Air Force PublicAffairs

PFOS/PFOA FREQUENTLY ASKED QUESTIONS

As of July 2020

Contents

About PFOS/PFOA

Q. What are Perfluorooctane sulfonate (PFOS) and Perfluorooctanoic acid (PFOA)?
A. PFOS and PFOA, part of a larger group of compounds known as perfluoroalkyl substances (PFAS), are synthetic fluorinated organic chemicals used in many industrial and consumer products such as nonstick cookware, stain-resistant fabric and carpet, some food packaging and specialized firefighting foam, including legacy Aqueous Film Forming Foam (AFFF) used by the Air Force and other Department of Defense Components. AFFF is highly effective for extinguishing petroleum-based fires, and is also used by local fire departments, and the commercial aviation, oil and gas, marine, and mining industries.

Q. What is the difference between PFAS and PFOS/PFOA?
A. PFAS are a group of manmade chemicals commonly used in a variety of industries. PFOS and PFOA are part of the PFAS family of synthetic fluorinated chemicals and are the only two compounds of this group with established Environmental Protection Agency health advisories for drinking water.

Q. Are PFOS/PFOA still being produced and used?
A. PFOS/PFOA are no longer manufactured in the United States, however they are still being produced internationally in consumer goods and are imported into the United States. These consumer goods include paper and packaging, leather and apparel, carpet, coatings, textiles, rubber and plastics. For more information visit https://www.epa.gov/pfas/basic-information-pfas.

Regulatory Frameworks

Q. Are PFOS/PFOA regulated?

A. PFOS/PFOA are currently classified as emerging contaminants.

Under the Safe Drinking Water Act (SDWA), there are currently no Maximum Contaminant Levels (MCLs) established for PFOS/PFOA, however the Environmental Protection Agency (EPA) has initiated the steps to establish the need for an MCL under the regulatory determination process. On May 19, 2016, the EPA established a lifetime Health Advisory (HA) level of 70 parts per trillion for PFOS and/or PFOA in drinking water (USEPA, 2016). This advisory applies only to drinking water for humans.

Under the Toxic Substances Control Act (TSCA), the EPA proposed a Significant New Use Rule on January 21, 2015, which requires manufactures, importers and processors of PFOA and related chemicals to notify the EPA at least 90 days before resuming or starting new uses of these chemicals in any products.

Under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the EPA is taking the necessary steps to propose designating PFOS/PFOA as "hazardous substances".

Under the Emergency Planning and Community Right to Know Act (EPCRA), the EPA added 172 PFAS to the list of chemicals required to be reported to the Toxics Release Inventory on June 22, 2020 and established a 100 pound reporting threshold for these substances.

Visit https://www.epa.gov/pfas/pfas-laws-and-regulations for more information on PFOS/PFOA regulations.

Q. What do parts per trillion (ppt) concentrations in drinking water mean in simple terms?

A. In 2016, the U.S. Environmental Protection Agency issued a lifetime HA for PFOS and PFOA in drinking water of 70 parts per trillion. For context, one (1) ppt is equivalent to one (1) drop of water in 20 Olympic-sized swimming pools.

Q. Where can I find updates on the Federal PFOS/PFOA laws and regulations?

A. Visit https://www.epa.gov/pfas/pfas-laws-and-regulations for current updates on the Federal PFOS/PFOA laws and regulations.

Q. Will the Air Force follow the PFOS/PFOA regulations passed by states?

A. The Air Force complies with state environmental cleanup laws to the extent authorized and required by Federal cleanup law. Under CERCLA, once a need for cleanup action has been determined based on the risk assessment process, Federal and state cleanup standards are evaluated to see if they are Applicable or Relevant and Appropriate Requirements (ARARs) at the specific site. If so, they are incorporated into the cleanup levels that must be attained at the site. This process applies to both State drinking water and groundwater cleanup standards. Separately and not part of our cleanups, we must also follow the SDWA for locations where we are the purveyor of drinking water. If a State promulgates a SDWA all water purveyors in that State, must comply with the State standard in finished drinking water.

Health Impacts of PFOS/PFOA

Q. Are there health effects from PFOS and PFOA?

A. According to the Agency for Toxic Substances and Disease Registry (ATSDR), some scientific studies suggest that certain PFAS may affect different systems in the body. ATSDR is working with various agencies to better understand how exposure to PFAS might affect people's health—especially how exposure to PFAS in water and food may be harmful. For more information, visit https://ww.atsdr.cdc.gov/pfas/index.html.

Q. How do I know whether or not I have been exposed to PFOS/PFOA?

A. Tests indicating how much of each PFAS is in your blood are available, however these tests do not provide the information to pinpoint a health problem or treatment options. It is best to seek answers regarding test options and the health effects of PFOS/PFOA from subject matter experts such as the ATSDR. For more information, visit https://www.atsdr.cdc.gov/pfas/health-effects/index.html.

