

# FAQs about Greenpeace's Detox Outdoors campaign and Gore Fabrics

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## On Gore Fabrics' announcement that it is introducing PFC-free membranes, following its commitment "Goal and Roadmap for Eliminating PFCs of Environmental Concern"

In February 2017 Gore Fabrics, the maker of GORE-TEX® products announced that it would transition to more environmentally friendly weatherproofing technologies, free of [PFCs of Environmental Concern\\* \(PFC<sub>EC</sub>\)](#) over the lifecycle of its consumer products.

Gore Fabrics, a market leader in weatherproofing technologies, pledged to eliminate PFCs of Environmental Concern from its general outdoor weatherproofing laminates (corresponding to 85% of products made with these laminates) by the end of 2020 and from its specialized weatherproofing laminates (covering the remaining 15%) by the end of 2023. The company committed to develop new, more environmentally friendly technologies for weatherproof membranes and water repellent coatings for consumer products, researching both fluorine-free and fluorinated options. The company also committed to publicly document that no PFC<sub>EC</sub>s are released into the environment throughout the product life cycle.

The September 2021 announcement that "the consumer business of its Fabrics Division will be introducing the use of expanded Polyethylene (e-PE) as a new complementary material platform to serve as the basis for their membrane technologies" is a welcome development. Gore plans to "introduce the new membrane in a selection of GORE-TEX® brand consumer end-uses including general outdoor and lifestyle garments, lifestyle footwear and snow sports gloves", beginning in the Fall/Winter 2022 season.

Despite the fact that the end of 2020 timeline has not been achieved, Greenpeace welcomes the new membrane technology because it will be completely PFC-free, with no PFC<sub>EC</sub>s used in its manufacturing, and is "*accomplished using non-fluorinated materials*" so none are contained in the product. Gore states that this will be confirmed through product testing according to the OEKO-TEX® Standard 100 Annex 6, which represents the best practice currently on the market for the levels of detection and the scope of chemicals checked, for a wide range of hazardous chemicals, including those highlighted by Greenpeace's Detox My Fashion campaign.

## What is the difference between "general outdoor" and "specialized outdoor" gear?

In comparison to general outdoor gear, specialized outdoor gear has higher and more specialized performance requirements, and Gore Fabrics is developing special technologies to achieve these. You can find a detailed description of the requirements for general and specialized outdoor gear in Annex 2 of Gore Fabrics commitment here: <http://www.gore-tex.com/pfcgoal>

Gore Fabrics original commitment was to eliminate hazardous PFCs from its general outdoor weatherproofing laminates (corresponding to 85% of products produced with these laminates) by the end of 2020 and from its specialized weatherproofing laminates (corresponding to 15% of products produced with these laminates) by the end of 2023. The timeline for 85% by 2020 has not been met, however, the fact that "*Gore Fabrics Division's goal for being free of PFCs of*

*Environmental Concern over the lifecycle of its consumer products is being accomplished using non-fluorinated materials” is welcome.*

## General questions about PFCs

### 1. What are per- and polyfluorinated chemicals (PFCs) and why are they a problem?

PFCs (also known as PFAS) are environmentally hazardous substances, some of which are persistent and durable. Once released into the environment they will be broken down very slowly; many can remain in the environment for several hundred years and are dispersed over the entire globe. Some of these pollutants are found in secluded mountain lakes, some accumulate in wildlife, including in the livers of polar bears in the Arctic, and some are also found in human blood.

Further details about all the above can be found in [Footprints in the Snow](#), a study by Greenpeace Germany which found that these hazardous chemicals have left their mark even in the most remote and pristine places on earth. Some hazardous PFCs cause harm to reproduction, promote the growth of tumours and affect the hormone system. Previous Greenpeace International research found hazardous PFCs in the wastewater of Chinese textile factories and in fish for consumption in China.

In other studies hazardous PFCs were even detected in drinking water. In reports from 2012 and 2013, Greenpeace Germany found that hazardous PFCs are routinely present in some outdoor clothing and shoes and showed that they can evaporate from these products into the air. More recently, in 2018 [Greenpeace sampling in the Antarctic](#) found PFCs in water samples, and in [2020 a study](#) analysed the blood of children and adolescents in Germany and found that they are substantially exposed to these hazardous chemicals.

### 2. Why are PFCs used in outdoor gear?

PFCs are used in many products because of their special characteristics (oil-repellency, waterproofing, and stability). Their main area of use in textiles is in breathable membranes and in dirt-repellent and waterproof coatings and finishes. This is why PFCs are found in weather jackets and rain pants but also in tents, shoes, and swimwear, as well as work clothes, hotel linen, seat covers, and many other articles.

### 3. Membranes for breathable clothing

Membranes in outdoor clothing ensure their impermeability to water. Breathable membranes are often made of polytetrafluoroethylene (PTFE). PTFE is a fluorinated polymer made up of fluorine and carbon. These membranes are also known to consumers under registered trademark names: Gore-Tex® and Teflon®.

