

Position paper

The general restriction of PFAS endangers the semiconductor industry in Europe and the goals of the European Chips Act as well as the ecological and digital transformation in Germany and Europe!

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Background

Denmark, Germany, the Netherlands, Norway and Sweden have made a joint proposal to restrict per- and polyfluorinated alkyl substances (PFAS) in Europe under the European REACH Regulation. The substance group of PFAS comprises more than 10,000 substances that are used in numerous applications due to their unique chemical properties (e.g. water-repellent as well as temperature and chemical resistant). Due to these special properties, PFAS are relatively stable in nature and are only degraded with difficulty. The use of PFAS is already (strictly) regulated in some areas and some applications. The now planned full restriction of PFASs under REACH would cover their placing on the market, manufacture, use and presence in the product in the EU. Temporary exemptions from the restriction are possible under certain conditions.

Problem

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PFASs form a very heterogeneous group of substances and are used in an extremely wide variety of ways. A general risk-independent and thus undifferentiated restriction of PFAS is not in the interest of Europe as an industrial location. A ban would have very negative effects on key industrial sectors, especially the semiconductor industry.

PFASs are used in the semiconductor industry in the production process (front end), for example in the form of photoresists, etching and cleaning gases, solvents, refrigerants and in production equipment, for example in valves, seals or pipe linings. However, they can also occasionally be a component of semiconductor products/chips that are used during the back-end, e.g. in housings, adhesives or in the carrier material. The use of many PFAS is indispensable in chip production and for the most part cannot be replaced by alternatives even in the long term.

PFASs are used in semiconductor production in mostly closed systems. The semiconductor industry analyses and monitors its wastewater streams for various substances in accordance with legal requirements to ensure that the values are below the applicable legal requirements (limit values). Due to the use of technically complex abatement systems (combined exhaust air treatment processes optimised for emissions in order to destroy environmentally critical substances such as PFCs, some of which are also PFASs, before they are released into the environment), only minimal residual quantities remain in the exhaust air.

However, the semiconductor industry recognises that further efforts are needed to further reduce the input of PFASs.

Chip production without the aforementioned safe use of PFAS is definitely not possible at the moment, as there are currently no chemical substances that would be suitable for carrying out the necessary chemical processes in the same way as PFAS. Even at the end of the transitional period of 13.5 years promised in the restriction proposal, it is more than questionable whether there will be suitable alternatives.

An unlimited exemption is therefore needed to maintain semiconductor production in Europe. A time limit on the use of PFASs under the current REACH regime would only lead to a delayed end of semiconductor manufacturing in Europe after the end of the exemption.

Furthermore, it is essential for the maintenance of the semiconductor industry to include suppliers and their sub-suppliers who supply the semiconductor industry with the necessary production materials (e.g. chemicals, spare parts for production machines, piping systems) that are needed for chip production. The same applies to non-European semiconductor manufacturers as well as suppliers who want to market products containing or manufactured with PFAS in Europe.

Without corresponding exemptions, there is a risk that the general restriction of PFAS will worsen the supply of the semiconductor industry with production materials required from the front end (wafer production) to the back end (packaging), or that these will no longer be available, or that required materials may no longer be acquired and used due to the lack of PFAS-free alternatives. Semiconductor production in Europe would therefore no longer be possible.

This contradicts the clear objective of the European Union and the Member States, formulated in the European Chips Act, to expand European capacities in the field of semiconductor production and to strengthen Europe's competitiveness and resilience in semiconductor technologies and applications. Semiconductors are essential components of industrial value chains and are of strategic importance for the ecological and digital transformation in Germany and Europe. For example, semiconductors play a decisive role in the expansion of renewable energies, as they are the only way to efficiently generate, distribute, store and use electricity.

Resolution

In order not to jeopardise the important goals of the European Chips Act and not to deprive Europe of an essential industrial basis, a general restriction of PFAS within the framework of the REACH regulation for the semiconductor industry and its supply chains should be avoided at all costs. If the restriction of PFAS is not to become a locational disadvantage for European and German semiconductor companies, an indefinite exemption from the PFAS restriction must apply to the semiconductor industry and its direct material and equipment suppliers as well as their sub-suppliers.

For the strategic autonomy of the European Union, it must be ensured that semiconductors can continue to be produced in Europe and that stable and sustainable supply chains remain in place for this purpose. Therefore, exemptions for necessary import and supplier materials are also necessary so that the semiconductor industry can use all products needed for the production of semiconductors and make its contribution to the ecological and digital transformation in Germany and Europe.

A restriction of PFAS in the semiconductor industry and thus a massive restriction of all chip production would not only take away the basis of the EU Chips Act, but would also make the transformation of EU society into a net-zero society and the achievement of the climate goals impossible.

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