



General Information on the Restriction of Per- and Polyfluoroalkyl Substances (PFAS)

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Dear Customers,

Many people are asking us about the current status of the regulation that the European Chemicals Agency (ECHA) is seeking to introduce in relation to per- and polyfluoroalkyl substances and what impact it will have on unpopulated printed circuit boards (PCBs). For this reason, we are writing this letter to explain what we believe is likely to become the status quo:

1. Current regulatory status in the EU

Due to environmental and health concerns about chemicals such as perfluorooctanoic acid (PFOA), the European Union (EU) is considering regulations that would ban the import, manufacture, and use of a very broad category of per- and polyfluoroalkyl substances (PFAS). According to the EU's definition, this would also include substances such as polytetrafluoroethylene (PTFE). ECHA published its proposed regulation under REACH in February 2023. The proposal would ban PTFE and other PFAS in Europe from around 2027 onwards.

2. What consequences would a PTFE ban have for your PCB products?

Our wide range of high-frequency laminate materials includes some PTFE-based product lines. Their reliable, stable electrical and mechanical properties make them products of choice for your specialized PCB applications, including radar applications for automotive, aerospace and military engineering, as well as wireless transmission applications. In the event of a ban, it would no longer be possible to make unrestricted use of these PTFE-based laminates in your products. Alternative material solutions would have to be used.

3. What steps are our suppliers planning for laminates containing PTFE?

Companies such as Rogers Corporation have been among the first material suppliers to respond to this dynamic regulatory environment by taking the following actions:

Ensuring continuity of supply: Some PTFE resin suppliers have announced their intention to withdraw from the business. To minimize supply chain risks, Rogers is expanding its qualified pool of suppliers for the PTFE resins used in its products.

In the course of the ECHA's open consultation period, companies such as Rogers will respond with their recommendations for adding exemptions under the ban.

Providing RF solutions for our PCB manufacturers and end customers: Laminate manufacturers will strive to continuously develop and offer new solutions for their portfolio of high-performance HF materials through the work of their R&D teams.

4. What can you do as a customer?

As valued customers, we want to encourage you to work with us in this process. Respond to announcements from the regulatory authorities: We believe that industry should take action to promote the appropriate use of fluoropolymers while supporting science-based initiatives that seek to substitute the substances of greatest concern in the long term.

In the course of the ECHA's open consultation period, the public can provide their input on the upcoming regulation. Customers who actually use the materials in question are in the best position to identify the required uses and explain firsthand to ECHA why these applications and products are so important. We anticipate that it will only be possible for additional exemptions to be considered and granted within the context of this consultation process. Attached to this letter are details of how you can participate in the consultation.

Collaborate with the KSG Group and with laminate manufacturers: The evolving regulatory landscape provides laminate manufacturers (e.g., Rogers) with a valuable opportunity to offer you alternative solutions while demonstrating our shared commitment to environmental and social responsibility. We encourage you to reach out directly to the technical application experts based at the laminate manufacturers so that you can work with them on finding alternative material solutions for your products.

5. Useful Links

Understanding REACH:	https://echa.europa.eu/regulations/reach/understanding-reach
PFAS restriction proposal:	https://echa.europa.eu/-/echa-publishes-pfas-restriction-proposal
Option to comment:	https://comments.echa.europa.eu/comments_cms/AnnexXVRestrictionDossier.aspx?RObjecId=0b0236e1885e69de
Current time line:	https://echa.europa.eu/-/echa-publishes-pfas-restriction-proposal

6. What concrete steps can you take as a user?

Contact your industry association at the national or European level if:

You identify false statements regarding fluoropolymers or their use in your application

You agree with the alternatives/substitutes proposed for fluoropolymers in your application

In addition, please be aware of the following:

If no exemption is proposed for your application, you should submit scientific and socioeconomic evidence to convince the ECHA committees that your application qualifies for one.

If your application is marked for reconsideration in Table 9, additional stakeholder evidence is required to support its classification as an exemption. You should consider submitting additional evidence to explain that your application is appropriate and that you should be granted an exemption.



If an exemption is proposed for your application, you should still comment if you have evidence that could affect the period of time for which the exemption is granted.

Please participate in the open consultation as soon as possible (note the deadline is September 22, 2023).

Information to be submitted during the public consultation:

1. Detailed information on the fluoropolymers that you use and a description of your application.
2. Details of the performance criteria, function, and benefits of fluoropolymers in your application.
3. Information on the standards or specifications that your or your customer's application must fulfill, highlighting why fluoropolymers are required to meet those standards.
4. Availability, suitability, and technical feasibility of alternative substances and/or technologies and the economic consequences of such alternatives, if any.
5. What are the likely impacts on your company, your downstream users, and your customers if fluoropolymers are regulated in accordance with the proposed restriction as it currently stands?

As your long-time supplier, the KSG Group also has an interest in continuing to deliver PCBs to your specifications and to high quality standards. However, we are only able to use those materials that are available on the global market. If the announced ban or restrictions enter into force, our suppliers will be required to comply with them.

Let us therefore work together to ensure that the ongoing regulatory process does not have any unexpected negative impacts on our business operations. We thank you in advance for your support in this process.

We will continue to keep you informed as the regulatory process advances.

KSG Group

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