

Perfluorooctanoic acid (PFOA) | 2019 Cycle 10

Substance Overview

Perfluorooctanoic acid (PFOA) is a chemical in a group of contaminants called per- and polyfluoroalkyl substances (PFAS). Because of its chemical properties, PFOA has been used as stain repellants in commercial products like carpet and fabric, as a coating for packaging, and in some fire-fighting foams.¹ PFOA can persist in the environment and in the body for long periods of time.¹

Recommendations

Wisconsin does not currently have an NR140 Groundwater Quality Public Health Enforcement Standard for PFOA.

DHS recommends a combined enforcement standard of 20 nanograms per liter (ng/L) for PFOA. The recommended standard is based on a study that used modeling to estimate how much PFOA a mother has to be exposed to in order to protect the infant from developmental effects. **This standard applies to the sum of PFOA and PFOS concentrations in groundwater.**

DHS recommends that the NR140 Groundwater Quality Public Health Preventive Action Limit for PFOA be set at 10% of the enforcement standard because PFOA has been shown to have carcinogenic, teratogenic, and interactive effects.

Health Effects

Studies in workers and people living in areas with high levels of PFOA show that PFOA may increase cholesterol, damage the liver, cause pregnancy-induced hypertension, increase the risk for thyroid disease, decrease antibody response to vaccines, decrease fertility, and cause small decreases in birth weight.¹ Studies in research animals have found that PFOA can cause damage to the liver and the immune system, birth defects, delayed development, and newborn deaths in lab animals.¹

The International Agency for Research on Cancer (IARC) classifies PFOA as possibly carcinogenic to humans and the EPA states there is suggestive evidence of carcinogenic potential for PFOA. PFOA has been shown to be genotoxic in some tests, but has not been shown to be mutagenic.^{2,3} Both PFOA and PFOS have been shown to cause the same or similar effects on the immune system, development, and reproduction in people and research animals indicating that PFOA can cause interactive effects.^{1,4,5}

Current Standards

Enforcement Standard:	N/A
Preventive Action Limit:	N/A
Year:	N/A

Recommended Standards

Enforcement Standard:	20 ng/L
Preventive Action Limit:	2 ng/L
(Sum of PFOA and PFOS)	

References

1. ATSDR. Toxicological Profile for Perfluoroalkyls - Draft for Public Comment. In: Registry AftSaD, ed. Atlanta, GA2017.
2. USEPA. Drinking Water Health Advisory for Perfluorooctanoic Acid (PFOA). In. Vol EPA 822-R-16-0052016.
3. USEPA. Health Effects Support Document for Perfluorooctanoic Acid (PFOA). In. Vol EPA 822-R-16-0032016.
4. USEPA. Drinking Water Health Advisory for Perfluorooctane sulfonic acid (PFOS) In. Vol EPA 822-R-16-0042016.
5. USEPA. Health Effects Support Document for Perfluorooctane sulfonic acid (PFOS) In. Vol EPA 822-R-16-0022016.

This document is a summary of the Scientific Support Document for the Cycle 10 Recommended Groundwater Standard for this substance. The recommendations in this summary were developed in accordance with [Chapter 160](#), Wis. Stats.