Q. Is it safe to drink water with PFOS and PFOA below the EPA's lifetime HA?

A. The EPA's lifetime HA was calculated to offer a margin of protection against adverse health effects to the most sensitive populations: fetuses during pregnancy and breastfed infants. The lifetime HA is calculated based on the drinking water intake of lactating women, who drink more water than other people and can pass these chemicals along to nursing infants through breastmilk. For more information, visit https://www.epa.gov/ground-water-and-drinking-water/drinking-water-health-advisories-pfoa-and-pfos or talk to your local health department or physician.

Q. Will the Air Force fund a study on the health effects of people exposed to PFAS in drinking water?

A. The Air Force relies on the ATSDR, under the Department of Health and Human Services (DHHS), for guidance on health-based actions.

The Air Force supports Centers for Disease Control and Prevention (CDC) and the ATSDR in its conduct of exposure assessments in communities near current or former military bases and that are known to have had PFAS in their drinking water. The primary goal of these exposure assessments is to provide information to communities about levels of PFAS in their bodies. This information will also be used to help inform future studies evaluating the impact of PFAS exposure on human health. People in each of these communities will be randomly selected to participate in these exposure assessments. CDC/ATSDR began work on the exposure assessments in 2019 and anticipates they will continue through 2020. For more information, visit https://www.atsdr.cdc.gov/pfas/PFAS-Exposure-Assessments.html.

How and Why Has the Air Force used PFOS/PFOA

Q. Why is PFOS/PFOA being discovered on Base Realignment and Closure (BRAC) and active installations?

A. In 1970, the Air Force began using a legacy formula of AFFF which contained PFOS and PFOA to extinguish petroleum fires, commonly associated with burning aircraft. AFFF is the most efficient extinguishing method for petroleum-based fires and is widely used across the firefighting industry, to include all Federal Aviation Administration (FAA) certified commercial airports, to protect people and property. The Air Force replaced legacy AFFF in all emergency response vehicles and stockpiles with an alternative formula in 2018, and replaced legacy AFFF in all hangar fire prevention systems in 2019.

Q. How is the new Aqueous AFFF different from the legacy AFFF?

A. The legacy AFFF formula contains long-chain fluorosurfactants while the new formula contains shorter chain molecules. Data reviewed by the EPA in 2009 suggests these shorter-chain formulas are less toxic because the chemicals are cleared from the body faster and are not considered bio-accumulative or bio- persistent. The new formula meets both military specifications for firefighting and the goals of the EPA's 2010/15 PFOA Stewardship Program.

Q. Why doesn't the Air Force just use PFAS-free foam?

A. The Air Force is continuing to aggressively pursue PFAS-free firefighting technologies in anticipation of the impending ban on use of PFAS-containing foams. Today's currently available AFFF do not contain detectable amounts of PFOS or PFOA, but they still contain other PFAS. None of the commercially available PFAS-free foams meet DoD's strict safety standards to rapidly extinguish dangerous fuel fires. When AFFF must be used for an actual emergency, the Air Force treats each use as a spill response to limit PFAS releases to the environment.

Q. How is the Air Force disposing of AFFF?

A. We drain and collect the legacy AFFF from fire vehicles then triple rinse the vehicle foam tanks and collect the effluent. The legacy AFFF and effluent is then sent to an authorized hazardous waste incineration facility that maintains current Clean Air Act (CAA) and Resource Conservation and Recovery Act (RCRA) permits for incineration. The incineration disposal method is currently the most environmentally safe way to eliminate the health and environmental risks associated with AFFF.

Ensuring Safe Drinking Water on Air Force Installations

Q. How many Air Force locations have had PFOS/PFOA releases?

A. The Air Force identified 203 installations in the U.S. (active, Reserve, Air National Guard and BRAC) where AFFF may have been released due to past mission activities, and is conducting site inspections to confirm if releases occurred.

Q. How is the Air Force addressing PFOS/PFOA on BRAC and active installations?

A. We are using a comprehensive approach to identify AFFF releases, respond to drinking water above the EPA's lifetime HA impacted by an Air Force release of AFFF, and prevent uncontrolled AFFF discharges for system testing and training.

Assessing and Eliminating PFOS/PFOA Exposure in Off Installation Public and Private Drinking Water

Q. Will the Air Force test my well?

A. We are taking a proactive, measured approach to sampling off-base wells. During the site inspection phase, we will identify wells to sample based on probability of contamination, proximity to contaminant areas and possible pathways from the site of contamination to the drinking water wells. If the site inspection indicates the potential for your well to have PFOS/PFOA over the EPA's lifetime HA levels, we could then sample the well.

Q. I live near an installation; why won't the Air Force sample my well?

A. Your well might not be in an area where there is reason to believe that drinking water has been impacted by mission activities. We use data and site information to map contaminant migration and potential pathways to drinking water. Doing so allows us to focus sampling efforts in the locations potentially impacted.

