



January 28, 2025

Submitted via email to rulecomments.dep@maine.gov

Melanie Loyzim
Commissioner
Maine Department of Environmental Protection
17 State House Station
Augusta, Maine 04333-0017

Re: Comments from SEMI and SIA in Response to the DEP Proposed Rule for PFAS in Products

Dear Commissioner Loyzim:

On behalf of SEMI¹ and the Semiconductor Industry Association (SIA),² we write to offer comments in response to the Maine Department of Environmental Protection's (DEP) proposed Chapter 90 rule (the Proposed Rule) to implement 38 M.R.S. § 1614. That statute restricts intentionally added PFAS in all products starting in 2032 (and on other dates for specified products), unless a product is determined by DEP to be a currently unavoidable use (CUU) of PFAS. The law also requires manufacturers of products covered by CUU determinations to report certain information to DEP. However, certain products are exempt from all of the law's provisions, including semiconductors and equipment and materials used in the manufacture of semiconductors.

These comments discuss the definition that DEP has put forward for "semiconductor" in the Proposed Rule, and serve as a follow-on to comments jointly submitted by SEMI and SIA on August 30, 2024 regarding DEP's Concept Draft. SEMI and SIA appreciate DEP's efforts on the Proposed Rule and look forward to future engagement as it relates to the semiconductor supply chain.

¹ SEMI® represents more than 3,000 member companies to advance the technology and business of electronics manufacturing. SEMI members are responsible for the innovations in materials, design, equipment, software, devices, and services that enable smarter, faster, more powerful, and more affordable electronic products. Electronic System Design Alliance (ESD Alliance), FlexTech, the Fab Owners Alliance (FOA) and the MEMS & Sensors Industry Group (MSIG) are SEMI Strategic Association Partners, defined communities within SEMI focused on specific technologies. Since 1970, SEMI has built connections that have helped its members prosper, create new markets, and address common industry challenges together. SEMI maintains offices in Bangalore, Berlin, Brussels, Hsinchu, Seoul, Shanghai, Silicon Valley (Milpitas, Calif.), Singapore, Tokyo, and Washington, D.C. For more information, visit www.semi.org.

² SIA has been the voice of the semiconductor industry for over 45 years, representing 99 percent of the U.S. semiconductor industry by revenue and nearly two-thirds of non-U.S. chip firms. Semiconductors are one of America's top export industries and a key driver of America's economic strength, national security, and global competitiveness. The semiconductor industry directly employs over 300,000 workers in the United States, and U.S. semiconductor company sales totaled \$264 billion in 2023. Through this coalition, SIA seeks to strengthen leadership of semiconductor manufacturing, design, and research by working with Congress, the Administration, and key industry stakeholders around the world to encourage policies that fuel innovation, propel business, and drive international competition. Additional information is available at www.semiconductors.org.

I. Comments Regarding Definitions (Section 2)

a. Definition of Semiconductor

SEMI and SIA appreciate that DEP adopted in the Proposed Rule the semiconductor definition recommended in the comments submitted jointly by SEMI and SIA in August 2024. This new definition is better aligned with the broad exemption for semiconductors that the Maine Legislature included in 38 M.R.S. § 1614(4)(K) as amended through L.D. 1537.

As previously noted, this definition that is now included in the Proposed Rule reflects the semiconductor chip product definition used at the federal level in 17 U.S.C. § 901(a)(1). This harmonization of DEP's future rule with federal law is crucial given that our industry operates across the country and globally, meaning that inconsistencies between how jurisdictions define semiconductor must be avoided to ensure regulatory consistency. In addition, the use of the phrase "discrete functional object" ensures the inclusion of the assembled, packaged semiconductor devices that are in fact the products being sold. Finally, the additional changes from the Concept Draft to the Proposed Rule concerning the exclusionary portion of the semiconductor definition more accurately reflect the various components, such as printed circuit boards and auxiliary items, that do or do not comprise a semiconductor.

After further assessment of the definition, SEMI and SIA would like to propose one more change to the "semiconductor" definition, which is to remove the word "related" as follows:

"Semiconductor. "Semiconductor" means material having conductivity characteristics intermediate between conductors and insulators, as well as a discrete functional object having two or more layers of metallic, insulating, or semiconductor material, deposited or otherwise placed on, or etched away or otherwise removed from, a piece of semiconductor material in accordance with a predetermined micron or sub-micron pattern and intended to perform electronic and other ~~related~~ functions. Semiconductors do not include commonly associated materials such as printed circuit boards (PCB), PCB mounting solder, PCB mounting flux, external wires, PCB screen printing ink, connectors and sockets, or PCB conformal coatings."

