U.S. Environmental Protection Agency

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)

RIN 2070-AL02

EPA–HQ–OPPT–2023–0376

RESPONSE TO PUBLIC COMMENTS

Received in Response to November 24, 2023, Notice of Proposed Rulemaking

October 2024

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Acronyms and Abbreviations

CFR	Code of Federal Regulations
decaBDE	Decabromodiphenyl Ether
EA	Economic Analysis
EO	Executive Order
EPA	U.S. Environmental Protection Agency
NPRM	Notice of proposed rulemaking
NTTAA	National Technology Transfer and Advancement Act
OSH Act	Occupational Safety and Health Act
OSHA	U.S. Occupational Safety and Health Administration
PBDE	Polybrominated Diphenyl Ethers
PBT	Persistent, Bioaccumulative, and Toxic
PESS	Potentially Exposed or Susceptible Subpopulation
PIP (3:1)	Phenol, Isopropylated Phosphate (3:1)
PPE	Personal Protective Equipment
PRA	Paperwork Reduction Act
RCRA	Resource Conservation and Recovery Act
RFA	Regulatory Flexibility Act
SDS	Safety Data Sheet
TAS	Tribes Approved for Treatment as State
TSCA	Toxic Substances Control Act
UMRA	Unfunded Mandates Reform Act

Introduction

On November 24, 2023, the U.S. Environmental Protection Agency (EPA) published a notice of proposed rulemaking (NPRM) proposing revisions to the regulations for decabromodiphenyl ether (decaBDE) (CASRN 1163–19–5) and phenol, isopropylated phosphate (3:1) (PIP (3:1)) (CASRN 68937–41–7), two of the five persistent, bioaccumulative, and toxic (PBT) chemicals addressed in final rules issued under the Toxic Substances Control Act (TSCA) in January 2021. In the notice, EPA announced that public comments would be accepted until January 8, 2024.

According to regulations.gov, EPA received a total of 33 public comments in response to the notice, including questions, comments, and recommendations, on EPA's overall approach, legal determinations, and chemical-specific actions. EPA posted 31 public comment submissions to regulations.gov and assigned two "DoNotPost" status because they were duplicates. ICF analyzed the 31 posted submissions and determined that all are unique and responsive to the request for comments.

This Response to Comments (RTC) document contains summaries of the public comments received on the proposed rule under TSCA section 6(h), docket identification number EPA-HQ-OPPT-2023-0376, and the Agency's responses to those comments. The comment summaries that follow are organized into issue topic areas, as indicated in the table of contents.

Table 1: Index of Comment Submissions Sorted by Submission Number

Submission Number	Commenter
EPA-HQ-OPPT-2023-0376-0283	Fuminori Hasegawa
EPA-HQ-OPPT-2023-0376-0284	Japan Electronics and Information Technology Industries Association (JEITA)
EPA-HQ-OPPT-2023-0376-0285	Japan Auto Parts Industries Association (JAPIA)
EPA-HQ-OPPT-2023-0376-0286	National Ground Water Association (NGWA)
EPA-HQ-OPPT-2023-0376-0287	Japan Agricultural Machinery Manufacturers Association (JAMMA)
EPA-HQ-OPPT-2023-0376-0288	SEMI
EPA-HQ-OPPT-2023-0376-0289	National Marine Manufacturers Association (NMMA)
EPA-HQ-OPPT-2023-0376-0290	Outdoor Power Equipment Institute (OPEI)
EPA-HQ-OPPT-2023-0376-0291	Karen Perez
EPA-HQ-OPPT-2023-0376-0292	American Chemistry Council (ACC)
EPA-HQ-OPPT-2023-0376-0293	Association of Home Appliance Manufacturers (AHAM)
EPA-HQ-OPPT-2023-0376-0294	Prysmian Group North America
EPA-HQ-OPPT-2023-0376-0295	The Boeing Company
EPA-HQ-OPPT-2023-0376-0296	Association for Advancing Automation (A3)
EPA-HQ-OPPT-2023-0376-0297	Chemical Users Coalition (CUC)
EPA-HQ-OPPT-2023-0376-0298	Eastman Chemical Company
EPA-HQ-OPPT-2023-0376-0299	Nuclear Energy Institute (NEI)
EPA-HQ-OPPT-2023-0376-0300	Nuclear Utility Group on Equipment Qualification (NUGEQ)
EPA-HQ-OPPT-2023-0376-0301	The Association for Manufacturing Technology (AMT)
EPA-HQ-OPPT-2023-0376-0302	NYCO America, LLC
EPA-HQ-OPPT-2023-0376-0303	National Tribal Toxics Council (NTTC)
EPA-HQ-OPPT-2023-0376-0304	iGPS Logistics, LLC
EPA-HQ-OPPT-2023-0376-0305	Air-Conditioning, Heating, and Refrigeration Institute (AHRI)
EPA-HQ-OPPT-2023-0376-0306	Semiconductor Industry Association (SIA)
EPA-HQ-OPPT-2023-0376-0307	Alliance for Automotive Innovation
EPA-HQ-OPPT-2023-0376-0308	Association of Equipment Manufacturers (AEM)
EPA-HQ-OPPT-2023-0376-0309	American Coatings Association (ACA)
EPA-HQ-OPPT-2023-0376-0310	Consumer Technology Association (CTA)
EPA-HQ-OPPT-2023-0376-0311	Institute of Scrap Recycling Industries, Inc. (ISRI)
EPA-HQ-OPPT-2023-0376-0312	American Federation of Labor and Congress of Industrial Organizations (AFL-CIO)
EPA-HQ-OPPT-2023-0376-0313	The Yurok Tribe *et. al*.