Q. What will happen if my private well is found to have levels of PFOS/PFOA above the EPA's lifetime HA level due to PFOS/PFOA that have migrated off the installation?

A. The Air Force's priority is protecting human health and drinking water sources. If the Air Force samples your drinking water well and determines the PFOS/PFOA level is above the EPA's lifetime HA, the Air Force will implement response actions to provide alternate drinking water. This may include supplying your household with bottled drinking water, connecting your home to a municipal drinking water supply, or installing a treatment/filtration system on your private well.

Q. Can you provide the results of drinking water samples taken off base?

A. We can't release results for specific wells – that information belongs to the well owner – but we can provide a range of PFOS/PFOA contamination levels detected.

Investigating and Responding to PFOS/PFOA Releases Under Air Force Cleanup Program

Q. What is the Air Force's response strategy for PFOS/PFOA?

A. The Air Force response strategy for PFOS/PFOA has three lines of effort: protecting human health, communication and collaboration and a whole-of-government approach to address this national issue.

> **Line of Effort #1:** Protect Human Health: Air Force investigation work and response actions follow CERCLA, also known also as Superfund.
>
> **Identify –** Preliminary Assessments are conducted to identify potential AFFF storage, usage and releases. Site Inspections are being conducted to determine if AFFF was released to the environment and if human drinking water has been, or may be, impacted. The Air Force tested on-base drinking water to evaluate for PFOS/PFOA exceedance of EPA's lifetime HA.

Respond – We are responding to PFOS/PFOA above the EPA's lifetime HA in drinking water and pathways to human receptors impacted by an Air Force release of AFFF.

Prevent – We have replaced AFFF with a more environmentally responsible formulation that contains no detectable levels of PFOS or PFOA at all our locations, and we no longer allow uncontrolled AFFF discharges for system testing and training. In the event of a discharge, we respond as if it were a hazardous material spill.

Line of Effort #2: Communication and Collaboration: The Air Force recognizes that transparent and consistent communication and collaboration with federal, state, and local stakeholders is necessary to address the complex national issue of PFOS/PFOA contamination. As we gather data to develop informed solutions, we actively work with the community partners, advisory boards, regulators, and other local, state, and federal stakeholders to get their input, work through specific issues, and collaboratively implement our PFOS/PFOA program.

Line of Effort #3: Whole-of-Government Approach: We recognize that a whole-of-government approach is needed to address what has become a national issue requiring extensive interagency coordination. The intended outcome is to identify unified solutions to PFOS/PFOA challenges through interagency relationships.

Q. What is CERCLA?

A. Congress established CERCLA—also known as Superfund in 1980 in response to risks to human health and the environment posed by contaminated sites. The process promotes accountability, community involvement and long-term protectiveness. The goal of CERCLA is to protect human health and environment by cleaning up sites that present an unacceptable risk.

The CERCLA process depends on regulatory standards to fully identify and resolve contamination. Without established standards, federal and state agencies are often unable to use taxpayer dollars to investigate and respond to undefined contamination, and regulatory agencies lack the ability to enforce action.

Q. How does the Air Force respond if they are the water purveyor?

A. Where the Air Force is the water purveyor, the Air Force tested drinking water supplies for PFOS/PFOA. Where sample results exceed the EPA's lifetime HA of 70 parts per trillion, we provide alternate drinking water. Additional response actions may include communicating with local regulators and drinking water officials, proper consumer notification, and evaluation of options to reduce PFOS/PFOA concentrations below the EPA's lifetime HA.

Replacing Legacy AFFF

Q. When did the Air Force begin eliminating PFOS-based AFFF?

A. In 2007, U.S. Air Force locations in Europe began replacing PFOS-based AFFF in both mobile and fixed systems with European-Union-approved AFFF after the European Parliament and the council of the European Union issued a directive restricting the use of PFOS-containing substances. In March 2011, the Air Force Civil Engineer Center initiated an informal plan for Air Force fire chiefs to dispose of "excess" PFOS-based AFFF Air Force-wide over a 10-year period. In November 2015, more environmentally responsible formulas were added to the DoD's qualified products list for firefighting agents.

The Air Force completed new foam delivery in August 2017. Transition to the new formula is complete in fire trucks, stockpiles and hangar systems. The Air Force retrofitted all our fire vehicles with an Eco-logic system which enables fire protection testing without AFFF discharges. Approximately 850 fire trucks were retrofitted in 2019.

Q. What type of replacement foam will be used and how effective is it?

A. The Air Force awarded a $6.2 million contract to ICL Performance Products for 418,000 gallons of Phos-Chek 3 percent, six carbon chain AFFF. Delivery began in August 2016 and was completed in May 2017. The new formula meets both MILSPEC requirements for firefighting and the goals of the EPA 2010/15 PFOA Stewardship Program.