

REACH PFAS restriction process and the effects on the Valve and Sealing Industry

Authorities from five EU countries (Germany, Denmark, the Netherlands, Norway and Sweden) have submitted a regulatory dossier to the European Chemicals Agency (ECHA) proposing new restrictions to reduce the release of per- and polyfluoroalkyl substances (PFAS) into the environment.

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Ball valve.

In February, a 211-page proposal was published on ECHA's website. The proposed blanket ban on more than 10,000 chemicals is subject to a scientific review and six-month consultation period which started on March 22nd. The proposed restrictions are not expected to become effective for at least three or four years.

Included in the PFAS group are fluoropolymers like Polytetrafluoroethylene (PTFE). This polymer is used extensively in many industries for a wide range of applications, and it is significantly used in the production of sealing devices, which are essential components of many industrial processes. However, there has been some controversy over whether PTFE should be classified as a perfluoroalkyl or polyfluoroalkyl substance (PFAS) and subjected to the same restrictions as other PFAS chemicals. In this article, we will examine the reasons why PTFE in sealing devices should be exempt from PFAS restrictions in the EU.

Overview of PFAS and PTFE

Before we delve into the reasons why PTFE should be exempt from PFAS restrictions, it is

important to understand what PFAS and PTFE are and how they differ. PFAS is a broad category of synthetic chemicals that are used in a variety of industrial applications. These chemicals are characterised by their strong carbon-fluorine bonds, which make them highly resistant to degradation and give them unique properties such as high surface tension and low surface energy. PFAS are widely used in the production of a range of products, including fire-fighting foams, non-stick cookware, and waterproof clothing.

PTFE is a member of the perfluorinated polymer family and is sometimes considered a PFAS. However, PTFE is different from other PFAS in several keyways. Unlike other PFAS, PTFE does not break down easily in the environment and is not believed to pose significant risks to human health or the environment. Additionally, PTFE is considered to be less bio accumulative and less toxic than some other types of PFAS.

There are several reasons why PTFE should be exempt from PFAS restrictions in the EU. PTFE has a number of unique properties that make it an ideal material for use in sealing devices. One of the most notable

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properties of PTFE is its low coefficient of friction. This property makes PTFE an excellent material for creating seals that are durable and long-lasting. Additionally, PTFE has a high chemical resistance, which means it can withstand exposure to a range of chemicals without degrading or losing its sealing properties. This makes it particularly useful in applications where seals are required to function in harsh or corrosive environments especially as packings and gaskets in valves for the chemical industry.

PTFE has been widely used in sealing devices for decades, and its effectiveness and safety have been well-established through numerous studies and evaluations. In the United States, for example, the Environmental Protection Agency (EPA) does not consider PTFE to be a hazardous substance or a priority pollutant. The European Chemicals Agency (ECHA) has also concluded that PTFE is not a persistent organic pollutant. These evaluations and regulatory decisions provide strong evidence that PTFE is safe for use in sealing devices and valve applications.

Another argument for why PTFE in sealing devices should be exempt from PFAS restrictions in the EU is that it is already subject to regulation under other existing legislation. For example, the European Union's REACH (Registration, Evaluation, Authorisation, and Restriction of Chemicals) regulation controls the use of chemicals in products sold in the EU. This regulation requires that all chemicals used in products undergo a thorough evaluation of their potential risks to human health and the environment. PTFE has undergone this evaluation and has been found to be safe for use in sealing devices. This regulation ensures that PTFE is subject to appropriate regulatory oversight and provides a mechanism for addressing any potential concerns that may arise in the future. There are currently no alternative materials that are as effective. Even if there are possible alternatives emerging to implement them for critical applications in industries like nuclear, aerospace, military and petrochemical requires application testing and approvals which can take from 5 to 25 years.

Beside issuing a position paper and collaborating with other industry trade

organisations, the ESA has commissioned a socio-economic analysis of the use of fluoropolymers and -elastomers in the sealing industry. 400 companies participated in this survey. Beside ESA members, OEMs and end users were among the participants. It is critical to forward such detailed information to ECHA who is acting on the principle 'No data, no market.' Industry input and data – across the entire fluoropolymer value chain – are critical to support proposed and additional derogations as well as exemptions.

So, it is most important now for the producers and users of fluoropolymers to participate in the online consultation on the PFAS restriction proposal on the ECHA website (<https://echa.europa.eu/>) which is open until September 25th. ■

About the author

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