Section 1 – General

Section 1.1 – History of this rulemaking

Comment: A product manufacturer/importer (0294) and a Tribal government (0313) generally discussed the history of the proposed rule. The Tribal government (0313) also asserted that the 2021 rules were woefully inadequate and violated the mandates in section 6(h)(4) of TSCA.

Response: *EPA appreciates the comment. EPA disagrees that the 2021 rules violated the requirements of TSCA section 6(h)(4). As EPA explained in the 2021 rulemaking, EPA takes seriously the charge given by Congress to take expedited action on PBT chemicals and the charge in TSCA section 6(h)(4) to "reduce exposures … to the extent practicable," taking into account the information available to it during that expedited rulemaking. Since issuance of the 2021 final rule, EPA has received additional information and reassessed some of the measures adopted in the 2021 final rules for decaBDE and PIP (3:1). In some cases, EPA is amending existing regulatory measures it adopted in 2021 that EPA subsequently learned were not practicable and, in other cases, EPA is adopting additional regulatory measures or amending existing regulatory measures that EPA learned are practicable to further reduce exposures to decaBDE or PIP (3:1). Each of those changes are discussed throughout the various sections of this RtC Document. More discussion on EPA's interpretation is provided below in response to more detailed comments.*

Comment: An industry trade organization (0305) stated that EPA correctly extended the compliance deadline on the prohibition of processing and distribution in commerce products and articles containing PIP (3:1) to October 31, 2024.

Response: *EPA previously amended 40 CFR 751.407(a)(iii) to extend the compliance deadline for the phase-out of the processing and distribution in commerce of PIP (3:1) for use in articles and PIP (3:1)-containing articles until October 31, 2024. This final rule further extends the deadline for certain articles, for example, PIP (3:1)-containing articles for use in manufacturing equipment and in semiconductor manufacturing but is not finalizing to further extend the existing October 31, 2024, compliance deadline for most other articles. These changes or decisions are further discussed below.*

Section 1.2 – Overview of TSCA section 6(h) and related requirements

Comment: Both the union (0312) and the Tribal government (0313) noted that Congress similarly directed the U.S. Occupational Safety and Health Administration (OSHA) to adopt standards that protect workers "to the extent feasible," and the commenters asserted that feasible and practicable are synonyms. The commenters stated that, as the Supreme Court wrote in describing "feasibility" under the Occupational Safety and Health Act (OSH Act), Congress defined the relationship between costs and benefits by placing the "benefit" of the worker's health above all other considerations, except those making attainment of this "benefit" unachievable. The commenters asserted that Congress struck this same balance in TSCA section 6(h). The Tribal government (0313) specifically stated that EPA lacks discretion to reweigh the benefits and costs of reducing PBT exposure by rejecting risk management measures based on judgements that they may be burdensome or exceed what industry has voluntarily implemented. The Tribal government asserted that, in both the 2021 rules and in the proposed amendments, EPA improperly interprets "practicable" to give EPA discretion to consider factors other than what is feasible or capable of being done, and EPA relies on this incorrect interpretation to reject restrictions to reduce exposure to decaBDE or PIP (3:1) that may be "costly" or "difficult." The commenter added that EPA explained that its interpretation of section 6(h)(4) was informed by what the Agency could consider during an expedited rulemaking process. The commenter asserted that EPA cannot

rely on the speed with which Congress directed EPA to regulate decaBDE and PIP (3:1) to excuse proposing regulations that fall short of adopting all exposure reductions that are possible.

