SEMICONDUCTOR INDUSTRY ASSOCIATION

Comments of the
Semiconductor Industry Association (SIA)
on
Decabromodiphenyl Ether and Phenol, Isopropylated Phosphate (3:1); Revision to the Regulation of Persistent, Bioaccumulative, and Toxic Chemicals Under the Toxic Substances Control Act (TSCA)

EPA–HQ–OPPT–2023–0376

88 Fed. Reg. 82287 (November 24, 2023)

Submitted January 8, 2024

The Semiconductor Industry Association (SIA)[1] submits these comments in response to the proposal by the Environmental Protection Agency (EPA) to revise the regulations for decabromodiphenyl ether (decaBDE) and phenol, isopropylated phosphate (3:1) (PIP (3:1)), including the 10-year extension of the PIP (3:1) compliance date for use in manufacturing equipment and semiconductor manufacturing industry. In light of historic investments made under the CHIPS and Science Act of 2022,[2] it is important the U.S. semiconductor manufacturing industry maintain viable operations for decades to come in order to support the bill's objectives for U.S. national security, economic growth, and supply chain resilience.

Given the presence of PIP (3:1) in the complex equipment used in the fabrication of semiconductors, as well as in semiconductor fabrication facility ("fab") infrastructure, SIA strongly supports EPA's proposal to extend the compliance date for 10 years to address PIP (3:1) in the semiconductor sector. We also believe EPA should provide a longer timeframe – or an indefinite exclusion – for replacement parts, as well as a reasonable de minimis threshold level for the detection of PIP (3:1) in articles. Finally, SIA supports the proposed exclusion for circuit boards and wire harnesses, and we request certain clarifications in this regard. SIA also supports the comments submitted by SEMI, the association of the semiconductor equipment and materials industry, in particular with regard to PIP (3:1) for use in products and in articles for use in manufacturing equipment and in the semiconductor industry.

1. Compliance date extension for PIP (3:1)

As SIA summarized in our comments filed in May 2021[3] and December 2021,[4] SIA has been informed by the equipment suppliers to the semiconductor industry and SEMI that

[1] The Semiconductor Industry Association (SIA) is the voice of the semiconductor industry, one of America's top export industries and a key driver of America's economic strength, national security, and global competitiveness. SIA represents 99% of the U.S. semiconductor industry by revenue and nearly two-thirds of non-U.S. chip firms. 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. Learn more at www.semiconductors.org.
[2] Public Law 117-167
[3] https://www.semiconductors.org/wp-content/uploads/2021/05/PIP-comments-may-17-2021.pdf.
[4] https://www.semiconductors.org/wp-content/uploads/2022/01/PIP-comments-12.21.2021.pdf

PIP (3:1) is used in the complex industrial equipment used in the fabrication of semiconductors and in equipment that is used in operations involving semiconductors and which might be ancillary to fabs exclusively.

In order to ensure a secure and reliable supply of the specialized equipment used in semiconductor fabrication and related operations, SIA strongly supports the proposed 10-year extension of the compliance deadline for the phaseout of PIP (3:1) in semiconductor manufacturing equipment. SIA applauds EPA for recognizing the need for an extension of the compliance date and we appreciate the Agency's action in response to our prior comments.

SIA further recommends the terms of the exemption be clarified to be certain the exemption is properly interpreted as being applicable to equipment used in semiconductor manufacturing plants, as well as ancillary operations such as the assembly of use-specific and product-specific packages and components and to their installation within other products and finished articles in which finished semiconductor packages are used.

Our suppliers inform us it will take several years – perhaps even longer than the proposed extension period – for semiconductor equipment suppliers to work with their complex supply chain to finish identifying the presence of PIP (3:1) in components and related equipment, determine options for substitution, qualify alternatives, and implement these changes throughout their supply chain. Accordingly, SIA supports EPA's proposed extension of the compliance deadline to allow the equipment suppliers to the semiconductor industry sufficient time to undertake this difficult and time-consuming process in an orderly way to avoid any disruption in providing advanced semiconductor manufacturing equipment.

Additionally, the revised compliance date extension, when finalized, should be stated as continuing until October 31, 2034, rather than November 25, 2033. This will align with the Agency's stated objective to "to allow an additional 10 years" for the semiconductor industry (88 FR at 82303); this will make clearer that the "additional 10 years" being finalized would be counted from the current (October 31, 2024) compliance date and extended to October 31, 2034, as opposed to 10 years after the published notice of the proposed revision to the rule (November 25, 2033). The full 10-year extension will be necessary to allow sufficient time to undertake this transition.

Finally, SIA recommends exempting the semiconductor manufacturing sector from the recordkeeping requirements due to the difficulty involved in tracking the chemical content of hundreds of thousands of component parts in manufacturing equipment and replacement parts when needed, as noted by EPA's recognition of the complexity of the semiconductor supply chain.

