
FIRE DEPARTMENT SERVICE ANNOUNCEMENT

Bulletin # 45, PFAS and the Firefighter, November 26, 2021

<p>When PFAS are found in drinking water contaminated from Aqueous Film Forming Foam (AFFF), what happens? The chemicals are “persistent, bioaccumulative and toxic.”¹ PFAS are very difficult and costly to remediate in water sources.</p>	<p>What about PFAS in human blood? PFAS can bioaccumulate in blood. “There has been no proved method thus far to accelerate the clearance of potentially toxic perfluorinated compounds in humans.”²</p> <p><i>“Currently, there is no treatment for PFAS exposure. Blood levels decrease over time when exposure to PFAS is reduced.” - Michigan Department of Health and Human Services</i>³</p> <p>Callie Lyons reported, “Dr. Emmett was able to provide us with a lot of new information about C8 through his study.” In Little Hocking, Ohio where the drinking water was contaminated with PFAS, “the median C8 in the blood was 106 times the level of C8 in the water.”⁴</p>
<p>How do you clean PFAS from fire apparatus? “...fire suppression systems require specialist decontamination to remove entrained, crystalline forms of PFAS...”⁵ Otherwise, complete replacement of the foam tank or the apparatus may be required.</p> <p>PFAS clean up and remediation is very difficult and costly in fire apparatus.⁶</p>	<p>What about PFAS in human tissue? “PFASs [are] confirmed in all human tissues.”⁷</p>

1 PFOA / PFOS Determining Historic and Current PFAS Levels in AFFF in the Republic of Ireland, SPCP-2018-02-1 (Lot #5), December 2020, <https://www.epa.ie/publications/monitoring--assessment/waste/PFAS-in-fire-fighting-foam-report-web-version.pdf>

2 Sinclair Broadcast Group, Options exist, but definitive treatment for PFAS exposure remains elusive, Mikenzie Frost, May 1, 2019, <https://upnorthlive.com/news/local/options-exist-but-definitive-treatment-for-pfas-exposure-remains-elusive> and Hindawi Publishing Corporation, ISRN Toxicology, Volume 2013, Article ID 657839 Research Article, Gastrointestinal Elimination of Perfluorinated Compounds Using Cholestyramine and *Chlorella pyrenoidosa*, S. J. Genies, 4 Aug 2013, <https://www.hindawi.com/journals/ism/2013/657849/> and Environment International, Volume 59, Accumulation of perfluoroalkyl substances in human tissues, Francisca Pérez, September 2013, p. 354-362, <https://www.sciencedirect.com/science/article/pii/S0160412013001220>

3 *ibid.*

4 [Stain-Resistant, Nonstick, Waterproof and Lethal: the Hidden Dangers of C8](#), Callie Lyons, March 21, 2020, Speech given at Washington State Community College in 2008

5 ResearchGate, Decontamination of PFAS from Fire Suppression Systems, Ian Ross PhD., PFAS Global Lead Tetra Tech, November 2021, https://www.researchgate.net/publication/356210058_DECONTAMINATION_OF_PFAS_FROM_FIRE_SUPPRESSION_SYSTEMS

6 Department of Defense, Per- and Polyfluoroalkyl Substances (PFAS) Task Force Progress Report, March 2020, https://media.defense.gov/2020/Mar/13/2002264440/-1/-1/1/PFAS_Task_Force_Progress_Report_March_2020.pdf

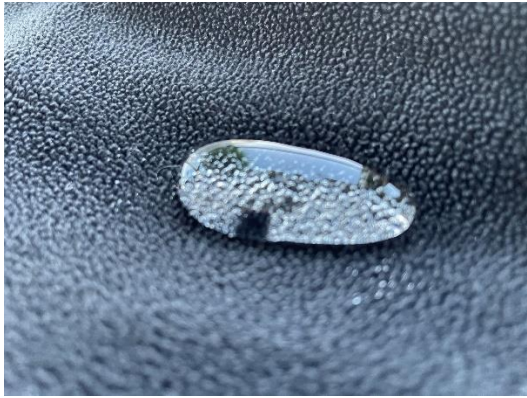
7 Environment International, Volume 59, Accumulation of perfluoroalkyl substances in human tissues, Francisca Pérez, September 2013, p. 354-362, <https://www.sciencedirect.com/science/article/pii/S0160412013001220>

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The same properties that make PFAS bioaccumulative and difficult to remediate is the strong fluorine bond demonstrated here showing water beading up off a water repellent treated textile.