

# Per- and Poly-Fluorinated Alkyl Substances Chemical Action Plan (PFAS CAP) – 2019 Updates

## Updated Regulations Chapter

In 2017, the Washington State departments of Ecology and Health shared draft PFAS CAP chapters with external parties for review and comment. Comments received are available [online](#). This document is either an update of a 2017 draft or a new ‘chapter.’ Ecology and Health are sharing chapters with interested parties prior to the **April 2019 PFAS CAP webinar** (*previously planned for March*). Updates will be discussed during the April webinar. We expect to publish the entire Draft PFAS CAP around June 2019 followed by a 60-day comment period.

In **April 2019**, Ecology and Health will host a PFAS CAP webinar (*date not yet set*) to:

- Briefly review activities underway: firefighting foam, food packaging, drinking water.
- Review updated/new chapters – comments will be accepted on the updated chapters. Responses will be provided after the 2019 public comment period (summer 2019).
- Discuss preliminary recommendations – requesting comments and suggestions from interested parties – due a week after the webinar.
- Submit comments [online](#).

### Quick summary of PFAS CAP efforts:

- PFAS CAP Advisory Committee and interested parties met in 2016, 2017 and 2018.
- September 2017 Draft PFAS CAP chapters posted:

Intro/Scope	Environment
Biosolids	Health
Chemistry	Regulations
Ecological Toxicology	Uses/Sources

- March of 2018, Ecology and Health published the Interim PFAS CAP.
- The 2019 updated PFAS CAP “chapters” to be posted (in the order we expect to post on the PFAS CAP website):

Biosolids	<i>Analytical methods (new)</i>
Ecological Toxicology	Chemistry
Environment	<i>Fate and Transport (new)</i>
Regulations	<i>Economic analysis (new)</i>
Uses/Sources	<i>Preliminary</i>
Health	<i>Recommendations (new)</i>

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This document is posted on the PFAS CAP Website - <https://www.ezview.wa.gov/?alias=1962&pageid=37105>

## Appendix #: Regulations

### Summary

Federal and state regulatory actions for per and polyfluorinated alkyl substances (PFAS) are summarized by the Interstate Technology Regulatory Council (ITRC) fact sheets and summary tables (ITRC 2018). The list of regulations, guidance, and advisories provided by ITRC are regularly updated and not restated in this document.

This document summarizes Washington State regulations that currently apply to PFAS. Additional discussion is provided of drinking water rulemaking currently underway and two executive orders.

- Firefighting foam and firefighting personal protective equipment.
- Food packaging.
- Dangerous waste.
- Persistent bioaccumulative toxics and chemical action plans.
- Children's safe products reporting.

The Washington State Department of Ecology administers state and federal laws designed to protect Washington's land, air, and water. Many other states developed standards or guidance for PFAS in drinking water, groundwater, surface water, and soil (ITRC 2018). Regulatory approaches to PFAS could include:

- Air releases of PFAS.
- Consumer products to restrict the use of PFAS in specific products, identify safer alternatives or green chemistry opportunities where releases or exposures occur.
- Environmental media cleanup levels or standards for soil, surface water, groundwater and sediment to allow remediation of contaminated sites.
- Fish consumption advisories where sufficient data indicate the need for such recommendations.
- Groundwater and surface water standards or limits of discharges to surface or groundwater and wastewater discharges.

### 1.0 Washington State Regulations

Several Washington State regulations apply to per- and polyfluorinated alkyl substances. Washington State law is in the Revised Code of Washington (RCW). Agency rules are located in the Washington Administrative Code (WAC). Table 1 lists state regulations that address per and polyfluorinated alkyl substances (PFAS).

**Table 1 – Washington regulations**

Regulation	Responsible agency	Citation
Firefighting Agents And Equipment— Toxic Chemical Use - Law	Ecology	Chapter 70.75A RCW

Regulation	Responsible agency	Citation
Packages Containing Metals And Toxic Chemicals - Law	Ecology	Chapter 70.95G RCW
Dangerous Waste Regulations - Rule	Ecology	Chapter 173-303 WAC
Persistent Bioaccumulative Toxins Rule	Ecology and DOH	Chapter 173-333 WAC
Children’s Safe Products Reporting Rule	Ecology and DOH	Chapter 173-334 WAC
Group A Public Water Supplies Rule	DOH	Chapter 246-290 WAC
Governor’s Executive Order	All state agencies	EO 04-01
Governor’s Executive Order	All state agencies	EO 18-01

Ecology – Washington State Department of Ecology

DOH – Washington State Department of Health

EO – executive order

## 1.1 Washington state laws

### Chapter 70.75A RCW

Firefighting Agents and Equipment law applies restrictions to PFAS-containing firefighting foam and PFAS-containing firefighting personal protective equipment. PFAS in this law is defined as a class of fluorinated organic chemicals containing at least one fully fluorinated carbon atom. The law bans the use of PFAS-containing firefighting foam for training purposes by any user. In July 2020, purchase of PFAS-containing firefighting foam is not allowed, exceptions include federally required purchases (for example military or federally certified airports), petroleum refineries and chemical plants. The law requires notification to purchasers of firefighting personal protective equipment that PFAS is used and the purpose for the PFAS. The Washington State Department of Ecology (Ecology) is required to enforce these requirements.