2. Replacement Parts

EPA is also requesting comment "on whether and why a longer timeframe or exclusion may be necessary especially for replacement parts in order to account for complex supply chains and to clear channels of trade" (88 FR at 82306). SIA believes a longer timeframe or indefinite exclusion for replacement parts is appropriate, including (at a minimum) an exclusion for replacement parts for use in servicing or repairing articles distributed in commerce before the proposed extended compliance date takes effect. Manufacturing equipment ("tools") used in semiconductor manufacturing are costly, highly engineered pieces of durable capital equipment comprised of many thousands of components, each one costing millions of dollars. Each tool can contain tens of thousands of parts, and each of these individual parts are highly engineered articles that may contain countless chemical substances, potentially including PIP (3:1) and other chemical substances. The equipment may require service periodically which can include installation of replacement parts that must conform – for decades to come – to the original components' design and performance specifications. To keep these machines operational over their useful life, suppliers must provide replacement parts for use in repair maintenance. EPA has already provided exclusions for replacement parts for motor and aerospace vehicles, and EPA should provide a similar exemption for replacement parts in semiconductor manufacturing equipment. The need for compatible replacement parts meeting the same performance standards as the original materials in machinery and equipment will persist for the rest of the service life of semiconductor manufacturing machinery. Providing such an indefinite exclusion is consistent with the terms of the 2016 amendments to Section 6(c) of TSCA which specifically require EPA to consider the need to exempt replacement parts for complex durable good and equipment.

Therefore, SIA urges EPA to indefinitely permit import, installation, and use of replacement parts that contain PIP (3:1) if they are needed to service equipment or products provided such equipment or products were installed prior to the final deadline for such articles.

3. Threshold Limits

EPA further requests comment on the items submitted to EPA by a semiconductor industry stakeholder group in a letter dated Aug. 4, 2023, which includes a recommendation that EPA adopt threshold limits (88 FR at 82306). SIA believes the final rule should provide for a de minimis limit of 0.1% for the presence of PIP (3:1) in a finished article, below which the article would be exempt from the final requirements. SIA appreciates EPA's acknowledgement of the supply chain complexity in the semiconductor manufacturing and manufacturing equipment industry. A de minimis standard is a practical solution for situations involving complex supply chains in which the ultimate customer (e.g., importer) for a complex article or piece of equipment may not be able to secure and enforce contract specifications or successfully obtain assurances from each of their suppliers and sub-suppliers that comprise multiple tiers in a complex, international supply chain for these pieces of equipment. The inclusion of a reasonable de minimis level for PIP (3:1) in articles would facilitate the ability to obtain

such assurances of compliance within supplies chains in which that would otherwise not always be possible. We also note a threshold of 0.1% is consistent with the de minimis levels set in other global regulatory contexts, such as the European RoHS directive.

4. Clarifications

SIA supports the proposed exclusion in §751.407(b)(1)(iii) for circuit boards and wire harnesses and requests that EPA clarify that it intends to allow the semiconductor manufacturing industry to rely on the proposed exclusion when finalized. As drafted, the proposal could be interpreted to read that the proposed 10-year compliance extension in §751.407(a)(2)(ix) for semiconductor manufacturing would restrict the semiconductor manufacturing sector from relying on the other exclusions provided in the proposal that clearly should be applicable to uses pertinent to operations related to materials likely to be critical in the semiconductor industry and in sectors making use of semiconductors and articles incorporating semiconductors.

Additionally, as noted above, EPA should clarify that "semiconductor manufacturing" means the full scope of semiconductor manufacturing operations, such as back-end semiconductor manufacturing and the incorporation of chips into packages or into finished articles. Such operations are integral parts of the complex semiconductor manufacturing supply chain and their many uses in U.S. commerce and industries that rely on semiconductor sector.

Finally, EPA should clarify that the extension being considered for uses in the semiconductor industry would, when finalized, apply not withstanding the terms of other extensions under consideration in the proposal. Specifically, the extension proposed for PIP (3:1)-containing lubricants and greases is 5 years, while the extension for the semiconductor industry being proposed would continue for 10 years. EPA should clarify that in situations in which a PIP (3:1) containing lubricant or greases might be present in semiconductor manufacturing equipment, the 10-year extension will apply.

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SIA remains committed to working with our equipment suppliers to drive replacements where feasible for PIP (3:1) in semiconductor manufacturing equipment. Our equipment suppliers and SEMI indicate to us that additional time is needed for this process and we support EPA's proposed extension of the compliance deadline for the semiconductor manufacturing and manufacturing equipment industry, and note that a future additional extension beyond 10 years could be necessary depending on progress made in the interim. We appreciate EPA's consideration of these submitted comments and accommodations necessary for our industry.