EUROPEAN ASSOCIATION OF PUMP MANUFACTURERS
ASSOCIATION EUROPÉENNE DES CONSTRUCTEURS DE POMPES
EUROPÄISCHE VEREINIGUNG DER PUMPENHERSTELLER

Europump
The Voice of the European Pump Industry

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Comments on the proposed PFAS restriction regulation.

Table of contents

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1. Executive summary

Europump is the European Association of Pump Manufacturers. It represents 15 National Associations in 12 EU Member States, the United Kingdom, Turkey & Switzerland. Europump members represent more than 450 companies with a collective production worth more than €10 billion and employing 100,000 people in Europe.
Pumps are essential for many applications in daily life, such as:

- Transport of drinking water and wastewater,
- Production and packaging of food and beverage,
- Production processes within chemical and pharmaceutical industry,
- Heating, ventilation, and air conditioning (HVAC) applications
- And many more applications.

This is Europump's second contribution to the consultation on the restriction of PFAS by the European Chemicals Agency. The first contribution to the consultation was submitted on 22 May 2023, cf. document part 11, No. 4245 with attachment ("Contribution 4245").

The focus of Contribution 4245 was to discuss and present information on the presence of PFAS in pumps.
Since Contribution 4245, Europump has collected and evaluated socio-economic data within the pump sector in order to provide additional data for the PFAS restriction assessment process.

From the information gathering process, Europump's opinion has been strengthened, and it is clear that:

- A differentiation of PFAS is necessary,
- Persistence cannot be the only behaviour of a substance that leads to restriction,
- The ban should focus on PFAS substances that are the most hazardous and contaminating,
- The restriction process must follow the rules of REACH regulation, which is not the case today,
- The use of fluoropolymers should be possible, as their use is generally low risk, low contaminating, and are key in critical infrastructure, and
- The ban of <u>all</u> PFAS, including fluoropolymers, will have massive socioeconomic consequences and be devastating for the green transition.

2. Policy and Regulatory Aspects

Europump members are fully committed to supporting the EU's chemical strategy towards a toxic free environment and are fully committed to reducing/eliminating emissions of hazardous substances into the environment. Furthermore, Europump member companies are committed to continuously improving the environmental footprint of their products across all stages of the product lifecycle from manufacture, through use phase, to end of life.

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However, we believe a more differentiated approach is necessary to introduce a PFAS regulation that is proportional, implementable, and takes into consideration positive socio-economic impacts of using high performance, durable polymers. Any PFAS restriction should be risk and substance based, in line with Article 68(1) and 69 of REACH. Accordingly, PFAS substances should be categorised based on their risk profile and initial focus should be on those with the highest risk profile. With this approach it can be ensured that a ban is applied effectively without jeopardizing other priorities such as the green transition, reducing the introduction of alternative materials that are harmful in other ways (e.g. with a high CO_2 footprint from manufacture), and the reduction of the dependency of certain rare materials only available in a few areas of the world.

Furthermore, complete elimination of PFAS from European products would result in the supply of less durable products which is not in line with the EU Green Deal, circularity ambitions, or eco-design principles.

Fluoropolymers

Fluoropolymers are essential for the performance, safety, and durability of pumps in many applications. A non-exhaustive list of fluoropolymer uses and functionality in pumps has been detailed in Contribution 4245, this includes gaskets, seals, and bearings. The use in pump applications allows the fluoropolymers to stay inert and the fluoropolymers are not exposed to or contaminate the environment around the pump.[1]

Comparing the important role of the fluoropolymers in pumps, as described in Contribution 4245, with the low risk use in pump applications, it is clear the use of **fluoropolymers** in pump applications and other equipment should be **exempted from the scope of the restriction proposal**, or a permanent derogation should be granted for industrial and professional equipment and machinery[2].