### Chapter 70.95G RCW

Packages Containing Metals and Toxic Chemicals law prohibits PFAS in paper or paperboard food packaging. PFAS in this law is defined as a class of fluorinated organic chemicals containing at least one fully fluorinated carbon atom. Ecology is required to identify that safer alternatives to PFAS in food packaging are available, through the completion of an alternatives assessment. The ban on PFAS in food packaging takes effect two years after Ecology identifies safer alternatives, the earliest date the ban would take effect is January 2022.

## 1.2 Washington state rules

### Chapter 173-303 WAC

Under state hazardous waste law (Chapter 70.105 RCW), Washington regulates the designation, handling and disposal of hazardous waste under the state’s Dangerous Waste Regulations (WAC 173-303). This regulation includes a category of state-only dangerous waste based on toxicity and persistence. Halogenated organic compounds are state-only persistent wastes. All PFAS are halogenated, therefore any waste containing PFAS at concentrations above 100 parts per million designates as a state-only dangerous waste and must be handled and disposed as required by the Dangerous Waste Regulations. The Sources and Uses Chapter provides a summary of dangerous waste disposal records.

## **Chapter 173-333 WAC**

Under state hazardous waste law (Chapter 70.105 RCW), Ecology adopted a rule outlining the processes for efforts to reduce and phase out the uses, releases, and exposures to persistent, bioaccumulative and toxic (PBT) chemicals. This rule includes a list of 28 PBT chemicals, chemical groups, or metals of concern to be considered for chemical action plan (CAP) development. Perfluorooctane sulfonate (PFOS) and its salts are on the list of PBT chemicals groups in this rule. Ecology and DOH work together on CAP development, collaborating with an external advisory committee, to identify, characterize and evaluate uses and releases of PBTs. CAPs recommend actions to protect human health or the environment, including actions to reduce and phase out uses and releases of the PBT, including the use of safer alternatives. Ecology and DOH have completed five CAPs: mercury, lead, polyaromatic hydrocarbons, flame retardants, and polychlorinated biphenyls.

## **Chapter 173-334 WAC**

The Children's Safe Products Act (CSPA – Chapter 70.240 RCW) authorized Ecology and DOH to develop a list of chemicals of high concern to children and a process for manufacturers to report on the presence of those chemicals in children's products. The Children's Safe Products Reporting Rule chemical list includes PFOS and its salts and perfluorooctanoic (PFOA) and related substances in the list of 85 chemicals of high concern to children (WAC 173-334-130). PFOS and its salts was included in the first list of reporting chemicals adopted in rule in 2011. PFOA and related substances was added to the reporting list in 2017. Manufacturers are required to annually report the presence of PFOS or PFOA in children's products sold in Washington State. Annual reports include the manufacturer name, product category and component, chemical function and concentration. The Sources and Uses Chapter provides a summary of the PFOS reported in children's products (these reports are available online <https://fortress.wa.gov/ecy/cspareporting/Default.aspx>).

## **Chapter 246-290 WAC**

In December 2017, the Washington State Board of Health started rulemaking for Chapter 246-290 WAC Group A Public Water Supplies, to consider setting a standard for PFAS. The revisions may include requirements for monitoring, recordkeeping and reporting, follow-up actions, and other associated requirements for PFAS and other unregulated contaminants with established state advisory levels. The rule revision may also include technical and editorial changes as needed. The revisions are intended to improve public health protection by setting a regulatory standard for PFAS chemicals in Washington for Group A public water systems. DOH supports EPA's May 2016 health advisory level for drinking water of 70 ppt (or 0.07 µg/L) for PFOA and PFOS, or combined. See the Health Appendix for additional information.

## **1.3 Executive orders**

### **Executive Order 04-01**

In 2004, Governor Locke issued Executive Order 04-01 requiring state agencies to reduce the use and purchase of products that contain persistent, bioaccumulative and toxic (PBT) compounds (Washington 2004). Several state purchasing efforts have focused on reducing the

presence of PBTs in state products. State purchasing preferences efforts related to PFAS have focused on PFAS-free carpet and food packaging.

