

Proposal to restrict all PFASs (Per- and Polyfluoroalkyl substances) under REACH

The European Man-made Fibres (MMF) Industry's Position

KEY MESSAGES

- ✓ *Certain PFAS products are indispensable in all sectors and value chains as key components in many modern, high-tech applications, such as e.g. semiconductor production, energy, climate or medical technology and biotechnology; for the safe and efficient operation of production plants, inter alia, as seals, gaskets, valves, coatings, membranes, lubricants, electrical insulators or safety clothing; for research and development of innovative and sustainable technologies.*
- ✓ *Urgent need for a derogation on PFAS used in industry settings and a 12-year derogation period or full control on use, disposal, and recycling. Without such exemptions MMF companies are prompted to contemplate relocating beyond the European Union and ceasing MMF production within its borders.*
- ✓ *The legal text must make perfectly clear that the entire manufacturing process of products exempted from the restriction does not fall under the restriction, either. In the legal text the raw materials, precursors and transported intermediates for exempted or time-limitedly derogated uses exemption must be explicitly excluded from the restriction. Additionally, irrespective of their chemical structure, fully degradable PFASs must not fall under the restriction.*

ABOUT OUR SECTOR

The **European man-made fibres (MMF)** industry has an annual output of 4.5 million tonnes and is valued at over €11 billion, making the EU the third largest producing region in the world. It is a supplier of essential **raw materials to the textile and clothing industry and many other downstream sectors** (e.g., automotive, aerospace, hygiene products, furniture, construction, etc.). Closely linked to the MMF industry are products which have undergone further processing such as certain types of fabric, and some finished products for industrial uses. Our member companies are innovators in



the chemical, engineering and textile sectors that are committed to contributing to a sustainable, low carbon, resource efficient economy.

CONCERNS ABOUT PFAS REACH RESTRICTION PROPOSAL

CIRFS **supports the objective** of the proposal to restrict all PFASs (Per- and Polyfluoroalkyl substances) to safeguard human health and the environment from risks posed by PFASs. Our member companies are **actively developing PFAS-free alternatives** for MMF applications and exploring avenues to phase out PFASs in their operations wherever feasible.

As we stand in support of the objective of the proposal to restrict all PFASs under REACH, it is crucial to highlight the **potential unintended negative consequences** that might emerge from the current draft of the restriction proposal. PFASs possess **distinctive properties** that render them incredibly useful yet challenging to replace with more sustainable alternatives. There is ongoing **uncertainty** about whether alternatives with similar technical properties will be available in the next 5, 10, or even 20 years. This includes the possibility of needing a completely different technology. Without ample time to develop and prepare for alternatives, the restriction proposal **threatens the continuity of production operations** our member companies and the rest of the European Chemical Industry. Additionally, the current draft of the restriction proposal **introduces additional challenges to recycling post-use materials**, which counteract the proposal's objective of promoting sustainability. A comprehensive exploration of the impact of the proposal to restrict all PFASs on our processes will follow in the subsequent sections.

1. Operational impact: crucial role in equipment

Owing to the extensive integration of PFASs into the European Chemical Industry's production infrastructure and the lack of feasible substitutes, the proposed restriction severely affects the Chemical Industry's capacity to maintain secure, stable, and enduring operations. **Among PFASs, fluoropolymers stand as the most significant due to their unparalleled chemical resistance, high-temperature stability, and critical role in maintaining the integrity of industrial processes.** In our production facilities PFASs, and in particular fluoropolymers, play a significant role in ensuring safe and stable operations in an environment characterized by the use of strong organic solvents, concentrated acids, high temperatures, high pressures, and corrosive intermediates. **Examples** of its critical application in the MMF production **include tanks, piping, seals, liners, gaskets, pumps, and valves.** Beyond their fundamental role in the production of MMF, these components are equally vital in upholding the **integrity of recycling and**

closed-loop production processes. Restricting the use of fluoropolymers may inadvertently hinder our ability to achieve the ecological advantages that closing the loop offers.

The substantial percentage of equipment parts in our factory featuring PFASs coupled with the diverse array of equipment parts and process conditions makes **the transition to alternative materials a complex and time-consuming project.** Extensive R&D, selection, testing, prototyping, and controlled industrialization is required to guarantee the integrity of our installations and process safety in this transition. Substitution with alternative materials, such as noble metals, graphite, glass, or ceramics, presents challenges due to their limited flexibility, conductivity, and poor abrasion and dynamic characteristics. Even if alternative materials suffice, the

different nature of alternative materials will require major plant redesigns and reconstructions. **The huge complexity, high safety risks, downtime, and excessive costs such a project will have a major impact on the continuity of safe operations and future (re)location decisions.** This impact parallels the situation faced by our raw material suppliers within the petrochemical industry, for which a derogation for the use of PFAS was included in the restriction proposal.

We therefore ask the regulatory authorities to consider A derogation on PFAS used in industry settings, potentially with additional reporting and waste management plan obligations to ensure emissions from the use of PFAS are minimised.

