



# NEW YORK STATE WATER RESOURCES INSTITUTE

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## PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS): AN OVERVIEW

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### What are PFAS?

PFAS is short for per- and polyfluoroalkyl substances, a group of thousands of man-made compounds with many carbon and fluorine (C-F) bonds. These bonds make PFAS extremely stable and resistant to most degradation processes. They also add up (bioaccumulate) in the environment, earning them the label of “forever chemicals”. PFAS have been measured in drinking water systems all across the United States (U.S.). In New York State (NYS) PFAS have been detected in drinking water samples in the Village of Hoosick Falls, Town of Petersburg, the Newburgh area and in Nassau, Dutchess, and Suffolk counties <sup>1, 2</sup>.

### What are some products that commonly contain PFAS?

PFAS have been used since the 1940s in consumer products such as non-stick cookware and utensils, food packaging, polishes, cleaning agents, stain-resistant and waterproof clothes, textiles, and paper, and in industrial products such as firefighting foams, hydraulic fluids, mist suppressants, lubricating oils, and chemicals in electronics.

### How are people exposed to PFAS?

People are exposed to PFAS through <sup>3</sup>:

- Drinking water and consumption of fish and shellfish that is contaminated with PFAS
- Consumption of meat, milk and eggs of livestock raised on PFAS-contaminated land
- Household use of PFAS-containing products
- Consumption of food that came in contact with PFAS-containing products (e.g., some microwaveable popcorn bags and grease-resistant papers)

### What are the health effects of exposure to PFAS?

While the risks associated with PFAS exposure remain mostly unknown, research has shown a potential link of PFAS exposure to increased cholesterol levels, liver damage, increased risk of kidney and testicular cancer,

thyroid disease, increased risk of high blood pressure or pre-eclampsia in pregnant women, as well as delayed mammary gland development, reduced response to vaccines, and lower birth weight in unborn children <sup>e.g., 3 - 10</sup>.

### Are PFAS still being produced in the U.S.?

The two most common PFAS (“PFOS”: perfluorooctane sulfonic acid and “PFOA”: perfluorooctanoic acid) and other PFAS compounds that have 8 or more carbon atoms have been phased out in the U.S. but can still be imported into the U.S. in consumer goods. Shorter chain PFAS are still commercially produced in the U.S. While short chain PFAS have been branded as safer and less toxic, they are similarly persistent in the environment and may have similar health impacts as long-chain PFAS <sup>e.g., 11-13</sup>.

### Are PFAS regulated in drinking water in the U.S.?

In 2016, the USEPA issued a lifetime health advisory (HA) of 70 ppt for the sum of PFOA and PFOS <sup>14, 15</sup>. HAs serve as an informal technical guidance for federal, state and local officials and are not legally-enforceable federal standards. The USEPA announced in February, 2020 that it is making preliminary regulatory recommendations for PFOS and PFOA - a step that precedes the possible regulation of PFAS. Some states have set their own enforceable maximum contaminant levels (MCLs) for PFOA and PFOS. In July, 2020 NYS announced MCLs of 10 ppt for PFOA and 10 ppt for PFOS <sup>16</sup>.

### How do I know if my tap water is contaminated with PFAS?

To test your tap water for PFAS, it is recommended to have your samples tested by an EPA-certified laboratory. There are 27 EPA-accredited labs that measure PFOS and PFOA<sup>a</sup> across the U.S., 4 of which are in NYS. To search for an EPA-certified lab online:

1. Go to the Department of Health’s “[Search NY Accredited Environmental Laboratories](#)” tool.

<sup>a</sup>The USEPA has approved USEPA method 537.1 <sup>17</sup> and USEPA method 533 <sup>18</sup> for the measurement of 29 PFAS.

2. Use the Advanced Search box, then choose: “Potable Water” for CATEGORY and “perfluorooctanesulfonic acid (PFOS)” or “perfluorooctanoic acid (PFOA)” for ANALYTE.
3. Hit “View Results”
4. Click on show “All” entries to see the accredited labs.
5. Contact your preferred lab for instructions on testing.

### What can I do at home if my drinking water is contaminated with PFAS?

If your drinking water is contaminated with PFAS, you can install a certified in-home treatment system that uses activated carbon filtration or reverse osmosis. Certified filters that have NSF/ANSI 53 or NSF/ANSI 58 are verified as able to remove PFAS. While anion exchange treatment can also remove PFAS, there is currently no product certification for it. For a list of

certified products that remove PFAS, visit [NSF Official Listings](#). You might also consider [contacting your elected officials](#) to communicate your PFAS results and urge action on the matter.

### For more information on PFAS, check out the following resources:

- National Institute of Environmental Sciences: [Perfluoroalkyl and Polyfluoroalkyl Substances \(PFAS\)](#)
- American Water Works Association: [Per- and Polyfluoroalkyl Substances \(PFAS\): Overview and Prevalence](#)
- NYS Department of Environmental Conservation (DEC): [Per- and Polyfluoroalkyl Substances \(PFAS\)](#)
- Environmental Protection Agency: [Per- and Polyfluoroalkyl Substances \(PFAS\)](#)

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