Europump members are committed to reducing harmful emissions from PFAS and are committed to producing more sustainable products, therefore we believe the derogation for fluoropolymers could be coupled with other regulatory and policy instruments to ensure that there is focus on minimising emissions during the entire lifetime of products. For example:

- Product and component producers should be incentivised to source fluoropolymers in a responsible way from raw material producers who minimise emissions during the manufacture phase,

[1] Reference is also made to OECD criteria on the risk profile of fluoropolymers, cf. Henry, B. J; Carlin, J. P; Hammerschmidt, J. A; Buck, R. C; Buxton, L W.; Fiedler, H.; Seed, J.; Hernandez, O. A Critical Review of the Application of Polymer of Low Concern and Regulatory Criteria to Fluoropolymers. Integr. Environ. Assess. Manage. 2018, 14 (3), 316-334.), S H. Korzeniowski, R C. Buck, R M. Newkold, A El kassmi, E Laganis, Y Matsuoka, B Dinelli, S Beauchet, F Adamsky, K Weilandt, V Kumar S, D Kapoor, P Gunasekar, M Malvasi, G Brinati, S Musio A critical review of the application of polymer of low concern regulatory criteria to fluoropolymers II: Fluoroplastics and fluoroelastomers, integrated Environmental Assessment and Management, 2023, (19) 326-354

[2] Although exact data is not available, pump producers are aware of the need for fluoropolymers in equipment used for the production of pump and pump components.

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- Numerous already existing regulations cover potential leaching from fluoropolymers during the lifetime of the product or article (e.g. EC No. 1935/2004 on material and articles intended to come into contact with food or EU No. 2020/2184 on quality of water intended for human consumption).
  To avoid double regulation, controlling emissions and leaching during the use phase of the product should remain under already existing regulations.

- The end-of-life for industrial and professional equipment (including pumps) is regulated under WEEE (the Waste Electrical and Electronic Equipment Directive (EU No. 19/2012)) and therefore emissions at the end of life are controllable.

- Marking requirements could be introduced to enable sorting of PFAS containing products and research and innovation in the area of fluoropolymer recycling[1], degradation[2] and end of life handling technologies should be strengthened.

Europump has also noted that similar derogation requests have been made for similar applications, by sector committees and organisations such as Orgalim, FPP4EU, or Wirtschaftskammer Osterreich.

We suggest the wording below be inserted into paragraph 6 of the proposed restriction in case the fluoropolymers are not excluded from the broad PFAS restriction:

By way of derogation, paragraphs 1 and 2 shall not apply to fluoropolymers used in pumps- and other equipment used in: Industrial facilities, commercial and domestic building installations, and critical infrastructure.

The derogation may be coupled with a clause to be included directly into the text of the restriction stating that competent authorities (Member States or the Commission) may review any new hazard data and the state of alternatives and assess whether a separate restriction proposal should be prepared for derogated PFAS categories.

Other PFAS containing materials

Europump members are aware that pumps contain PFAS beyond the fluoropolymers intentionally designed into the pump. These could be components in the motor, control box, other electronics, or additives in non-fluoropolymeric components upstream in the supply chain.

[1] https://www.invertec-ev.de/projekte/umwelt-ressourcen-schonung/ptfe-recycling/

[2] Lawrence P. Wackett, Nothing lasts forever: understanding microbialbiodegradation of polyfluorinated compounds andperfluorinated alkyl substances, Microbial Biotechnology Volume 15, Issue 3 p 719-1018, Mar 2022, Nothing lasts forever: understanding microbial biodegradation of polyfluorinated compounds and perfluorinated alkyl substances (wiley.com)

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All members in Europump are assessing the impact of a potential ban. Although it is possible to evaluate PFAS content in our own produced parts, it can be nearly impossible to determine PFAS content in purchased components due to proprietary data protections. Therefore, Europump suggests that any PFAS restriction be preceded by a mandatory **information obligation** on declaring PFAS content for suppliers.

Without an information obligation, manufacturers of assembled products will remain unaware of the full PFAS footprint in final products – whether in purchased components or where PFAS may have been used as an additive in upstream manufacturing of components. An information obligation in the supply chain will put the obligation where the knowledge on content resides and will help manufactures to proactively reduce non-intentionally added PFAS in their products.

It is the experience of all Europump's members that suppliers do not provide an acceptable level of detail when asked to declare their product composition under the guise of proprietary information. Many times, larger suppliers refuse to provide this information to smaller customers. A mandatory information obligation will resolve these issues of appropriate data sharing.