2. Obstacle to recycling of post-use materials

The current formulation of the **proposal to restrict all PFASs will introduce an obstacle to the recycling of post-use textile waste materials.** Our member companies are proactive in collecting post-use textile waste materials. Recyclable textile products, such as ballistic vests, may contain PFAS substances as a result of post treatment in later stages of the associated value chain or from the use phase. The extended lifespan of applications featuring both MMF and PFASs implies that items will continue to **enter recycling streams well beyond the initiation of the restriction proposal.** Similarly, end-of-life materials originating from regions beyond the European Union, in the absence of comprehensive global PFAS legislation, will perpetuate the inflow of recyclable textile products containing PFAS into recycling streams. Enforcing a complete prohibition within the European Union would significantly curtail our ability to access recycling sources and result in recyclable post-use MMF ending up as discarded waste. To safeguard the EU's progress towards a more sustainable, circular economy, it is crucial to carefully evaluate the implications of the proposal to restrict

all PFASs on recycling processes and seek pragmatic solutions that preserve the viability of recycling practices. As part of such a pragmatic solution we would welcome separate and realistic limiting values.

To minimize the adverse effects of the restriction proposal on the MMF supply chain, the need for at least a 12-year derogation period becomes evident. While an exemption has already been granted to a portion of our raw-material suppliers from the petrochemical and mining industry, this exemption does not extend to the remainder of the MMF supply chain despite the similarity of our industry's utilization of PFAS-containing products. Yet, finding substitutes or developing alternative technologies that can replicate the unique features of specifically fluoropolymers as well as planning and executing a comprehensive transition strategy requires considerable time and resources. The time offered by a 12-year derogation period allows for a more cautious and thorough approach and subsequently enhances the potential of successfully identifying and implementing sustainable solutions. While we aim to adhere to the 12-year timeframe, it is crucial to acknowledge that in such a complex transition challenge the exact duration required cannot be conclusively determined in advance. Although alternatives may be attainable for specific applications, such as piping and gaskets, the feasibility of substitutes for other applications can vary. In addressing the feasibility question, **a more suitable option would be to consider full control on use, disposal, and recycling, of PFASs or specific subclasses of PFAS such as fluoropolymers.** Recent scientific findings caution against uniform grouping of all PFAS for risk assessment solely based on their persistence, emphasizing the need for case-specific subgroups (J.K. Anderson et al., Regulatory Toxicology and Pharmacology, 2022)¹. Fluoropolymers distinguish themselves within the broader category of PFASs due to their unique chemical properties and safety attributes. Fluoropolymers fulfil the OECD criteria as polymer of low concern (PLC) as they pose no hazard to public health or the environment due to their high molecular weight, water insolubility, limited bioavailability, and non-toxic attributes. While Fluoropolymers are prominently featured in our production equipment, there is no emission during the use-phase. PFAS-containing equipment can be disposed of entirely isolated from other waste streams. The chemical industry has extensive experience in controlling such streams. This experience can be expanded to the controlled use, disposal, and recycling of certain PFASs, such as fluoropolymers. Controlled use of PFASs under strict conditions of collecting and disposal after use would perfectly align

¹ 1 Anderson, J. K., Brecher, R. W., Cousins, I. T., DeWitt, J., Fiedler, H., Kannan, K., Kirman, C. R., Lipscomb, J., Priestly, B., Schoeny, R., Seed, J., Verner, M., & Hays, S. M. (2022). Grouping of PFAS for human health risk assessment: Findings from an independent panel of experts. Regulatory toxicology and pharmacology : RTP, 134, 105226. <https://doi.org/10.1016/j.yrtph.2022.105226>

with the objective of the PFAS restriction proposal to avoid any emission to the environment and people.

Impact on European Targets/Objectives/community

In the absence of a 12-year derogation period, full control over the use, disposal, and recycling of PFASs, or an exemption for fluoropolymers to the MMF supply chain, the proposal to restrict all PFASs would compromise the ability of our MMF companies to ensure continued safe operation of our production facilities in the European Union. **Consequently, MMF companies are prompted to contemplate relocating beyond the European Union and ceasing MMF production within its borders.** Such a move could in turn have grave consequences for the strategic autonomy of the European Union and the **ability of the European Union to realize its green, industrial, and digital transformational objectives**, and potentially erode its leading position in technology. Further elaboration on these implications will follow below.

1. Strategic Autonomy

A potential relocation of MMF production away from the EU would represent a significant setback for the European Union's pursuit of strategic autonomy as it would increase the dependency on a limited number of countries for indispensable raw materials. The strategic sectors in which MMF an essential component are military, law enforcement, telecom, aerospace, automotive, composite, (renewable)energy, healthcare and protective clothing. MMF are essential for safety. The discontinuation MMF production within the European Union would render these strategic sectors in the EU entirely reliant on the import of MMF from the third countries such as China. Such heavy dependence not only exposes the EU to potential disruptions in the supply chain, but also leaves it vulnerable to unilateral decisions and political-economic pressures by these countries to restrict MMF availability.

