

Comments of the
Semiconductor Industry Association (SIA)
on
Regulation of Persistent, Bioaccumulative, and Toxic Chemicals Under TSCA Section 6(h)
Request for Comments

[EPA–HQ–OPPT–2021–0202; FRL–10021– 08]

86 Fed. Reg. 24398 (March 16, 2021)

The Semiconductor Industry Association (SIA) submits these comments in response to the request by the Environmental Protection Agency (EPA) for comments on “newly-raised issues associated with the March 8, 2021, compliance date . . . for certain regulated articles” containing Phenol, Isopropylated Phosphate (3:1) (“PIP (3:1)”). 86 Fed. Reg. 24398 (March 16, 2021). SIA’s comments pertain to the presence of PIP (3:1) in the complex equipment used to fabricate semiconductors. The importance to SIA members of resolving this issue and the potential for the current regulation to adversely impact the supply of semiconductors has been expressed to the Agency in writing and during the March 1, 2021 meeting convened by Acting Assistant Administrator Michal Freedhoff. SIA is supplying these comments as part of our ongoing efforts seeking to ensure the suppliers of semiconductor manufacturing equipment can continue to provide the equipment essential to the production of semiconductors in compliance with applicable regulations.

SIA is the trade association representing leading U.S. companies engaged in the research, design, and manufacture of semiconductors. Semiconductors are the fundamental enabling technology of modern electronics that has transformed virtually all aspects of our economy, ranging from information technology, telecommunications, health care, transportation, energy, and national defense. The U.S. is the global leader in the semiconductor industry, and continued U.S. leadership in semiconductor technology is essential to America’s continued global economic leadership. More information about SIA and the semiconductor industry is available at www.semiconductors.org.

Background on Semiconductor Manufacturing and Equipment

Semiconductor manufacturing is a highly complex manufacturing process that occurs at advanced fabrication facilities (“fabs”) employing sophisticated and specialized manufacturing equipment (known in the industry as “tools”). This equipment conducts hundreds of carefully controlled steps to deposit, modify, and remove chemicals – in exactly the right amount, in exactly the right place, at exactly the right time – to a thin, round slice of silicon (known as a “wafer”) to create numerous patterned layers of the integrated circuit, typically many thousands of times thinner than that of a human hair. Tools are costly, highly engineered pieces of durable capital equipment comprised of many thousands of components and costing millions of dollars (USD). They can require service periodically which can include installation of replacement parts that must conform for years to come to the original components’ design.

Shortly after EPA’s issuance of the final rule restricting the use of PIP (3:1), including in complex articles such as components of semiconductor manufacturing equipment, one of our suppliers informed its customers that the products the supplier provides may contain PIP (3:1). SIA immediately undertook efforts to investigate this issue further. Based on our subsequent discussions with numerous equipment suppliers, SIA now understands that, given the complex supply chain of thousands of material and component suppliers around the world, it will take years to determine where PIP 3:1 is present in each of these components, evaluate whether it is feasible to phase out the use of PIP (3:1) in each component, identify potential substitutes to

PIP, qualify these substitutes, and implement the use of replacements for PIP (3:1) in components in the semiconductor manufacturing equipment. This is an immense logistical challenge and will take many years to complete. Unfortunately, the final rule EPA promulgated on January 6, 2020 did not provide a sufficient phase-in period for such an effort to be carefully undertaken throughout the component and equipment supply chain for the semiconductor manufacturing industry.

SIA Requests an Exemption for Semiconductor Manufacturing Equipment

The production of semiconductors is an essential function provided by SIA's members and the industry represents a vital sector of the US economy. Therefore, it is critical the equipment suppliers to the semiconductor industry are given sufficient time to undertake this difficult and time-consuming process in an orderly way to avoid any further disruption to the ability of our suppliers to provide advanced semiconductor manufacturing equipment. SIA agrees with and supports the comments of SEMI, the association representing the suppliers of semiconductor manufacturing equipment, which has recommended practical actions EPA must take to enable our industry to achieve this goal and avoid additional disruptions.

Specifically, in accordance with the comments filed by SEMI on behalf of the suppliers of semiconductor manufacturing equipment, we ask EPA to modify the PBT rules to add the following exclusions from the prohibitions in the final rules:

- An exclusion for PIP (3:1) used in new semiconductor manufacturing and related equipment (SMRE)¹ and in new parts for SMRE, or, in the alternative, an exemption that is structured as an extended phase-out schedule, with a timeline that can accommodate at least a 15-year transition period.
- A permanent exclusion for repair-as-produced spare parts for SMRE, for PIP (3:1) and DecaBDE.
- An R&D exemption for processing and distribution in commerce of PIP (3:1) for use in research and investigatory efforts for finding substitute materials for PIP (3:1).
- A general *de minimis* concentration threshold for the presence of PIP (3:1) and DecaBDE in articles.

SIA is committed to working with our equipment suppliers to drive replacements for PIP where feasible in semiconductor manufacturing equipment. But as we move forward with this work, if a complete exclusion for the presence of PIP 3:1 in SMRE is not issued, then a long-term (15-year) exemption will be necessary to achieve this goal.

Ensuring the continuation and expansion of semiconductor manufacturing in the U.S. is a recognized national priority, and Congress addressed concerns over the decline in semiconductor manufacturing in the U.S. in the recent defense authorization act (P.L. 116-283) and authorized a program to incentivize semiconductor manufacturing.² In order to avoid any disruption to the supply of equipment needed for the fabrication of semiconductors relied on by all sectors of the economy and our national security, we request EPA reasonably exercise its

¹ The SEMI comments describe SMRE to include semiconductor-related manufacturing equipment (as well as microelectromechanical-related, solar-related, and LED-related manufacturing equipment), as well as semiconductor fabrication facilities' support equipment and infrastructure, such as laboratory, substrate and device (e.g., die) preparation, and assembly and test operations, including advanced packaging.

² The Pentagon's most recent industrial policy report highlights the need for the U.S. to maintain a robust semiconductor manufacturing capability. See Office of the Secretary of Defense, "Industrial Capabilities: Report to Congress (Jan. 2021), available at <https://media.defense.gov/2021/Jan/14/2002565311/-1/-1/0/FY20-INDUSTRIAL-CAPABILITIES-REPORT.PDF>.

statutory authority to provide the requested exclusion or exemptions addressed in SEMI's comments as echoed here.

SIA representatives would be glad to meet with Agency personnel to discuss these comments and to provide any additional information required to fashion the exclusion and exemptions discussed here and described more fully in SEMI's comments.