### 4. Exterior coatings and finishes for textiles

Besides the fluorinated polymers in membranes, PFCs are also used to make articles waterproof and dirt-repellent, which gives them a quality called the beading effect.

### 5. My favourite brand informed me that their products don't contain PFOA or PFOS or long chain PFCs. Does this mean these products are PFC-free?

Unfortunately not. Many outdoor brands have replaced long chain hazardous PFCs with short chain hazardous PFCs and advertise this as a solution to the problem, with [some even claiming](#) that the product is “PFC-free” when only PFOA and PFOS are avoided. But the more studies are done on short chain PFCs the more evidence we have that they can be a problem for the environment and potentially for our health too. More than 200 scientists from 38 countries signed the 'Madrid Statement', which calls for the elimination of all PFCs, including short chain, from the production of all consumer products, including textiles, in line with the precautionary principle.

### 6. What is the difference between long- and short-chain PFCs?

Long-chain and short chain PFCs are very closely related chemicals, the only difference being the size of the molecules, either with longer chains of fluorinated carbons, or shorter chains of fluorinated carbons

### 7. Is there any risk for my health if I wear a jacket containing hazardous PFCs?

PFCs are not known to go directly through the skin and there is up to now no evidence of direct health risks from wearing clothes containing PFCs. Hazardous PFCs can be released to the environment during the manufacturing of textiles, as well as during the use and disposal of products containing PFCs. These substances (or other hazardous PFCs that they degrade into) can reach our bodies when we breathe air containing PFCs or when we ingest food, drink water, or through exposure to house dust.

Some hazardous PFCs accumulate in the body. Examples have been detected in human blood and breast milk all over the world. Research has shown that some hazardous PFCs cause harm to reproduction, promote the growth of tumours or affect the hormone system.

## **8. Do we contaminate the environment wearing a jacket containing hazardous PFCs?**

The main contamination of the environment happens during the manufacturing process of the jacket, when hazardous PFCs are released to the environment. Therefore, any responsible outdoor brand should eliminate hazardous PFCs from the entire supply chain and use safer alternatives instead.

Some hazardous PFCs can also be released into the air from products containing them. Studies have already shown that the ambient air in outdoor equipment stores is significantly more contaminated with volatile PFCs like fluorotelomer alcohols (FTOHs) than the air in rooms where there are no weatherproof materials.

Fluorotelomer alcohols (FTOHs) degrade over time into other hazardous PFCs that are highly persistent (do not readily break down in the environment) which can be bioavailable, and some of which are known to build up in bodies following exposure to them.

## **9. Which outdoor gear can I still safely buy?**

What is the purpose of your outdoor clothing? Do you need it for an expedition to the Arctic or for an autumn walk? Clothing to protect people from wind and weather is generally impregnated on the outside and has a membrane lining on the inside. Some manufacturers use membranes that are suitable for most uses. It's best if you ask the retailer or manufacturer whether the membrane contains hazardous PFC compounds.

There are several alternative coatings and finishes on the market. None of the outdoor material is 'green chemistry' because all are made of membranes that will be degraded slowly, if at all. However, none of these materials should end up in landfills or incinerators but should be produced in a closed loop with proper recycling and reuse.

Alternatives to hazardous PFC finishes and coatings are eg. waxes, paraffins (such as ecorepel®), dendrimers (such as Bionic Finish Eco®) and silicones. Alternatives to membranes made using hazardous PFCs are Sympatex, Paltex or Toray, for example. Some outdoor companies, such as Fjällräven, Paramo, Pyua, R'ADYS, Rotauf or Vaude already have entire collections of functional weatherproof clothing that are PFC-free.

Gore's new PFC-free membranes and coatings will be on the market in the Fall/Winter season 2022. The manufacturers of all alternatives must prove that they are not detrimental to the environment or health. Moreover, clothing that is worn for a long time is more ecological. It may also make sense to buy things second hand.

## **10. Where can I find the latest information about company commitments to eliminate PFCs?**

You can find all of Greenpeace's reports from the Detox My Fashion campaign on the [campaign website](#); in particular the most relevant for the outdoor sector is [PFC Revolution in the Outdoor Sector](#) (which has an overview of commitments from all the leading outdoor brands plus the status of all the PFC alternatives), and [Destination Zero](#) which reports on the progress made eliminating PFCs from all Detox committed companies (and updates the information on three Detox Committed outdoor brands).

There's also a more recent update done by the American Sustainable Business Council - [The Business Case for Eliminating PFAS Chemicals from Consumer Products](#) which reports on more recent commitments on PFCs from outdoor brands. A recent list of many PFC (PFAS) free consumer products, including outdoor clothing, has been published by [Green Science Policy](#).

### **11. Are hazardous PFC-free alternatives more expensive?**

According to statements from the industry, these products are similarly priced. The cost of chemicals in a finished product makes up only two to four percent of the price.

