

SPOTLIGHT ON POLYFLUORINATED AND PERFLUORINATED COMPOUNDS

Polyfluorinated and Perfluorinated Compounds — usually referred to as **PFAS** — consist of a group of more than 4,700 chemical substances used for their oil-, stick- or stain-repellent properties in the manufacturing of a large array of products and applications [1]. The first commercially important PFAS compound, Teflon, became famous through its widespread use in cookware. Similar compounds are now used in an endless array of products—in greaseproof food packaging like pizza boxes and microwave popcorn bags; in stain-resistant textiles including carpets; in water-repellent outdoor apparel; and in firefighting foams [2].

PFAS are extremely stable, and last indefinitely in the environment without breaking down. They are carried very long distances by water and wind, and today they can be found in the blood of almost everyone in the world. Some scientists have suggested the high concentrations of PFAS found among the Inuit in northern Canada and Greenland may be responsible for the high levels of breast cancer in those populations. Additionally, scientists have linked the most infamous substance of the family to date—PFOA—to numerous health effects, including kidney and testicular cancer, elevated cholesterol, decreased fertility, low birth weight, thyroid problems and decreased immune response to vaccines in children [3] [4].

PFOA and its analogue PFOS have recently been banned under the Stockholm Convention, leading to an explosion of very similar substances used as replacements. Manufacturers have responded with the “GenX” technology, a suite of substances which are polyfluorinated and structurally similar to the banned compounds. The most important of these, HPFO-DA, was recently listed as substance of very high concern at the European level [5] and has already been found to contaminate water in communities in Italy, the Netherlands, and the United States [6]. This once again demonstrates the critical importance of regulating these compounds as a group, rather than trying to address them one by one.

1. TEDX, “PFAS Resources,” TEDX - The Endocrine Disruption Exchange. <https://endocrinedisruption.org/interactive-tools/pfas-test> (accessed Jun. 23, 2020).

2. TEDX, “PFAS Resources,” TEDX - The Endocrine Disruption Exchange. <https://endocrinedisruption.org/interactive-tools/pfas-test> (accessed Jun. 23, 2020).

3. “Per-/polyfluorinated compounds | HBM4EU - science and policy for a healthy future.” <https://www.hbm4eu.eu/thesubstances/per-polyfluorinated-compounds/> (accessed Jun. 23, 2020).

4. European Environment Agency, “Emerging chemical risks in Europe — ‘PFAS.’” <https://www.eea.europa.eu/themes/human/chemicals/emerging-chemical-risks-in-europe> (accessed Jun. 29, 2020).

5. “MSC unanimously agrees that HFPO-DA is a substance of very high concern - All news - ECHA,” 2019. <https://echa.europa.eu/fr/-/msc-unanimously-agrees-that-hfpo-da-is-a-substance-of-very-high-concern> (accessed Jul. 01, 2020).

6. S.H. Brandsma et al., “PFOA substitute GenX detected in the environment near a fluoropolymer manufacturing plant in the Netherlands”, *Chemosphere*, volume 220, April 2019, pp.493-500, <https://doi.org/10.1016/j.chemosphere.2018.12.135>; *Chemistry & Engineering News*, “What’s GenX still doing in the water downstream of a Chemours plant?,” 2018, <https://cen.acs.org/articles/96/i7/whats-genx-still-doing-in-the-water-downstream-of-a-chemours-plant.html>; *The Intercept*, “Chemours is using the U.S. as an unregulated dump for Europe’s toxic GenX waster”, 2019, <https://theintercept.com/2019/02/01/chemours-genx-north-carolina-netherlands/>



POLYFLUORINATED AND PERFLUORINATED COMPOUNDS (PFAS)

POTENTIAL HEALTH IMPACTS: kidney and testicular cancer, elevated cholesterol, decreased fertility, low birth weight, thyroid problems and decreased immune response to vaccines in children

VISIT HEAL’S REPORT ‘TURNING THE PLASTIC TIDE: THE CHEMICALS IN PLASTIC THAT PUT OUR HEALTH AT RISK’ FOR MORE INFORMATION



HEAL gratefully acknowledges the financial support of the European Union (EU), the Global Greengrants Fund, and the Kristian Gerhard Jebsen Foundation for the production of this publication. The responsibility for the content lies with the authors and the views expressed in this publication do not necessarily reflect the views of the EU institutions and funders. The funders are not responsible for any use that may be made of the information contained in this publication.