Only efficient enforcement and market surveillance will ensure a level playing field, as many industries have complex global supply chains with numerous suppliers, making it difficult to trace the origin and collect data on the composition of every component in an assembled product.

(Reference is also made to the information obligation on Substances of Very High Concern, which should be implemented vis-à-vis for PFAS substances, but would still only affect substances remaining in the product above certain limit.)

Appropriate derogation process

The current PFAS restriction proposal applies a restriction on a broad range of previously non-declarable substances. The PFAS restriction proposal is applied without individual assessment of the risk and consequence of each PFAS group, their actual uses, and their criticality in products, cf. Contribution 4245.

To ensure a risk-based approach and a phase-in of a PFAS ban that target high-risk and high-contaminating uses and substances first, Europump requests that a **clearly defined and efficient process for the application, review, and extension of derogations**, is implemented and applied.

The derogations currently envisaged are insufficient and do not consider the relevance of PFAS for a wide range of uses. This creates confusion across many industry sectors and supply chains. It is Europump's position that this is not compliant to the requirements under REACH Article 68 (1) because (i) the PFAS group is too broad and it includes fluoropolymers for which no unacceptable risk has been identified (even relying on the precautionary principle), and (ii) the restriction proposal is disproportionate as it includes uses with strong socio-economic impacts and no alternatives. Respective argumentation and literature references can be obtained from the consultation submission from Dr. Lucas Bergkamp (No 6003).

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Transition period

A more nuanced approach should also be taken into consideration when assessing the overall phase-in of any ban.

Assuming that fluoropolymers will be exempted in general, cf. abovementioned, it is the opinion of Europump that **an adequate transition period for other types of PFAS would be four to eight years after entry into force** for pumps instead of the proposed 18 months.

In addition to the time required to gather information on PFAS content (cf. above mentioned on a supplier information obligation) additional time will be required to: find durable, safe, and sustainable alternatives (assuming that this is even possible); time to develop new manufacturing tools (once PFAS free alternatives are found); time to integrate and test new material functionality in products; and time deploy new PFAS free components in production. Time is also required to update product approval/certification schemes across Europe and develop new testing standards. It goes without saying that these are required to ensure that the European drinking water supply is safe.

In other words, even if PFAS free alternatives were available today it would still require years working together with e.g. drinking water agencies (such as Attestation de Conformité Sanitaire (ACS) in France or Umweltbundesamt in Germany) to allow market access for the new materials and to secure all necessary conformity tests, assessment, and certifications for pump product programs that utilize these new materials.

Given the bottlenecks and the waiting times[1] currently observed with test laboratories and agencies today, it is unlikely those institutes would be ready in due time for the massive approval and certification task that would follow after relevant standards have been developed and agreed upon.

3. Socio-economic Impact

Specific Examples

Effect on Pumps

The below impact assessment is limited to the impact of a fluoropolymer ban downstream; however, the concerns raised by the electronics, semiconductor, and metal manufacturing industries[2], are shared by Europump.

[1] As an example, assessment of a single material or component according to the evaluation criteria issued by Umweltbundesamt for plastic and organic materials in contact with drinking water, have in many cases taken more than 15 months.
[2] Some examples: Orgalim, FIM (Féderation des Industries Mécaniques, France), Die Metalltechnische Industrie, Wirtschaftskammer Osterreich or SEMI Europe.

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As detailed in several previous contributions, including Contribution 4245, fluoropolymers are known for their exceptional chemical resistance, high temperature tolerance, and friction resistance. It is these combined properties that limits possible (and sustainable) alternatives.

As already detailed in contribution 4245, the use of less durable components in pumps would result in more frequent component change and maintenance. Therefore, limiting fluoropolymers in pump applications would cause challenges in numerous industries in the form of decreased efficiency, increased downtime with production delays, and increase operational costs.

The absence of fluoropolymers would impact product quality and would also increase the risk of health and safety issues, primarily due to leakages.

Furthermore, fluoropolymers are used due to their inert, non-reactive nature, which reduces the risk of chemical contamination for the pumped liquids. Without fluoropolymers in pumps and other machining equipment there would be greater environmental risks and health hazards from substances leaching into the pumped media and the environment. Additionally, due to more frequent material changes during maintenance, more contaminated waste is collected, which must be disposed under specific conditions.