### **12. Do alternatives perform as well?**

Tests have shown that fluorine-free alternatives perform similarly in terms of waterproof or water repellent properties. Outdoor clothing using these alternatives is also windproof, breathable and can withstand a downpour. Only in terms of oil and dirt repellency are fluorinated materials still superior to fluorine-free alternatives. Gore has also published information about the technical performance of its new e-PE membrane technology (see the link to Gore's announcement in Greenpeace's response ([campaign timeline](#) 29th September 2021) for links).

### **13. Why did Greenpeace run Remote Areas Expeditions?**

Several scientific studies have already shown that hazardous PFCs can be found around the globe, including in remote areas. A group of Greenpeace offices wanted to find out how widespread and out of control the problem of hazardous PFC contamination is, by investigating very remote areas, far away from civilization or polluting industries. We extended the scope of investigation by also analysing short chain potentially hazardous PFCs, for which less data previously existed. We chose sites a long way away from local sources of these chemicals, in particular mountain sites and – where possible – protected areas. We took snow and water samples and had them analysed in an independent, accredited German laboratory that specializes in this type of analysis.

### **14. How do hazardous PFCs end up in these Remote Areas?**

Hazardous PFCs are used in several industries, and are released to the environment during manufacturing processes of e.g. textiles and during the use and disposal of products containing hazardous PFCs (or precursors to hazardous PFCs). Once in the environment, hazardous PFCs or their precursors can spread globally. They travel long distances and are predominantly transported in the atmosphere. That's how they end up even in very remote areas, far away from polluting industries.

### **15. What is the precautionary principle?**

This means taking preventive action before waiting for conclusive scientific proof regarding cause and effect between the substance (or activity) and the damage. It is based on the assumption that some hazardous substances cannot be rendered harmless by the receiving environment (i.e. there are no 'environmentally acceptable'/'safe' use or discharge levels) and that prevention of potentially serious or irreversible damage is required, even in the absence of full scientific certainty. The process of applying the Precautionary Principle must involve an examination of the full range of alternatives, including, where necessary, substitution through the development of sustainable alternatives where they do not already exist.

### **16. What are regulators doing about PFCs (PFAS)?**

In the EU [five member states have written a proposal](#) to regulate all PFAS as a group - Denmark, Germany, Netherlands, Norway, Sweden. The stakeholder contribution ends in July 2022, almost one year from now for NGOs to contribute.

The proposal includes all substances and materials with a carbon-fluorine bond in the molecule, including polymers.

There are also developments in the USA, with the [state of Maine](#) enacting a ground breaking [law](#) that will ban the use of toxic PFAS compounds in all products by 2030, except in instances deemed "currently unavoidable".

Two PFAS, PFOA and PFOS, are listed on the global [Stockholm Convention on Persistent Organic Pollutants](#) for elimination or restriction.

## About Greenpeace's Detox Outdoors and Detox My Fashion campaigns

### Detox My Fashion campaign:

Greenpeace launched its "[Detox My Fashion](#)" campaign in July 2011 to address the use and discharge of hazardous chemicals by textiles industry suppliers, and challenged fashion and sportswear brands to urgently take responsibility for their contribution to the problem, past and present. Hazardous chemicals – including the 11 priority groups identified by Greenpeace (see [Destination Zero](#) Box 1, p.12) - are commonly used for the manufacture of clothes by many well-known brands. Greenpeace investigations found these chemicals in effluent from their supply chain factories, in their products and in the environment, despite decades of regulation and corporate responsibility programmes.

With the help of hundreds of thousands of supporters and activists, the "Detox My Fashion" campaign secured global commitments to Detox from 80<sup>1</sup> companies, to achieve zero discharges of hazardous chemicals in their supply chain manufacturing by 2020 and greater transparency about these hazardous chemical discharges. These companies correspond to a good 15 percent of the world's clothing industry and include fashion and sportswear brands, luxury brands, outdoor brands, multiple retailers and textile suppliers. The campaign has also had political impacts, triggering policy changes in Europe and Asia.

### Detox Outdoor campaign:

To put the focus on the use of PFCs by the outdoor industry, Greenpeace launched its [Detox Outdoors](#) campaign in 2015, calling on outdoor enthusiasts to "challenge their favourite brands to become a Detox Champion and stop the spread of PFCs across the planet", and join the leaders Vaude, Paramo and Rotauf by eliminating their use of PFCs. In 2017, Greenpeace welcomed the [pledge by Gore Fabrics](#) to transition to more environmentally friendly weatherproofing technologies, free of (PFCs), crediting the hundreds of thousands of outdoor enthusiasts that [joined the campaign](#) and co-created activities to put pressure on the industry.

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<sup>1</sup> Companies which have committed to Detox are: 19 global fashion and sportswear brands, 7 multiple retailers (5 based in Germany, 1 in Switzerland and the most recent addition is Tesco based in the UK), 3 outdoor brands, and a number of suppliers, mostly made up from a collaboration of textiles companies in Italy (Italian Detox Consortium). For a full list see Greenpeace (2018), Destination Zero <https://www.greenpeace.org/international/publication/17612/destination-zero/>