Moreover, the union (0312) stated that TSCA section 6(a)(1) sets forth various prohibitions and other restrictions that EPA can impose to control exposures, and EPA is meant to factor in considerations listed in section 6(c) "to the extent practicable." The commenter added that Congress directed EPA to select among section 6(a)'s prohibitions and other restrictions when promulgating PBT risk management rules. The commenter remarked that, by excluding consideration of the section 6(c) factors, Congress clearly intended EPA to look only at whether reducing exposures was possible and not to consider EPA's views of "reasonableness." Finally, the union commented that this does not mean that considerations of technology and economics have no place in EPA's decision making. The union stated, however, that a regulation is "practicable" even if it pushes the boundaries of what industries can technologically or economically achieve and considerations of the economic or technological burdens on industry should not be weighed against the benefits.

Response: *EPA disagrees with commenters' interpretation of what EPA should consider in determining the best approach for determining which exposure reduction measures are practicable for TSCA section 6(h)(4) purposes. (i) First, EPA's approach is consistent with the dictionary definitions of the phrase "to the extent practicable" and the term "practicable," taking into account their plain meaning and the context of this provision in section 6 of TSCA.*

The phrase "reduce exposure … to the extent practicable" and the term "practicable" within that phrase are not defined in TSCA section 6(h). Nor is the phrase or term defined in any context in which it is used elsewhere in TSCA or the legislative history. Dictionary definitions of "practicable" include technical feasibility as well as characteristics relating to reasonableness and capacity. See, e.g., See Black's Law Dictionary (11th ed. 2019) (defining "practicable" as "reasonably capable of being accomplished; feasible in a particular situation"); Merriam-Webster.com, https://www.merriam-webster.com/dictionary/practicable (2024) (defining "practicable" as "capable of being put into practice or of being done or accomplished"). EPA's interpretation takes this plain language into account. S See, e.g., See Black's Law Dictionary (11th ed. 2019) (defining "practicable" as "reasonably capable of being accomplished; feasible in a particular situation"); Merriam-Webster.com, https://www.merriam-webster.com/dictionary/practicable (2024) (defining "practicable" as "capable of being put into practice or of being done or accomplished"). EPA's interpretation takes this plain language into account. See Advanced Energy United, Inc. v. FERC, 82 F.4th 1095, 1114 (D.C. Cir. 2023) (relying on the dictionary definition for the plain meaning); Wildwest Inst. v. Kurth, 855 F.3d 995, 1006 (9th Cir. 2017). EPA's interpretation also takes into consideration the statutory context for such terminology, including -the different standard and procedural approaches for a TSCA section 6(a) rule pursuant to TSCA section 6(h) rules and a TSCA section 6(a) rule following a risk evaluation pursuant to TSCA section 6(b)(4). See Pulsifer v. United States, 601 U.S. 124, 141 (2024). For example, EPA took into consideration:

(i) that TSCA section 6(h) compels an expedited TSCA section 6(a) rulemaking on the basis of persistence, bioaccumulation, and toxicity, characteristics identified in the 2014 WorkPlan update, where a TSCA section 6(b)(4) risk evaluation to support such rulemaking was neither required (TSCA section 6(h)(2)) nor achievable in the timeframe statutorily compelled for commencement or completion of such rulemaking; (ii) that other TSCA section 6(a) rulemakings are supported by a TSCA section 6(b)(4) risk evaluation to determine appropriate risk management measures, for example, with respect to replacement parts and articles, which Congress set aside for special consideration and risk-based findings (TSCA sections 6(c)(2)(D) and (E)) but did not address how best to apply such provisions to TSCA section 6(a)

