



Applied Materials' Statement on PFAS

Overview

Applied Materials is the leader in materials engineering solutions used in the production of virtually every new silicon chip and advanced display in the world, and we are committed to working across the technology ecosystem to drive critical innovations that Make Possible™ a Better Future for everyone.

As part of Applied's commitment to minimize the environment impact of our own operational footprint and of our value chain, we are pursuing a proactive approach to mitigate potential risk related to per- and polyfluoroalkyl substances (PFAS), while avoiding the risk of disruptions to the global semiconductor supply chain.

PFAS is a class of fluorinated organic chemicals used in semiconductor manufacturing and semiconductor equipment to meet safety, contamination control, resilience, and other criteria. While Applied does not manufacture PFAS, these substances may be found in parts, components, process chemicals, and other materials supplied to Applied or used in the operation of our products.

The semiconductor industry has already phased out certain PFAS where possible; by 2016, the industry completely replaced the use of PFOS in photolithography applications¹. Applied also restricts the use of certain PFAS, including PFOA & PFCA, in our supply chain and requires suppliers to disclose the presence of PFAS on the REACH Candidate List of Substances of Very High Concern.

While additional regulations have been proposed in the European Union and the United States to restrict future PFAS usage, there are no current restrictions that impact Applied's ability to use PFAS in our products and meet customer commitments. Additionally, the Semiconductor Industry Association (SIA) Semiconductor PFAS Consortium has stated that in some cases, "a non-PFAS alternative may not be capable of providing the required chemical function,"² due to the unique combination of properties PFAS materials exhibit.

Applied has adopted a "PFAS-Responsible" approach: we are prioritizing the elimination of PFAS where technically and commercially feasible (while avoiding regrettable substitutions), and the development of non-PFAS alternatives where needed. In critical applications where there is currently no line-of-sight to suitable non-PFAS alternatives, Applied will drive environmental and commercial risk mitigation and work with our suppliers and customers to ensure the most responsible use of PFAS. Applied is working closely with our suppliers to evaluate the impact of relevant materials manufacturers' exit from the PFAS market and avoid any related business interruptions. Our goal is to minimize the environmental and human health risks from PFAS use without disrupting global semiconductor manufacturing.

Applied is also actively participating in industry groups that are sharing information about the use of PFAS throughout the semiconductor industry. We strive to provide stakeholders with a clearer picture of the pervasive utility of PFAS and to inform regulators of the potential impact wholesale PFAS restrictions could have on the industry. In addition, we will continue to monitor regulatory developments related to PFAS and adapt our strategy as warranted.

¹ Semiconductor PFAS Consortium Photolithography Working Group. 2023. "PFOS and PFOA Conversion to Short-Chain PFAS-Containing Materials Used in Semiconductor Manufacturing."

² RINA Tech UK Limited. 2023. "The Impact of a Potential PFAS Restriction on the Semiconductor Sector."



Evaluation

Applied Materials conducts bi-annual due diligence of our supply chain to ensure our suppliers meet applicable requirements under the European Union's Registration, Evaluation, Authorisation and Restriction of Chemicals (Regulation (EC) 1907/2006) (EU REACH), the United States Environmental Protection Agency's (U.S. EPA) Toxic Substances Control Act (TSCA), and other substance regulations. The due diligence process requires suppliers to notify us of the presence of certain PFAS (like PFOA and PFCA) and other chemicals listed in Applied Materials' [Declarable Substances List](#). Our supplier due diligence standards are governed by our Minimum Product EHS Requirements specification, which is part of our supply agreements and design drawings/specifications.

In 2022, we expanded our due diligence to a larger class of PFAS, starting with an initial supply chain survey to identify the presence of PFAS-containing parts supplied to Applied. We are now building on that data by surveying suppliers to identify suppliers and parts most likely to contain PFAS. In parallel to this due diligence, we are partnering with our suppliers on PFAS training, offering educational webinars and resources developed by regulatory experts.

Our evaluation process will continue to evolve as regulatory bodies adopt PFAS restrictions or reporting requirements applicable to our products.

Mitigation

Ongoing research by the semiconductor industry indicates that some PFAS are an irreplaceable part of semiconductor manufacturing, including equipment, due to their combination of physical and chemical properties. A series of recent whitepapers published by the SIA's Semiconductor PFAS Consortium detail these capabilities and the impact PFAS restrictions would have on the semiconductor industry ([available here](#)).

Applied's sustainability, supply chain, EHS, and engineering teams will use the outcome of our due diligence activities to proactively evaluate alternative sources, product designs and products, and to mitigate risk where possible. We are also working to identify long-term development projects to reduce or eliminate the need for PFAS in certain applications.

Industry Collaboration

Applied is a leading member of the SIA's [Semiconductor PFAS Consortium](#). Together with the Consortium, we:

- Identify PFAS uses and viable alternatives
- Apply the pollution prevention hierarchy to, where possible: reduce PFAS consumption or eliminate use, identify alternatives, and minimize and control any environmental and human health impacts
- Develop socioeconomic impact analysis data
- Identify and support research needs

Our representatives are active members of the Consortium's technical working groups and contributed to the development of white papers that probe how PFAS are used by our customers, where they are critical to the operation of our products, and the potential availability of viable alternatives. The company is also engaged with industry groups like SEMI to track and respond to proposed regulations, including the European Chemical Agency's PFAS Restriction Dossier, U.S. EPA's TSCA 8(a)(7), and various U.S. state proposals.

This statement was last updated on August 23, 2023.