### **Executive Order 18-01**

In 2018, Governor Inslee issued Executive Order 18-01 including the requirement that state agencies produce simple, clear and targeted guidance that ensures agency compliance with environmentally preferable purchasing including opportunities for toxic reduction (Washington 2018).

## **2.0 Federal**

Federal agencies that review PFAS include the Environmental Protection Agency (EPA), Food and Drug Administration (FDA), and Agency for Toxic Substances and Disease Registry (ATSDR). EPA regulatory actions summarized in the ITRC Fact Sheet are not repeated in this document (ITRC 2018), refer to the Health appendix or ITRC for more discussion:

- Lifetime health advisory of 70 nanograms per liter under the Safe Drinking Water Act.
- Unregulated contaminant monitoring rule data under the Safe Drinking Water Act.
- Significant new use rules under the Toxics Substances Control Act.
- PFAS reported at 14 sites under the Comprehensive Environmental Response, Compensation, and Liability Act.

### **2.1 Environmental Protection Agency**

PFAS are not currently regulated under the Resource Conservation and Recovery Act; the Clean Water Act; nor the Clean Air Act. Voluntary actions related to PFAS include:

#### **PFOS voluntary phase-out**

The 3M Company, the only U.S. manufacturer of PFAS voluntarily discontinued use of PFOS in the United States in 2000 and phased out PFOS chemistries globally by 2002 (USEPA 2019a).

#### **PFOA stewardship program**

EPA and eight major fluoropolymer and fluorelomer manufacturers established a Voluntary PFOA Stewardship Program in 2006. Participants include Arkema, Asahi Glass, Ciba (now BASF), Clariant (now Archroma), Daikin, DuPont, 3M/Dyneon, and Solvay Solexis. Manufacturers agreed to reduce PFOA, precursor chemicals, and related higher homologue chemicals by 95% no later than 2010. The agreement committed companies to work toward eliminating PFOA emissions and products by 2015. All participating companies state that they met the PFOA Stewardship Program goals (USEPA 2019b).

### **2.2 Food and Drug Administration**

The Food and Drug Administration oversees the safety of food, drugs, and cosmetics under the Federal Food, Drug, and Cosmetic Act (US Code Title 21, Chapter 9). Ingredients added to food and indirect food additives regulated under the Food, Drug and Cosmetics Act include substances that migrate from food packaging materials (USFDA 2017). Since the 1960s, PFAS

have been used as grease-proofing agents for food packaging such as fast-food wrappers, to-go boxes, and pizza boxes.

In 2011, the FDA and several manufacturers reached a voluntary agreement to stop interstate distribution of products containing long-chain PFAS (USFDA, 2017). In 2016, because the industry had discontinued the use, two PFAS were removed from the list of approved substances for oil and water repellants for paper and paperboard for use in contact with food (USFDA 2016).

## **2.3 Agency for Toxic Substances and Disease Registry**

The Agency for Toxic Substances and Disease Registry (ATSDR), under the U.S. Department of Health and Human Services, is an advisory health agency, working with other federal agencies, state and local jurisdictions, tribes, and healthcare providers. Its focus includes preventing harmful exposures to hazardous substances using the best science, taking responsive public health actions, and providing trusted health information to prevent harmful exposures and diseases related to toxic substances. In June 2018, ATSDR released a draft Toxicological Profile for 15 PFAS (ATSDR 2018). See the Health appendix for more information.

## **3.0 Other US PFAS regulations and advisories**

There are many PFAS regulations, advisories, and criteria and they are changing rapidly. The ITRC fact sheet on regulations and guidance provides a summary. Supplemental tables to this fact sheet are updated to track changes in state and federal criteria and guidance. Links to those documents:

- ITRC PFAS fact sheets: <https://pfas-1.itrcweb.org/>
- Links to ITRC regulations, guidance and advisory tables for water and soil. These standards are not discussed in more detail in this document.
  - [https://pfas-1.itrcweb.org/wp-content/uploads/2019/02/ITRCPFASFactSheetSect4Tables\\_January\\_2019.xlsx](https://pfas-1.itrcweb.org/wp-content/uploads/2019/02/ITRCPFASFactSheetSect4Tables_January_2019.xlsx)
  - <https://pfas-1.itrcweb.org/wp-content/uploads/2018/08/ITRCPFASFactSheetSect5TablesJuly18.xlsx>

Criteria detailed in the ITRC tables include:

- Guidance or standards for drinking water, groundwater, surface water or recreational water for selected PFAS established by 22 US states and 10 nations.
- Soil screening levels for protection of human health or groundwater for selected PFAS established by 10 US states and 7 nations.