rules pursuant to TSCA section 6(h); (iii) that TSCA expressly requires consideration of certain factors unrelated to technical feasibility, such as the reasonably ascertainable economic consequences of the rule (TSCA section 6(c)(2)(A)), and to take such factors into consideration when determining the TSCA section 6(a) prohibition or restriction to apply (TSCA section 6(c)(2)(B)); (iv) that TSCA requires EPA to consider the availability and economic and technical feasibility of alternatives to decide whether to prohibit or restrict in a manner that substantially prevents a specific conditions of use of a chemical (TSCA section 6(c)(2)(C)); and (v) that TSCA requires EPA to specify a timeframe for compliance that is as soon as practicable and provide a reasonable transition period (TSCA section 6(d)). Taking the plain language and context into account, EPA determined that the TSCA section 6(h)(4) mandate to issue a TSCA section 6(a) rule to "reduce exposure … to the extent practicable" requires consideration of all reasonably available information on TSCA sections 6(c)(2) and (d) concepts when determining which TSCA section 6(a) measures were "practicable."

(ii) Second, had technical feasibility alone been intended, as some commenters suggest, Congress could have used that language, but it did not. Yet, the regulatory considerations EPA must take into consideration when promulgating a TSCA section 6(a) rule expressly include reference to technical feasibility, clearly demonstrating Congress' ability to use those terms if intending a TSCA section 6(h) rule based on technical feasibility alone. See TSCA section 6(c)(2)(C).

(iii) Third, the term "practicable" is used in a variety of different statutes and rarely is it used to focus solely on technical feasibility, as suggested by some commenters. For example, in Union Neighbors United, Inc. v. Jewell, the United States Fish and Wildlife Service did not interpret the phrase "maximum extent practicable" as used in the Endangered Species Act (ESA) to refer to technical feasibility alone. In that case, the Court upheld the Service's decision that a more restrictive option was impracticable, based on a variety of factors unrelated to technical feasibility. 831 F.3d 564, 583-584 (D.C. Cir. 2016) (findings relating to lost revenues, reductions in clean energy, and fewer emission reductions were sufficient to reject the practicability of a more restrictive option to protect endangered Indiana bats); see also Motor Vehicle Mfrs. Assn. of United States, Inc. v. State Farm Mut. Auto. Ins. Co., 463 U.S. 29 (1983) (although the Court emphasized that safety was a preeminent factor in establishing "practicable" standards, the Court agreed that it was appropriate to consider costs); Michigan v. EPA, 135 S. Ct. 2699, 2711 (2015) (Court held that it was unreasonable for EPA to interpret ambiguous statutory standard "to mean that cost is irrelevant").

Thus, in sum, while EPA agrees, for example, that cost alone may not be an appropriate basis for finding it impracticable to adopt a regulatory option to reduce exposures, the best reading of the TSCA section 6(h)(4) statutory terms and context compels consideration of all reasonably available information on TSCA sections 6(c)(2) and (d) issues.

As a result, .while cost does factor into whether a regulatory option is practicable or the time frame for triggering a regulatory option is practicable, EPA also considers, for example, whether alternatives are generally available and what reasonable transition time is needed for identifying and adopting alternatives, the import of the products and articles containing decaBDE or PIP (3:1), and other regulations or voluntary standards that address articles under consideration, based on all available information before the Agency at the time of the decision. In the absence of clear direction from Congress, EPA may take these concerns into consideration in determining what further exposure reductions are practicable.

Comment: An industry trade organization (0307) asserted that, in the proposed rule, EPA continues to interpret TSCA section 6(c)(2)(D) and (E) to be inapplicable to TSCA section 6(h) rulemakings. The commenter stated that TSCA section 6(h) neither compels nor contemplates a risk evaluation to precede

or support regulatory action. The commenter remarked that, while they might question EPA's decision not to conduct a risk evaluation specifically for replacement parts and articles for PIP (3:1), the exclusions proposed in the rule allow for reasonable transition times to comply with EPA's risk management requirements. Finally, the commenter urged EPA to make it clear that this interpretation of TSCA section 6(h) applies only to the first 10 initial chemical substances subject to risk evaluation under the Lautenberg Chemical Safety Act. An industry trade organization (0288) reiterated the request from section E of their August letter that EPA allow an exclusion for replacement parts for articles as replacement parts are critical to keep equipment running for decades. The commenter also said that their request is consistent with Congress' directive in TSCA section 6(c)(2)(D) for EPA to consider exempting replacement parts for complex durable and consumer goods.

