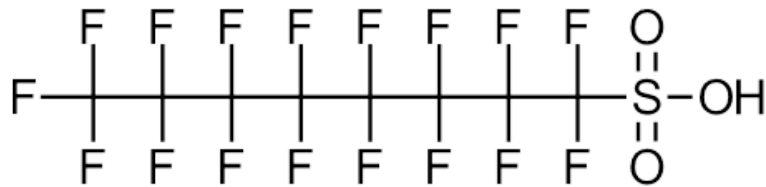


CAS 1763-23-1

Perfluorooctanyl Sulphonic Acid & its salts (PFOS)

$C_8HF_{17}O_3S$



Summary of Health Effects

Perfluorooctanyl sulphonic acid (PFOS) can affect how an animal develops, and can damage the liver in animals. It may also affect the health of women during pregnancy.

How is PFOS used?

PFOS and its salts (ionic compounds made up of oppositely charged compounds, which may degrade into PFOS) are perfluorochemicals that have been used in waterproofing materials such as 'Scotchguard', in children's apparel, carpeting and furniture.¹

Toxicity: What are its health effects?

Exposure to PFOS is associated with developmental toxicity. The offspring of rats exposed to PFOS showed delayed eye opening and decreased pup weight.^{2,3}

In animal studies, the liver is considered the most sensitive target organ, based on increases in liver weight, changes in liver cells, and changes in blood cholesterol.¹

PFOS belongs to a class of chemicals called perfluoroalkyls. Some studies in people show that certain perfluoroalkyl chemicals may affect growth, learning and behavior of infants and older children, lower a woman's chance of getting pregnant, interfere with the body's natural hormones, increase cholesterol levels,

affect the immune system, and increase the risk of cancer.⁴

Exposure: How can a person come in contact with it?

A person can come in contact with PFOS by drinking contaminated water, eating contaminated food, or from skin contact with consumer products. Children may also be exposed to PFOS through hand-to-mouth contact with treated carpets and upholstery.¹

PFOS is a Persistent, Bioaccumulative, and Toxic (PBT) substance that has been widely detected in the serum of the U.S. population through biomonitoring surveys.⁵

Detection of PFOS in serum is usually means there has been a cumulative exposure over a few years.⁶ The four most common perfluoroalkyl chemicals at the time, including PFOS, were detected in 95 to 100% of blood samples in the 1999 – 2000 and 2003 – 2004 Nation Health and Nutrition Examination Survey (NHANES).⁶

While PFOS has not been found to accumulate in fat tissue, it does have a long residence time in the human body and has a half-life of about four to five years.¹

References

1. Agency for Toxic Substances & Disease Registry (2018). ATSDR Draft Toxicological Profile for Perfluoroalkyls. www.atsdr.cdc.gov/ToxProfiles/tp200.pdf
2. USEPA, 2016. Drinking Water Health Advisory for Perfluorooctanoic Acid (PFOA). 822-R-16-005. U.S. Environmental Protection Agency Office of Water (4304T) Health and Ecological Criteria Division, Washington, D.C.
3. Luebker, DJ., et al., 2005. Two-generation reproduction and cross-foster studies of perfluorooctanesulfonate (PFOS) in rats. Toxicology 215 (2005) 126–148.
4. Perfluoroalkyl and polyfluoroalkyl substances (PFAS) Frequently Asked Questions, 8/22/17, Agency for Toxic Substances and Disease Registry, Centers for Disease Research and Prevention, www.atsdr.cdc.gov/pfas/docs/pfas_fact_sheet.pdf
5. Centers for Disease Control and Prevention. Fourth Report on Human Exposure to Environmental Chemicals, Updated Tables, (March, 2018). Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention. www.cdc.gov/exposurereport
6. Centers for Disease Control and Prevention National Biomonitoring Program. Biomonitoring Summary – Perfluorochemicals. (Updated December 2013). www.cdc.gov/biomonitoring/PFAS_BiomonitoringSummary.html