Impact on society

A fluoropolymer ban in pump applications (and in general) has far reaching consequences. It will disrupt essential industries and remove the critical benefits that low-risk fluoropolymers bring to society.

Pumps are used across many industries (energy and utilities, transport, food and beverage production, pharma and healthcare, general production of consumer and industrial goods) to handle fluids and various other media, and pumps also form part of our critical infrastructure to distribute drinking water, wastewater, and in heating applications.

Lack of fluoropolymer containing pumps will have significant consequences[1]. For example:

- Within the **pharmaceutical industry**-it will not be possible to meet the quality and safety standards that are required, with the consequence that quality and safety standards will need to be lowered and more frequent required maintenances will reduce the product yield and will increase consumer prices. Shortage of certain pharmaceuticals can be expected. Similarly, in **food and beverage** production, it would not be possible to meet EC No. 1935/2004 on material and articles intended to come into contact with food, with the consequence that quality and safety standards will need to be lowered. Prices of products, which will also have reduced quality, with reduced quality will increase due to a decreased productivity.
- The absence of fluoropolymers in pumps used to dose chemicals, for example in **water and wastewater treatment** plants and systems will severely impact the quality of drinking water

[1] Please see detailed case studies at FPP4EU site, and PVDF shortage case study provided by Europump.

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and wastewater, since the PVDF, PTFE and Fluorine Rubber (FKM) used in pumps (for dosing chemical into water) are unique in their chemical resistance, durability, and precision, with the consequence that water quality and safety standards will need to be lowered. This would also be a massive setback for **renewable energy and the green transition**, where the fluoropolymer components in pumps play a critical role because of their resistance to heat, cold, and chemicals, and are also used because of their outstanding tribological behaviour. As an example, there are no alternatives to fluoropolymer components for moving media in power-to-X processes*. A ban will put an immediate stop to any further development of this critical area*.

As a concrete example[1], during the Covid pandemic when material shortages were frequent, PVDF shortage on the market created dilemmas for some of our member companies. Decisions had to be made about which orders to prioritise among orders which were all serving critical infrastructure such as: hospitals, public drinking water supply, food production, power generation.

Lack of availability of high performance, safe, and low-maintenance pumps for the production of food, beverages, pharmaceuticals, and other production processes may shift the manufacturing of these goods to other geographic locations, which will negatively impact jobs within the EU and increase consumer prices. Furthermore, the required additional shipping of goods will lead to a negative impact by increasing the carbon footprint of those products.

Difficulties in estimating the Socio-economic Impact of a PFAS ban

The impacts above are limited to fluoropolymers in downstream applications. The collection of significant data on the socio-economic impact of a PFAS ban is extremely difficult for several reasons:

- As previously discussed, an accurate estimate of the PFAS composition of purchased parts, or whether or not their production requires PFAS, is virtually impossible to determine. Therefore, the loss of jobs based on the non-availability of these parts if a PFAS ban is put in place cannot be accurately calculated.
- Pumps are used both upstream and downstream the supply chain. If an upstream use in the production of certain pump parts is not possible due to a PFAS ban, then a certain amount of pump sales/production will be lost, with an associated loss of jobs. In some cases, this will be due to a lack of components used in pump production, and in other cases it will be due to a reduction of sales to the upstream producer. If a downstream use, such as a specific chemical production is not possible due to a PFAS ban, likewise pump sales and jobs will be lost. Both upstream and downstream producers will of course also lose jobs.
- The very large number of interactions and variables within the supply chain illustrated in the above two points make an accurate calculation of job losses virtually impossible. One can only state that the percentage of job losses for a given pump company will be proportional to the percentage of lost sales and production. But given the interaction up and down the supply chain, it is clear that the overall job losses within any given supply chain will be significantly higher.

[1] PVDF shortage case study provided by Europump

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- The COVID pandemic has shown that interrupted supply chains lead to significant impact on consumers and society, as products will be very expensive or not available. The effect of a PFAS ban on the many (not just pump company) supply chains that exist will lead not only to job losses throughout each supply chain, but to the shortages and high cost of many products. The negative impact of these factors as they affect the overall economy is incalculable, but will certainly be extremely high.