Response: *TSCA section 6(h) requires rulemaking only for chemicals identified on the 2014 Update to the TSCA Work Plan for Chemical Assessments and that meet the other criteria in TSCA section 6(h)(1)(A) and (B). The "first 10" chemicals selected for risk evaluation under TSCA section 6(b)(2)(A) are separate and distinct from the five chemicals identified as PBTs under TSCA section 6(h). There is no provision for additional uses of the TSCA section 6(h) authority. Other chemicals that might have similar characteristics but that do not meet the TSCA section 6(h)(1) findings would ultimately need to have a risk evaluation and an unreasonable risk determination before EPA could regulate the chemical under TSCA section 6(a). Thus, EPA's interpretation is in the context of TSCA section 6(h) and as a result EPA's interpretation will not be precedential for subsequent rulemaking actions unrelated to TSCA section 6(h) chemicals.*

As to TSCA section 6(c)(2)(D) and (E), there is a conflict between TSCA section 6(h) and other provisions of TSCA requiring a risk evaluation, such as TSCA sections 6(c)(2)(D) and 6(c)(2)(E). TSCA section 6(h) instead refers generally to issuing rules "under subsection (a)," and that subsection requires issuance of rules "in accordance with subsection (c)(2)." The standard TSCA section 6(a) rulemaking requires a risk evaluation under TSCA section 6(b), and the provisions of TSCA sections 6(c)(2)(D) and 6(c)(2)(E) likewise specifically require a risk evaluation conducted under 6(b)(4)(A). But neither is required or presumed under TSCA section 6(h). Rather, TSCA section 6(h)(2) states that no risk evaluation is required for chemicals meeting the TSCA section 6(h)(1) criteria and given that TSCA sections 6(h)(1) and (3) require commencement and issuance of expedited TSCA section 6(a) proposed and final rules for TSCA section 6(h) PBT chemicals, respectively, no risk evaluation could be conducted within the statutory deadlines provided. In addition, TSCA section 6(h) requires that the final rule "reduce exposure … to the extent practicable," a finding unrelated to the 'unreasonable risk" standard for TSCA section 6(a) rules generally. EPA believes the best reading of these conflicting TSCA provisions is that Congress did not intend TSCA sections 6(c)(2)(D) and 6(c)(2)(E) to apply directly to TSCA section 6(a) rulemakings issued pursuant to TSCA section 6(h), but that EPA consider the relative concerns of those provisions when interpretating the TSCA section 6(h)(4) standard for rulemaking and when applying that interpretation. For example, in determining the regulatory measures to "reduce exposure … to the extent practicable" EPA considers the relative concern with availability of replacement parts for complex consumer and durable goods already in commerce by taking into account reasonably available information to provide compliance approaches that would allow, among other things, reasonable transition times to adopt alternatives for use in component parts.

Comment: A Tribal government (0303) questioned how Tribes, PESS, and the general public can be expected to provide data or share an understanding of exposures and impacts when the Agency itself has no formal plan to acquire data. The commenter argued that EPA could acquire the monitoring and hazard data necessary to inform risk management actions by using TSCA's data gathering authorities, or integrate the Office of Research and Development and Office of Water resources into developing data on

exposure pathways to TSCA chemicals.

Response: *EPA did not use its authorities under TSCA to acquire monitoring and hazard data. The timeframes for such activities would have exceeded the timeframes provided by Congress to promulgate rules under TSCA section 6(h). As discussed in the 2023 PBT proposed rule, EPA did develop use and hazard documentation that informed its PBT rulemakings. Additional data development by EPA's Office of Research and Development or Office of Water would have exceeded timeframes considered for promulgating section 6(h) rules.*

Section 2 – Proposed and alternative regulatory actions

Section 2.1 – Activities EPA did not propose to be addressed in this rulemaking

Comment: An industry trade organization (0286) remarked that both decaBDE and PIP (3:1) have endpoints that include landfills that must have the required design and build-out, which includes leachate collection, groundwater monitoring, and corrective action. The commenter asserted that the Resource Conservation and Recovery Act (RCRA) protections for groundwater must be enforced to ensure that communities that rely on groundwater have a safe sustainable water supply and can avoid the expense of remediation.