It is important that the manufacture of products that are not covered by the restriction or temporarily exempted must remain possible in the EU. Here, not only products falling under the PFAS definition but also end products that no not contain any per- or polyfluorinated groups are relevant. In this connection, the necessary raw materials, all precursors and transported intermediates as well as agents and products required in production must be explicitly exempted too. Otherwise, the substance exempted from the scope would be allowed in its end use – while its manufacture would be prohibited inside the EU due to the ban of the precursors. Consequently, such substances or articles for exempted uses could exclusively be imported from non-EU countries. This would stand in contradiction to efforts to enhance the EU's resilience and to reduce the dependence on imports.

The legal text must make perfectly clear that the entire manufacturing process of products exempted from the restriction does not fall under the restriction, either. In the legal text the raw materials, precursors and transported intermediates for exempted or time-limitedly derogated uses exemption must be explicitly excluded from the restriction. Additionally, irrespective of their chemical structure, fully degradable PFASs must not fall under the restriction.

2. Vital to the EU's green, industrial, and digital transformational objectives

A safe and sustainable supply of MMF is also vital in realizing the European Union's green, industrial, and digital transformational objectives. MMF are an enabler in renewable energy production, drive energy efficiency through lightweight applications, adhere to circular economy principles. As such, the role of MMF in advancing the EU's sustainable ambitions is indispensable and any shift in MMF production will have a potential detrimental effect. Without MMF, the EU's ambition to scale up renewable energy production would face significant obstacles. MMF such are essential for the EU's capacity to harness its offshore wind potential and to integrate hydrogen as a clean energy carrier. Submarine high-voltage power cables, which interconnect offshore wind farms and integrate renewable energy sources, depend on reinforcement to provide a robust solution across ocean depths that are not feasible with alternative materials. Similarly, mooring tendons made with MMF such as aramid ensure the stability and longevity of floating wind farms enabling them to harness wind energy in deep waters where fixed foundations are impractical.

As the EU seeks to expand hydrogen applications and integrate hydrogen as a clean energy carrier, MMF based reinforced thermoplastic pipes become integral to the success of the hydrogen economy. As the EU intensifies its focus on expanding renewable energy capacities, the demand for MMF in the production of these crucial components will continue to grow. Another compelling facet of MMF's impact on the EU's sustainable journey lies in the exceptional lightweight and durability properties. MMF lightweight nature proves invaluable in achieving increased energy efficiency across industries. For instance, MMF have become an invaluable solution in producing lighter tires for transportation, resulting in reduced fuel consumption and emissions. MMF-reinforced composites in automotive and aerospace industries further exemplify the potential for enhancing energy efficiency. MMF remarkable durability and resistance to degradation make it an ideal choice for crafting long lasting products. MMF-reinforced conveyor belts and cables in industrial settings can endure harsh conditions, reducing the frequency of replacements and thereby reducing waste

generation and preserving valuable resources. Curtailing the use of MMF could hinder progress in achieving energy efficiency goals, reducing waste, and minimizing the ecological footprint. MMF are also essential components for the EU's digital transition to high-speed broadband internet connectivity and the deployment of 5G networks across the European Union. As a strength member MMF such as Aramids provides crucial mechanical support and protection to delicate optical fibers, enabling high-speed data transmission over long distances, critical for the EU's advancement in areas like 5G technology, cloud computing, and the Internet of Things (IoT). Supply chain disruptions can have a negative impact on the European Union's ability to achieve its digitalization ambitions.

3. Safeguarding Research

One should also not disregard the potential consequences of a discontinuation of MMF production in the European Union on the progress of research. Preserving MMF production knowledge and fostering its evolution is integral not only for sustainable practices but also for reinforcing the EU's technological leadership. With a strong ambition to create a better world for future generations, our member companies actively engage in European Union and national projects centered on fostering innovation and advancing progress. Our companies have been recycling end-of-life textiles for decades and are developing new MMF on an industrial scale using a newly developed yarn to yarn recycling processes. These developments are the result of years of research and require vast resources. A potential need to relocate MMF production and research outside of the EU could stifle future innovation and hinder the development of alternative materials and processes. This, in turn, might impede the European Union's capacity to drive progress and remain at the forefront of global advancements. Conversely, granting an exemption of 12 years for PFASs for the chemical industry could potentially be a catalyst for European industry to seize a leadership position in the development of alternative materials. Affording the necessary time and flexibility for research would not only sustain MMF production in the European Union but also fortify Europe's role as a global technological frontrunner.

CIRFS is the association for Europe's € 12 billion man-made fibres industry, representing the industry to the European authorities and providing the industry with a wide range of services. Its members cover about 75% of European man-made fibres output. It provides for around 20,000 jobs in ca. 250 plants. The **European man-made fibres industry**, with a total production in 2022 of ca. 4.4 million tonnes, is the world's second largest in terms of output and one of the global leaders in terms of innovation and quality.