Fire Wire Special Edition – PFAS Task Force

Creation of PFAS Task Force:

WSFCA President Bantes has created a PFAS Task Force to create some guidance as to better, best practices. This is PFAS Task Force – Special Edition 1. Which will hopefully create a better understanding of PFAS and current legislation. We hope to present – Special Edition 2 in the next week or so with that focus being on PFAS Foam alternatives including departments that are using different brands and on board tank remediation. Also, a brief synopsis of PFAS and turnout gear practices.

Thanks to these members who President Bantes has appointed to the PFAS Task Force for their involvement and input.

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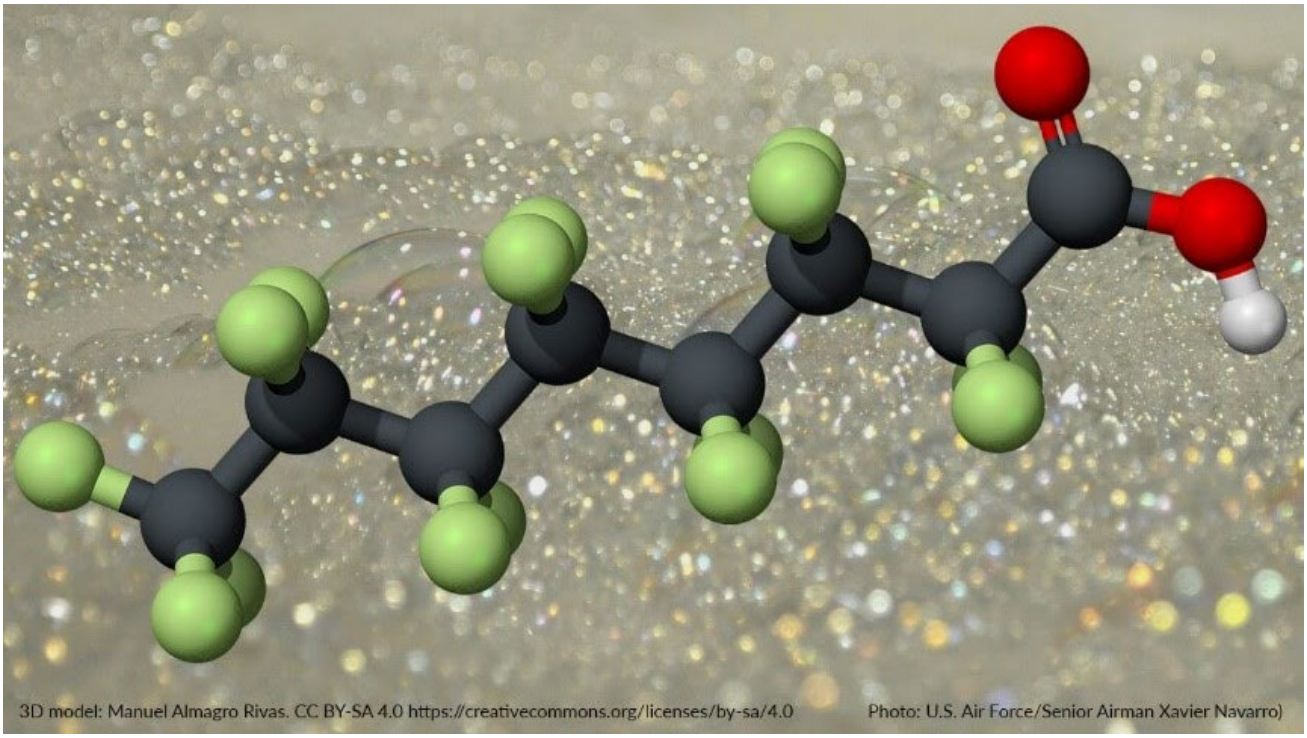
PFAS Legislation

PFAS



What Are PFAS?

PFAS is a catch-all term for **per- and polyfluoroalkyl substances**, which is a group of more than 5,000 synthetic chemicals. While PFAS have drawn a lot of attention lately, they are not new — they've been in use as early as the 1940s.

