

Non-confidential version of Attachment to Missing Use: Chemical Industry

1. Type of PFAS and handling

For many years, we have carried out the synthesis of more than hundred different polymeric precursors using trifluoromethanesulfonic acid (TFMSA), CAS 1493-13-6, EC 216-087-5, as homogeneous catalyst. The process runs energy-efficiently and yields high quality products with few unwanted by-products. TFMSA as catalyst enables a special molecular structure (topology) of the resulting polymer which determines the special application properties of the products. To date, we are not aware of any equivalent substitute. (The consumption quantity is confidential business information and available under Section V.)

Handling of the catalyst takes place in a closed system and in designated parts of the plant, without emissions or exposure of employees (work under full protection).

At the end of the manufacturing process, the catalyst is neutralized, completely separated as a solid and incinerated by the disposal company in compliance with the law.

2. Manufactured products with PFAS as catalyst

The polymeric precursors produced in this way are further converted into over a thousand polymers. (The volumes produced and imported are confidential business information).

3. Use of products

These polymer-containing products are used in our customers' final product only in small quantities (typically low single-digit percentages) but are essential for final product quality and function.

Around one third of the polymer-containing special additives produced with TFMSA as catalyst are used in the EU for the manufacture of high-performance insulation materials. They are significantly more efficient than standard products, make a significant contribution to climate protection and have high growth potential in the coming years.

The number of customers buying these polymer-containing products from us amounts to more than a thousand from different industrial sectors. They are used in insulation materials, but also in various functional applications that increase the lifetime of products such as coatings in the automotive industry or building protection products.

4. Analytics

We are working on establishing an analytical method to determine potential fluorinated impurities, but for the time being no reliable results are available due to the very low concentration limit.

5. Research for alternatives and business impact

For the time being, we do not have a TFMSA-free alternative for these specific polymer types that we could generally use in our production and that would result in products of the same quality. The search for alternatives is in the early stages and the chances of success are not yet foreseeable, not only in terms of yield, but also in terms of energy consumption, production capacity as well as product quality and its applicability and acceptance by customers. We estimated the cost of a potential substitution for research, process development and application technology and for the rebuild/new construction, not considering the downstream costs for our customers. The current TFMSA technology is the product of a thirty-year development period. Accordingly, we expect a substitution period of many years for R&D, application technology and production in each case, with complex approval procedures. For manufacturing process changes, time-consuming and costly re-qualifications have to be carried out for most customers.

If we were no longer allowed to use TFMSA as catalyst after the restriction came into force, we would lose many thousand tons of polymer-containing products with very high sales volume.

If no alternative to the current process is found and the use of TFMSA as a catalyst in the chemical industry is banned by the restriction, this would affect many jobs in the areas of development and application technology, production, quality control, logistics, sales, product safety and others.

6. Request

Therefore, we would like to apply for an exemption of TFMSA in this catalyst application in the synthesis of polymers, including an exemption for our supplier to manufacture and transport the catalyst itself.