_testorder-6_2_Fluorotelomer_sulfonamide_betaine.pdf
 - Hexafluoropropylene oxide (HFPO) issued January 4, 2023 https://www.epa.gov/system/files/documents/2023-01/10434-01_TSCA_Test%20Order_PFAS-HFPO%29_AA_Signature_2023-01-04.pdf
- Test orders consider available data and use a tiered approach
 - 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.

OPPT Actions: Packaging Issues Under TSCA

- Containers are treated to ensure that they are stable and do not break down under use
- Long chain PFAS have been found in some containers which is subject to a SNUR and would require a notification (SNUN) – driven in large part by pesticide container findings
- Letter issued under TSCA to manufacturers, processors, distributors, users, and those that dispose of fluorinated polyolefin containers

https://www.epa.gov/system/files/documents/2022-03/letter-to-fluorinated-hdpe-industry_03-16-22_signed.pdf

OPP Actions: Pesticide Inerts

- FR issued December 14, 2022 removed 12 PFAS from the current approved list of inert ingredients <https://www.regulations.gov/document/EPA-HQ-OPP-2022-0542-0009>
 - None of these twelve chemicals were currently being used as an inert ingredient in a pesticide product per EPA records of currently registered pesticide products. Additionally, no products containing any of these 12 chemicals were identified during the public comment period.
 - EPA removed these chemicals from the inert ingredient list to prevent the introduction of these PFAS into pesticide formulations without additional EPA review.
 - Docket contains all pertinent information including comments <https://www.regulations.gov/docket/EPA-HQ-OPP-2022-0542>
- There are 2 additional inerts still in use which meet the OPPT PFAS definition

OPP Actions: Completed Lab Efforts

- Origin of the issue was identification of PFAS in mosquito products, for general information <https://www.epa.gov/pesticides/pfas-packaging>
- Testing data on mosquito products was released March 2021 & Oct. 2021 <https://www.epa.gov/newsreleases/epa-releases-testing-data-showing-pfas-contamination-fluorinated-containers> and https://www.epa.gov/system/files/documents/2021-09/epa-pfas-mda-report_0.pdf
- Released method for detecting 28 PFAS in oily matrices (Sept 2021) <https://www.epa.gov/system/files/documents/2021-09/epa-pfas-method-in-oil.pdf>
- Evaluated PFAS formation in fluorinated containers (Sept 2022) https://www.epa.gov/system/files/documents/2022-09/EPA%20PFAS%20Container%20Leaching%20Study%2008122022_0.pdf
- Examination of Lasse, *et al.* (release summer 2023) <https://www.sciencedirect.com/science/article/pii/S266691102200020X>

Ongoing OPP Lab Studies/Methodology Development

- Methods are being developed to identify and measure PFAS compounds in different pesticide formulations
 - Validated method to measure PFAS in pesticide formulations containing surfactants will be released for public comment in calendar year 2023
 - Additional methods on other pesticide formulation types in various stages of consideration and development
- Method to quantify the amount of potential PFAS in the walls of fluorinated HDPE containers which differs from the rinsate methods of analysis – release for public comment in late 2023/early 2024
- Continued identification and quantification of PFAS compounds from specific HDPE container manufacturers

OPP Actions: Pesticide Active Ingredients

- 4 Compounds have been identified which meet the updated definition
 - Broflanilide (insecticide) - new uses are pending
 - Pyrifluquinazon or PQZ (insecticide) – import tolerances pending
 - Tetraconazole (fungicide) – Reg Review Interim Decision (Oct. 2022, 60 day comment period)
 - Hexaflumuron (termite bait) - Reg Review Proposed Interim Decision (Nov. 2014)
- Key issues
 - CFR 158 database is extensive, unique for vast majority of PFAS
 - Still must account for potential degradates (e.g., in environmental media and relative to human health concerns)

Take Home Messages

- Significant level of activity across the Agency including OCSPP
- EPA undertaking a multi-pronged strategy to characterize the chemistry, toxicity, and toxicokinetic properties of PFAS. The approach is flexible and will evolve over time as more information becomes available
- There are extensive ongoing collaborative efforts, e.g., ORD has worked closely with OCSPP to develop the national testing strategy
- Related to pesticides, there are a small number of available chemistries which meet the OCSPP definition

For More Information

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

https://www.epa.gov/system/files/documents/2021-10/pfas-roadmap_final-508.pdf

National PFAS Testing Strategy

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

Accomplishments

https://www.epa.gov/system/files/documents/2022-11/PFAS%20Roadmap%20Progress%20Report_final_Nov%2017.pdf

Risk Management for PFAS under TSCA

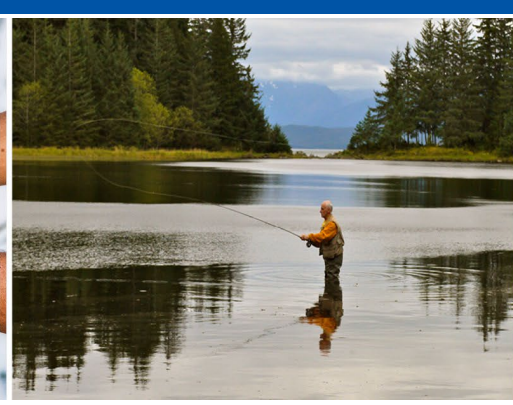
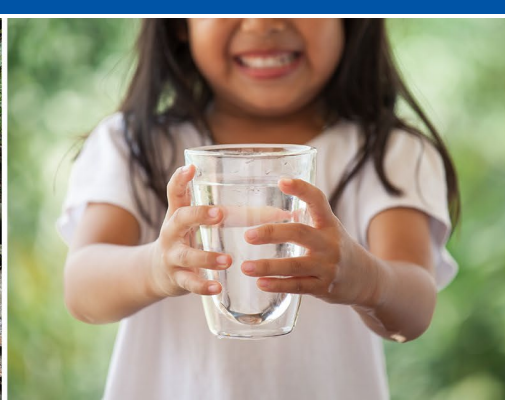
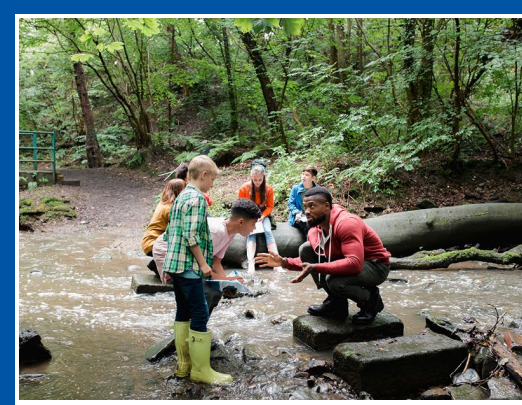
<https://www.epa.gov/assessing-and-managing-chemicals-under-tsca/risk-management-and-polyfluoroalkyl-substances-pfas>

Pesticide Container Information

<https://www.epa.gov/pesticides/pfas-packaging>

General Information

www.epa.gov/pfas



Thanks

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