Other U.S. regulatory actions are briefly summarized below.

## **3.1 Consumer Products**

Oregon's Toxic-Free Kids Act requires children's product manufacturers to report products that contain PFOS to the Oregon Health Authority (Chapter 431A.250 Oregon Revised Statute). The law requires manufacturers remove, substitute or seek a waiver for chemicals in children's cosmetics, mouthable products or products sold for children under the age of three (OHA 2017).

Vermont requires reporting by manufacturers using chemicals designated as Chemicals of High Concern in children's products, including PFOS (VDH 2016).

The California's Department of Toxic Substances Control Safer Consumer Products Program advances the design, development, and use of products that are chemically safer for people and the environment. California published the draft product-chemical profile for PFAS in carpet and rugs, under the Safer Consumer Product Regulations (DTSC 2018). The "Draft Three Year Priority Product Work Plan (2018-2020)" includes PFAS as a chemical to research in the Food Packaging category based on concern about "indirect food additives" (DTSC 2018b).

California's Proposition 65, the Safe Drinking Water and Toxic Enforcement Act of 1986, requires labelling of consumer products when chemicals in a product are carcinogens or toxic to reproduction. In November 2017, PFOA and PFOS were added to the list (OEHHA 2017).

### **3.2 Firefighting Foam**

The New York State Department of Environmental Conservation (NYDEC) adopted an emergency rule in 2016, addressing storage, handling, and release of firefighting foams containing PFOA, ammonium perfluorooctanoate (APFO), PFOS, and a PFOS potassium salt (K-PFOS). Class B foam with these chemicals is no longer allowed for firefighting (NYDEC 2016)

### **3.3 Fish Consumption Advisories**

Several states set consumption advisories for fish. A few examples are listed in below:

- Alabama Department of Public Health fish consumption advisory is one meal of 8 ounces of raw fish per month from the Baker's Creek and Wheeler Reservoir waterbodies with PFOS contamination (ADPH 2017).
- Minnesota Department of Health's 2018 fish guidelines set meal advice categories for PFOS in fish ranging from 10 ppm to 200 ppm PFOS (MNDOH 2018).
- New Jersey Department of Environmental Protection set preliminary fish consumption advisories for three PFAS – perfluorononanoic acid (PFNA), PFOA and PFOS - based on current New Jersey reference doses established for each of these compounds (NJDEP 2018)
- Wisconsin Department of Natural Resources 2016 fish consumption recommendations include PFOS contamination in Mississippi River (WIDNR 2016).

## **4.0 International**

ITRC tables identify international standards or guidance for PFAS in drinking water, groundwater, surface water, and soil. A few European approaches to PFAS are briefly summarized below.

Danish List of Undesirable Substances: PFOA and PFOS compounds are listed as substances of concern whose use should be reduced or halted (DEPA 2009).

Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH): PFOA, its salts and certain related substances are on the restricted substances list. C11-C14 PFAS, PFNA and its sodium and ammonium salts are identified as substances of very high concern (ECHA 2017).

In 2017, the Swedish Chemicals Agency (KEMI) and Germany's Federal Environment Agency (UBA) submitted a joint proposal to the European Chemicals Agency, calling for six highly fluorinated substances to be banned<sup>1</sup>. The proposed ban also applies to other PFAS that can be degraded to one of these six compounds. The ban would apply to a group of about 200 highly fluorinated compounds (KEMI 2017).

Stockholm Convention: PFOS and its salts<sup>2</sup> and PFOSF are restricted persistent organic pollutants (Stockholm 2019).

Water Framework Directive: PFOS and its derivatives are listed in the Directive on "Environmental Quality Standards" (EC 2019).

The use of legacy PFAS firefighting- foam, containing >0.001wt% PFOS, is banned in the European Union. PFOS-containing firefighting foam stocks must be managed as hazardous waste (Sontake 2014).

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<sup>1</sup> perfluorononanoic acid (PFNA), perfluorodecanoic acid (PFDA), perfluoroundecanoic acid (PFUnDA), perfluorododecanoic acid (PFDoDA), perfluorotridecanoic acid (PFTrDA) and perfluorotetradecanoic acid (PFTeDA)

<sup>2</sup> PFOS Salts: potassium perfluorooctane sulfonate (CAS no. 2795-39-3); lithium perfluorooctane sulfonate (CAS no. 29457-72-5); ammonium perfluorooctane sulfonate (CAS no. 29081-56-9); diethanolammonium perfluorooctane sulfonate (CAS no. 70225-14-8); tetraethylammonium perfluorooctane sulfonate (CAS no. 56773-42-3); didecyldimethylammonium perfluorooctane sulfonate (CAS no. 251099-16-8).



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