## PFAS: Persistent Forever, Accountability Strengthened

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**The author explores in this blog Per- and poly-fluoroalkyl substances (PFAS), and delves into the growing concerns surrounding these chemicals. It examines their insufficient regulation and the implications it has on us humans, by asking questions such as what are the implications for public health and the environment? The blog also emphasizes the legal challenges posed by PFAS.**

**Introduction**

Concerns about potential harms caused by Teflon-coated pans have continually gained widespread attention [over the years](https://pfas-1.itrcweb.org/wp-content/uploads/2020/10/history_and_use_508_2020Aug_Final.pdf). These concerns began circulating in the early 2000s after research suggested that [chemicals involved in the production of Teflon, particularly perfluorooctanoic acid (PFOA), could have health and environmental risks](https://www.sciencedirect.com/science/article/pii/S0041008X00990379).

A landmark case that brought global attention to this issue is the [2015 class action lawsuit against DuPont](https://www.business-humanrights.org/en/latest-news/usa-dupont-teflon-plant-poisoned-nearby-farms-water-supplies-caused-birth-defects-firm-has-settled-related-lawsuits/), brought by Robert Bilott, regarding the PFOA pollution from DuPont’s business activities in West Virginia. Although the case revolved around the PFOA pollution in drinking water in the United States, studies have shown that per- and poly-fluoroalkyl substances (PFAS) contamination is global as this chemical has also been found in [European waters](http://ec.europa.eu/environment/chemicals/non-toxic/pdf/Sub-study%20d%20very%20persistent%20subst.%20NTE%20final.pdf) and even at [the two ends of the world](https://www.oecd.org/chemicalsafety/risk-management/Working%20Towards%20a%20Global%20Emission%20Inventory%20of%20PFASS.pdf).

This blog will delve into the growing concerns surrounding PFAS chemicals, focusing on their insufficient regulation and the implications for public health and the environment.

**What is PFAS?**

Per- and poly-fluoroalkyl substances (**PFAS**) are man-made chemicals that are [grease, water, and dirt repellent](https://www.rivm.nl/en/pfas#:~:text=The%20abbreviation%20PFAS%20stands%20for,are%20used%20in%20many%20products.) and are for this reason used in many products including [raincoats, pizza boxes, and cosmetics](https://www.rdworldonline.com/the-pizza-box-problem-and-why-it-might-kill-everything-from-teflon-to-drugs/). These substances contain [carbon-fluorine bonds](https://echa.europa.eu/hot-topics/perfluoroalkyl-chemicals-pfas), which are one of the strongest chemical bonds in organic chemistry, making them highly persistent in the environment and leading to them being labelled ‘forever chemicals’.

A prominent example of PFAS is [perfluorooctanoic acid **(PFOA)**](https://pure.eur.nl/en/publications/the-devil-we-know-and-the-devils-we-dont-a-historical-analysis-of), which was used to manufacture non-stick and heat-resistant coatings until 2012. This chemical substance was used in producing Teflon pans, which caused its users [health issues, such as respiratory problems](https://idp.springer.com/authorize/casa?redirect_uri=https://link.springer.com/article/10.1007/s11356-017-0095-y&casa_token=StT1KxFos9UAAAAA:xuUXahZkRlMLOougl-FRYGefnYXMzzTyM_0dVHZ9lltV4FaZ-636fBq7iyha4e8zHLYPXqFnVri_TdjHUQ). In response to the growing concerns regarding PFOA’s risks, a replacement technology known as [GenX](https://www.nvwa.nl/documenten/vragen-en-antwoorden/wat-zijn-genx-en-pfoa) was introduced to produce non-stick and heat-resistant coatings without using PFOA. However, studies suggest that GenX chemicals still pose [negative human health effects](https://www.epa.gov/system/files/documents/2023-03/GenX-Toxicity-Assessment-factsheet-March-2023-update.pdf), particularly when orally ingested.

**Rules on PFAS**

It is evident that PFAS can cause significant harm, yet there is no comprehensive legislation that clearly defines permissible thresholds for their use in industry. Nonetheless, regulatory frameworks have been introduced to globally promote the elimination of PFAS.

The first example of such legislation is the [Stockholm Convention on Persistent Organic Pollutants](https://chm.pops.int/Portals/0/Repository/convention_text/UNEP-POPS-COP-CONVTEXT-FULL.English.PDF) (Stockholm Convention). This Convention, which is a multilateral environmental agreement ratified by 186 countries, including the European Union (EU), plays a big role in regulating the production and use of PFAS. For instance, the Convention regulates the [restriction of PFAS](https://chm.pops.int/Implementation/IndustrialPOPs/PFAS/Overview/tabid/5221/Default.aspx) by listing PFAS and its substances, enabling State Parties to the Convention to restrict their use and production. The Stockholm Convention seeks to make the elimination of harmful chemicals a global responsibility, but the effectiveness of the Convention remains uncertain, as [major PFAS-producing countries](https://www.sciencedirect.com/science/article/pii/S2590332222004936), such as the [United States](https://www.state.gov/key-topics-office-of-environmental-quality-and-transboundary-issues/stockholm-convention-on-persistent-organic-pollutants/#:~:text=The%20United%20States%20signed%20the,represent%20and%20protect%20U.S.%20equities.), have yet to ratify the legislation.