As a group of chemicals, PFAS have many carbon-fluorine bonds. These bonds are very strong and hard to break, meaning that there are not many ways of breaking down the compounds. This is why PFAS are sometimes described as "forever chemicals."

Chemicals in the PFAS family have many valuable properties and, as a result, are useful in a wide range of applications. They can make surfaces non-stick or waterproof clothing, so these chemicals are used in furniture, stain resistant carpet treatment, paper products, textiles, electrical wire insulation, nonstick cookware, cosmetics and in the production of fluoropolymers like Teflon. While many of us are aware of the PFAS contained in some firefighting foams, others are surprised to find out that there are PFAS used in the production of our turnout gear as well.

How Do PFAS Get Into The Environment?

PFAS are used in many applications, so there are many ways that they can get into the environment. There are also different ways in which humans might be exposed, including consumer products, contaminated drinking water or general environmental contamination such as dust. PFAS are also common in surface waters around the world. The chemicals were first **detected** in water in the Great Lakes in 2003. PFOS was **detected** in polar bears around the same time, and there is recognition of these chemicals as global contaminants.

Wastewater treatment plants are not a source of PFAS, but they are also not designed to process the chemicals into safer compounds. As a result, any PFAS that come into a treatment plant typically end up in the treated water or biosolids produced by the plant. In Wisconsin, treated wastewater is typically sent to surface waters, and the treated biosolids are often used as fertilizer on farms.

Both PFOS and PFOA are no longer manufactured in the United States due to voluntary industrial phaseouts. However, these chemicals persist in the environment, and there are many other PFAS still in use, some of which break down into PFOS and PFOA.

Why Are People Concerned About PFAS?

All of the increasing attention to PFAS is driven by concerns about human and ecosystem health. Some PFAS have been **linked to** growth & learning, thyroid disease, decreased fertility, behavior in children, pregnancy complications, low birth weights,

decreased immune response and increased cholesterol. There is also some evidence that ties PFAS to cancer, primarily among people who lived or worked near contaminated manufacturing locations. At this time, scientists are still learning about the health effects of exposures to mixtures of PFAS.

PFAS are also a threat to human health because some chemicals can accumulate in the body. For example, PFOA and PFOS were **found in the blood** of nearly all people tested in several national surveys. Both have been a concern because they do not break down in the environment, can move through soils and contaminate drinking water sources, and they build up (bioaccumulate) in fish and wildlife. PFAS have been found in rivers and lakes and in many types of animals on land and in the water.

Firefighting Foams and PFAS

AFFF was developed in the 1960's and used by U.S. Armed Forces and fire departments. Since its inception, the use of PFAS's in foam give these mixtures low surface tension and ability to spread. Thus making these foams particularly effective against flammable liquid fires when mixed with water. In 2006, US manufacturers agreed with the EPA to voluntarily stop using these C8 compounds. However, C8 substances are still found due to importing.

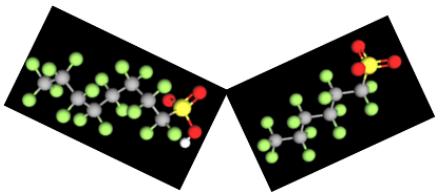
Foam manufacturers begin to use C6 (a shorter carbon chain) which they claim to be "safe" or "safer." Professor Peaslee provides an explaination of C8 vs C6 in the next section.

Is C6 Foam Safe or Safer. True or False?

The following was provided by Professor Peaslee of Notre Dame. Professor Peaslee is one of the leading experts on PFAS and will be speaking at the Wisconsin State Fire Chiefs Winter In-Service to be held in Green Bay on February 28th and 29th.

Professor Peaslee states: *"While everybody has agreed to a phase out of the C8 (or long-chain) PFAS use in AFFF - because of the incredible environmental persistence as well as the bioaccumulation potential in people and its known toxicity - and it has become a very visible public health issue with all the military and civilian air bases where it has been used for decades, the chemical industry quickly came up with an alternative of C6 PFAS (short-chain PFAS), which could be used to replace the AFFF. Note that these are the same chemical manufacturers that made the original C8 formulation with 8*

carbon chains for 40 years and forgot to tell anybody about their toxicity. The new formulations have only six carbons in a chain. Here is the visual difference:



One of these is PFOS and the other is PFHxS. There is a slight difference - but to the average viewer it is small.

