

Perfluoralkyl sulfonate (PFOS) & Fish Consumption Advisory Fact Sheet

PFOS is an emerging contaminant found in fish located in certain portions of the Wheeler Reservoir. PFOS is extremely persistent in the environment, and can be transported long distances from its site of manufacture in the atmosphere. As a result, PFOS can be found in the air, soil, and water across the nation. Alabama is not the only state that has reported fish containing PFOS.

What is PFOS?

- PFOS is an organic molecule that contains fluorine. Prior to being phased out in 2002, PFOS was produced in large quantities.
- PFOS was used either by itself, or as a starting material for larger molecules.
- PFOS is also known as 1-octanesulfonic acid, heptadecafluoro-, 1-perfluorooctanesulfonic acid, heptadecafluoro-1-octanesulfonic acid, perfluoro-n-octanesulfonic acid, perfluorooctanesulfonic acid, and perfluorooctylsulfonic acid.
- PFOS is chemically and biologically stable, and very resistant to degradation. Therefore, it is extremely persistent in the environment.
- PFOS has been shown to accumulate in fish tissues and the only perfluorinated compound that with this characteristic.

What are the health effects of PFOS?

- PFOS can be found in small quantities in both human and wildlife blood samples nationwide.
- Limited studies have indicated that fish consumption may be a route of human exposure to PFOS.
- PFOS is readily absorbed after ingestion and accumulates primarily in the blood, kidney, and liver.
- Due to its chemical nature, metabolism in the body is very slow. Therefore, it can stay in the body for a long time.
- Animal studies have raised some concerns about potential health effects of PFOS.
- Human toxicity is not well understood. Some epidemiological studies have shown an association between PFOS exposure and adverse health effects; however more research is needed.



- PFOS is not considered a carcinogen in humans.

What is the federal standard for PFOS in fish tissue?

- The US Environmental Protection Agency (EPA) has developed a Reference Dose (RfD) of 0.077 µg/kg-day for calculating the allowable limit of PFOS in fish tissue.
- An RfD is defined as the estimate of the maximum daily exposure a people can have to a hazard and still safe during a lifetime. This does not include cancer.
- The RfD represents the maximum tissue concentration of a chemical before it is harmful.

How much PFOS in fish tissue is safe to eat?

- Using the RfD and some standard information based on national body weight and food consumption patterns, the following values were determined.
 - No restriction = 0 – 40 µg/kg
 - 1 meal/week = 41 – 200 µg/kg
 - 1 meal/month = 201 – 800 µg/kg
 - Do Not Eat = >800 µg/kg

Why was a fish consumption advisory recommended for the Baker’s Creek embayment of Wheeler Reservoir?

- Based upon the results of joint testing by the Alabama Department of Environmental Management (ADEM) and the 3M Company, fish in the Decatur area had tissue concentrations in largemouth bass greater than 800 µg/kg or part per billion (ppb).
- Largemouth bass are a top predator fish and are used commonly as a sample species for fish testing.
- Using the cutoff concentrations for PFOS in fish tissue shown above, the “Do Not Eat” value was assigned and the advisory recommendation issued.
- Further fish testing of the reservoir is currently under way to determine if the advisory needs to be extended beyond the current location.

Where can I find more information on PFOS?

- For more Alabama Fish Advisories, go to www.adph.org/epi, Fish Advisories.
- For more information about PFOS, go to http://www.epa.gov/fedfac/pdf/emerging_contaminants_pfos_pfoa.pdf.