Microelectromechanical systems (MEMS), including MEMS that are only micromechanical systems (e.g., grids, nozzles, trays, screens) and which do not have an electronic element, are nonetheless manufactured using semiconductor processes, but might not be recognized as having functions "related" to electronic functions. Deleting the ambiguous term "related" helps ensure legal certainty.

b. Note following Definition of Semiconductor

The note following DEP's semiconductor definition in the Proposed Rule states that "[a] product must meet the definition of a semiconductor product will not be considered a semiconductor solely because other products that serve the same or similar purpose are semiconductors." The note contains a grammatical error that makes its meaning unclear. Further, the note references "the definition of semiconductor product" even though that term is not proposed to be defined. There is only a definition of "semiconductor". SEMI and SIA believe that the purpose of this note is to make clear that a "semiconductor" is not just a material but also a type of product subject to the semiconductor exemption in section 4.A.(11) of the Proposed Rule. To address these issues, SEMI and SIA suggest the following revised note instead:

“NOTE: semiconductor means both a material and a type of product that is a discrete functional object as described in the definition. Semiconductor products (discrete functional objects) include, but are not limited to, integrated circuits, micro electromechanical systems, solar cells, patterned flat panel display substrates, light emitting diodes, sensors/detectors, and other products.”

II. Comments Regarding Exemptions (Section 4)

a. Note following Subsection 11 of Section 4(A)

Section 4(A) of the Proposed Rule outlines and provides clarifying notes on the products exempt from DEP’s future rule pursuant to 38 M.R.S. § 1614(4) as amended through L.D. 1537. The note under Subsection 11 of Section 4(A) in the Proposed Rule explains in part that “[w]hile semiconductors incorporated into electronic equipment are exempted from this Chapter, electronic equipment in their entirety is not.” This is the same note DEP included in the Concept Draft. As explained in the SEMI-SIA comments from August 2024, this statement is unclear, and potentially inaccurate, given that the law’s exemption for semiconductors at 38 M.R.S. § 1614(4)(K) covers “equipment . . . used in the manufacture of semiconductors.” Such exempted semiconductor manufacturing equipment could be electronic equipment. Moreover, 38 M.R.S. § 1614(4)(L) and (M) exempt, respectively, non-consumer electronics and equipment directly used in the manufacture or development of products described in paragraphs E to L.

SEMI and SIA therefore reiterate our recommendation that the note under Subsection 11 of Section 4(A) in the Proposed Rule be edited to clarify that electronic equipment used in the manufacture of semiconductors is also exempt. Rewritten, this note should read as follows:

NOTE: While semiconductors incorporated into electronic equipment are exempted from this Chapter, electronic equipment in their entirety is not exempt unless otherwise specified in this Chapter (for example, the electronic equipment is used in the manufacture of semiconductors, is considered a non-consumer electronic product under Subsection 12, or (as described in Subsection 13) is otherwise considered equipment directly used in the manufacture or development of products described in Subsections 5 through 12).

b. Note Following Subsection 13 of Section 4(A)

As mentioned above, 38 M.R.S. § 1614(4)(M) exempts “[e]quipment directly used in the manufacture or development of the products described in paragraphs E to L.” SEMI and SIA reiterate our recommendation, originally included in our SEMI-SIA submission from August 2024, that DEP include a note following Subsection 13 of Section 4(A) in the rule to clarify the meaning of “directly used” in this context, in line with the fact that the Maine Legislature included this exemption in the statute as a means to broadly protect supply chains on which exempted products such as semiconductors rely:

NOTE: Equipment “directly used” in the manufacture or development of products described in Subsections 5 through 12 includes equipment and related materials used for the servicing, maintenance, operation and upgrading of products described in Subsections 5 through 12.

III. Conclusion

SEMI and SIA are committed to the need for environmental protection and the sustainability of semiconductor manufacturing operations, which is a complex challenge. SEMI and SIA are grateful for the opportunity to engage on this matter and on DEP's planned rulemaking efforts and are available to meet at your convenience to further elaborate on the issues discussed in these comments. If you have any questions or would like to discuss our positions, please do not hesitate to contact Ben Kallen, Senior Manager for Public Policy and Advocacy at SEMI (bkallen@semi.org) and Alex Gordon, Manager of Government Affairs at SIA (agordon@semiconductors.org).