The big difference, and the reason the chemical companies list this as "safer", is that the bioaccumulation potential of these replacement C6 chemicals is lower. They exit the body faster once they are ingested. This does lower their toxicity. However, they are still environmentally persistent (in the hundreds of years) like the C8 and they are even more soluble...so they will get further in the environment. If they escape through unrestricted use of AFFF on a fire event, then the ground water concentrations will generally be higher than the long-chain PFAS. When people drink the contaminated groundwater, they will expel it quicker...but since it is more concentrated to begin with, and persists in the groundwater as long as the long-chain, then for the average public health concern - these chemicals are just as bad, and perhaps worse (because there are more of them). The toxicity studies are not as advanced as the C8 studies yet - because we are only now starting to poison millions of people with the C6 variety of PFAS, but this may well be another example of a regrettable substitution by the chemical industry when we look back on it in 20 years."

So be careful when a manufacturer makes claims that their foam is safe or safer. Many of those claims are based on the utilization of C6 not truly being Fluorine Free Foam.

PFAS Legislation:

2019 Senate Bill 310 has passed the State Assembly and Senate and is off to the Governor's desk. Here is the link to 2019 Senate Bill 310.
Some highlights of **2019 Senate Bill 310 states**:

(3) Exemptions. The prohibition under sub. (2) does not apply to any of the following:

a. The use or discharge of a class B fire fighting foam that contains intentionally added PFAS as part of an emergency fire fighting or fire prevention operation.

- Based on this verbiage in the legislation, firefighting foam containing intentionally added PFAS can be used as part of an emergency firefighting or fire prevention operation. However, what is the definition of "an emergency?"

Therefore, the PFAS Task Force is recommending that PFAS containing foam only be used in life threatening situations. Additionally, although pending

legislation allows for the use of PFAS foam for firefighting operations, it is likely that the DNR may require clean up and remediation. Who will pay for the potential clean up costs? Departments, the municipality?

Section 2 . Nonstatutory provisions.

(1) The department of natural resources shall use the procedure under s. 227.24 to promulgate rules under s. 299.48 (5) no later than the first day of the 7th month beginning after the effective date of this subsection.

Beyond the passage of legislation, the DNR will create additional rules.

Clean Up Help on the Way?

2019 Senate Bill 717 was just introduced on January 24, 2020 and already has strong bipartisan support. This proposed bill would require the Department of Agriculture, Trade and Consumer Protection, in collaboration with the Department of Natural Resources, to collect and store or dispose of firefighting foams that contain perfluoroalkyl or polyfluoroalkyl substances (PFAS) and that are voluntarily surrendered.

This would be of great benefit to fire departments and alleviate one of the costs (disposal) associated with PFAS Foams. However, fire departments will still have to decontaminate holding tanks and replace the foam products with currently safer products.

DNR Survey

Departments should have received a letter with a link to a Department of Natural Resources survey in which they are looking for questions as to departments use and stockpile of foam. Should we answer it? Yes, this survey has been vetted by the Wisconsin Fire Chiefs and participation is encouraged. WSFCA understands that exposing a departments foam inventory may cause some concern of future disposal and costs. However, WSFCA are hopeful that Senate Bill 717 passes and this survey information becomes the groundwork for disposal cost recovery or by the State.

Even if State funding for disposal does not become available, consider this. Would a municipality rather pay for the disposal of 30-40 gallons of foam or the remediation costs of cleaning up 100,000 – 150,000 gallons of foam contaminated runoff after using PFAS foam? Please consider participating in the survey. The survey can be found at **https://study.uwsc.wisc.edu/ firefighting** then enter passcode: **3ubhv748**

The next **Special Edition Fire Wire** by the PFAS Task Force will include:

- Non-PFAS Foam alternatives and who is using them in the state
- On board tank remediation and disposal contractors
- Recommendation or limiting use guideline for PFAS Foams
- PFAS and turnout gear
- Any additional updates, as information is flying

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