In contrast, the EU has implemented the Stockholm Convention through the [Persistent Organic Pollutants (POPs) Regulation](https://eur-lex.europa.eu/eli/reg/2019/1021/oj), which aims to [protect the environment and human health from POPs](https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=PI_COM:Ares(2019)6890180) by restricting or prohibiting the production and distribution of substances under the Stockholm Convention. Furthermore, EU’s Regulation on [Registration, Evaluation, Authorisation, and Restriction of Chemicals](https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A02006R1907-20221217) (REACH Regulation) serves as a cornerstone for [protecting human health and the environment from hazardous chemicals](https://environment.ec.europa.eu/topics/chemicals/reach-regulation_en), such as PFAS. REACH establishes detailed procedures for the registration, evaluation, and restriction of chemical substances. It places significant responsibility on companies, which are required to register substances and collaborate with others registering the same chemicals. Once a substance is identified as hazardous, it may become subject to restrictions, outright bans, or mandatory prior authorisation.

On 7 February 2023, the European Chemicals Agency (ECHA) [proposed](https://www.rivm.nl/en/news/details-of-proposed-european-pfas-ban-released) a sweeping restriction on the production, use, sale, and import of approximately 10,000 PFAS substances. The goal of this proposed restriction, which is effectively a ban in this context, is to prevent PFAS contamination of the environment. The European Commission (Commission) is expected to formally [present the proposal to EU Member States in 2025](https://corporateeurope.org/en/2025/01/chemical-reaction-new-report-exposes-corporate-lobby-threat-eu-pfas-restriction). If adopted, this would represent one of the most extensive bans on chemical substances in European history. The latest development in this matter occurred in [November 2024](https://echa.europa.eu/nl/-/echa-and-five-european-countries-issue-progress-update-on-pfas-restriction), when a scientific evaluation of the proposal was conducted. This evaluation focused on restricting PFAS in key sectors, such as construction materials, textiles, and food contact products, including packaging.

Furthermore, the adoption of the [Drinking Water Directive](https://eur-lex.europa.eu/eli/dir/2020/2184/oj) in 2021 has introduced limits for all PFAS in drinking water, namely 0,50 µg/l and 0,10 µg/l. However, [Member States are still free to decide](https://eur-lex.europa.eu/eli/dir/2020/2184/oj) which of these two limits to use. Nevertheless, it is evident that within the Union, significant efforts are being made in order to limit the production and use of PFAS and related substances.

**What the Future Holds**

In 2023, the [Rotterdam District Court](https://uitspraken.rechtspraak.nl/details?id=ECLI:NL:RBROT:2023:8987) ruled that Chemours, a chemical company and DuPont spin-off, was liable for environmental damage in the Netherlands caused by PFAS emissions between 1984 and 1998. [Chemours](https://www.chemours.com/en/about-chemours/global-reach/dordrecht) is a key manufacturer of Teflon in Europe. In this case, the municipalities of Dordrecht, Sliedrecht, Molenlanden, and Papendrecht argued that they had suffered significant harm due to the release of PFOA and GenX chemicals from the Chemours factory in Dordrecht. They sought compensation for the resulting pollution.

The court acknowledged the harmful nature of these chemical substances and held that the emissions of PFOA during the period between [1984 and 1998 were unlawful](https://www.rechtspraak.nl/Organisatie-en-contact/Organisatie/Rechtbanken/Rechtbank-Rotterdam/Nieuws/Paginas/Chemours-handelde-onrechtmatig-met-uitstoot-van-PFOA.aspx) with respect to the municipalities. Yet, the emissions of GenX chemicals, which began in 2012, were not held to be unlawful by the court. According to the environmental law organisation [ClientEarth](https://www.clientearth.org/latest/press-office/press-releases/eu-court-again-rules-against-chemours-on-forever-chemicals/), this judgment represents a significant step by the courts in protecting the health and well-being of citizens across Europe.

In the same year, the Swedish Supreme Court delivered a ruling in the [*Ronneby* case](https://www.domstol.se/en/supreme-court/news-archive/the-supreme-court-delivers-judgment-in-pfas-case/). In contrast to the *Chemours* case, the *Ronneby* case focused on personal injury and public health, with the plaintiffs arguing that their [exposure to high levels of PFAS](https://chemsec.org/swedish-court-ruling-unlocks-potential-for-more-pfas-lawsuits/) in drinking water caused serious health issues and an increased risk of diseases. This case has led the court to address the [broader implications of PFAS contamination](https://curia.europa.eu/jcms/upload/docs/application/pdf/2024-02/t_486-23_pressmeddelande_eng.pdf) on human health and the responsibility for the harm caused to individuals. The legislations and case law demonstrate increasing accountability for industries and states regarding PFAS contamination and regulation. These advancements demonstrate promising opportunities that the future holds.

**Conclusion**

The growing number of legal cases related to PFAS demonstrates an increasing awareness of the environmental and health risks associated with these chemicals. Both the *Chemours* and *Ronneby* cases illustrate how PFAS litigation spans both environmental and personal injury claims, highlighting the multifaceted nature of the legal challenges posed by these chemicals. It is thus evident that the accountability of corporations is being strengthened as the responsibility and enforcement related to the forever persistent PFAS chemicals are being improved. Although these rulings and legislations highlight a fragmented legal landscape, as no uniform legal framework specifically governing the use of the PFAS remains, on a global level steps are being taken toward harmonisation.

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