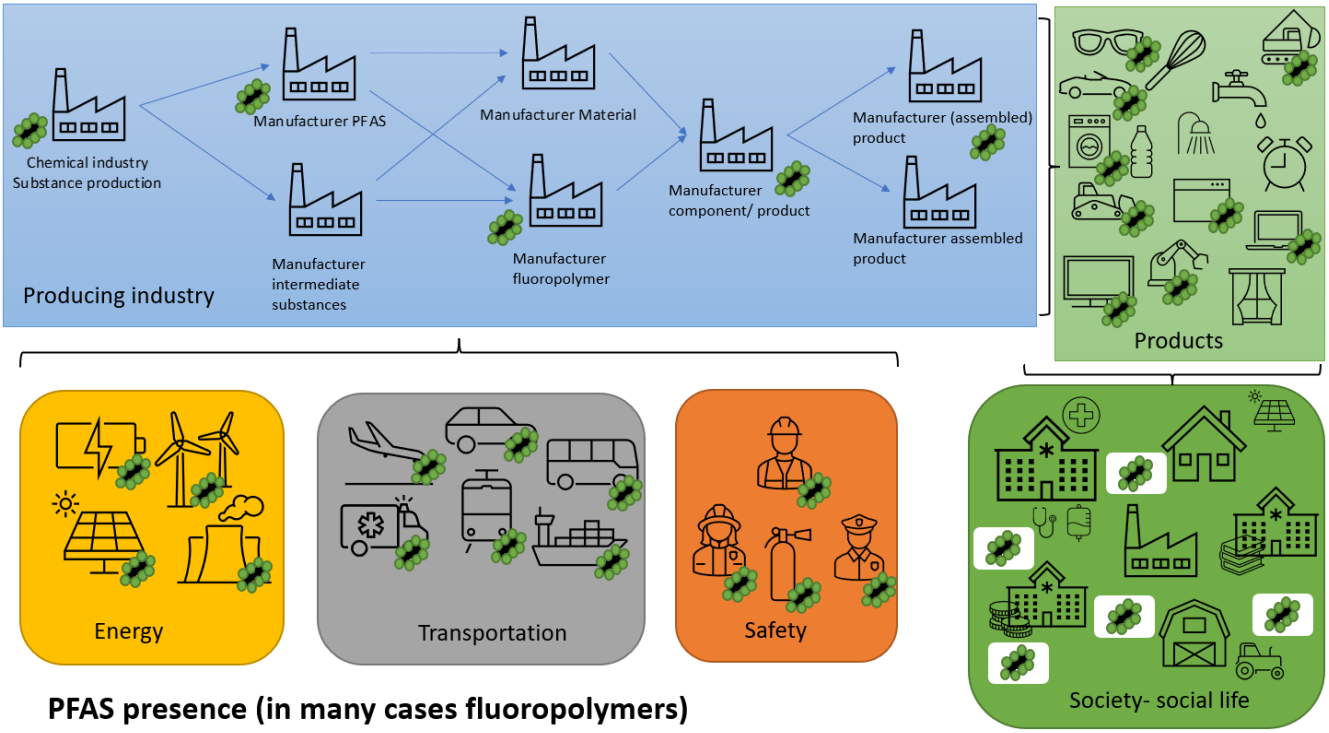

Figure 1: Examples of PFAS presence (in many cases fluoropolymers)

4. Summary

In summary, the restriction of using fluoropolymers in pumps will have a cascading effect across various sectors, impacting citizens' daily lives through higher costs, safety concerns, and potential disruption of essential services.

It is the clear position of Europump that the socio-economic consequences of a ban on using fluoropolymers in pumps and other equipment must be investigated thoroughly by the European Commission before a ban is introduced.

It is the opinion of Europump that a ban on the use of fluoropolymers in pumps and other equipment will have massive negative impact on society, halt important parts of the green transition, and have a negative consequence on circular economy initiatives. These consequences far outweigh the environmental benefits of a ban on fluoropolymers since their use entails a low risk for contamination during their life cycle. Risks can be appropriately

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managed through existing regulatory frameworks together with responsible manufacturing and End-of-Life risk-management practices, that Europump supports.