Response: *Regulations promulgated under the authority of the Resource Conservation and Recovery Act (RCRA) govern the disposal of hazardous and non-hazardous wastes. DecaBDE and PIP (3:1) are subject to the requirements applicable to solid waste under Subtitle D of RCRA, which means there is a general prohibition on open dumping (which includes a prohibition on open burning). Wastes containing this chemical that do not otherwise meet the criteria for hazardous waste would be disposed of in municipal solid waste landfills (MSWLFs), industrial nonhazardous, or, in a few instances construction/demolition landfills. Non-hazardous solid waste is regulated under Subtitle D of RCRA, and states play a lead role in ensuring that the federal requirements are met. As the commenter mentions, the requirements for MSWLFs include location restrictions, composite liners, leachate collection and removal systems, operating practices, groundwater monitoring, closure and post-closure care, corrective action provisions, and financial assurance. Industrial waste (non-hazardous) landfills and construction/demolition waste landfills are primarily regulated under state regulatory programs, and in addition they must meet the criteria set forth in federal regulations, which may include requirements such as siting, groundwater monitoring and corrective action depending upon what types of waste are accepted.*

Comment: Two industry trade organizations (0297, 0311) and a product distributor (0304) expressed support for EPA's efforts to encourage the continued use and recycling of articles that contain decaBDE. An industry trade organization (0311) specifically expressed support for the current exclusions for recycling and reuse activities under 40 CFR 751.405 for decaBDE and 40 CFR 751.407 for PIP (3:1). Moreover, an industry trade organization (0297) asserted that the continued use and recycling of articles that contain decaBDE avoids the unintentional consequence of a prohibition on decaBDE-containing articles leading to unnecessary disposal and environmental loading, where reuse and recycling could occur instead.

In addition, a product distributor (0304) stated that EPA's efforts to permit the continued use and recycling of articles that contain decaBDE are consistent with EPA's obligations under the Pollution Prevention Act of 1990. Moreover, the commenter expressed that the current terms of the decaBDE rule are critical to permitting the continued use of the commenter's fleet of shipping pallets, the free

movement of its existing pallets throughout commerce, and the recycling and reformation of decommissioned plastic pallets into new, usable pallets.

Response: *EPA thanks the commenters for their support of these aspects of the proposed rule.*

Comment: A Tribal government (0313) expressed that EPA's failure to regulate the recycling of plastics containing decaBDE or PIP (3:1) violates TSCA. The commenter stated that the proposed amendments double down on the unlawful exclusions in the 2021 rules, despite EPA receiving substantial comments in 2021 and 2023 underscoring the need to amend the risk management rules to reduce recycling-related exposures. The commenter expressed that this violates TSCA and will perpetuate exposure to the PBT chemicals for workers, other higher-risk populations, the general population, and wildlife for years to come. The commenter asserted that EPA must modify the proposed amendments to address the risks of injury to health or the environment presented by decaBDE or PIP (3:1) from the recycling of plastics containing those chemicals and reduce exposure associated with recycling to the extent practicable. The commenter added that EPA has justified its exclusions by claiming that any TSCA regulation on the recycling of decaBDE- or PIP (3:1)-containing plastics would be prohibitively expensive and not cost effective, and the Tribal government stated that TSCA section 6(h) does not permit EPA to reject exposure-reduction measures on that basis. Additionally, the commenter remarked that EPA has no answer to the evidence in the record that there are a variety of cheap, simple methods for identifying and sorting plastics containing decaBDE and other brominated flame retardants to separate those materials from the recycling stream. The commenter expressed that it is not credible for EPA to claim that there are no practicable restrictions that EPA could adopt for recycling of plastics containing decaBDE or PIP (3:1), particularly in light of such restrictions having been adopted in the European Union and the United Kingdom. The commenter urged EPA to, at a minimum, adopt restrictions, such as concentration limits, during the recycling of materials in specific waste streams that are known to contain high concentrations of decaBDE, such as electronic waste, construction and demolition waste, and end-of-life vehicles. Another Tribal government (0303) recommended that EPA use its authority to regulate all recycling activities that involve decaBDE and PIP (3:1) in articles.

Response: *In the 2021 rulemaking, EPA excluded activities from regulation based on EPA's determination that there were no further exposure reductions for those activities that it would be practicable to take at that time. EPA explained in 2021 that the only options to reduce exposure to decaBDE and PIP (3:1) in plastics that are being recycled would be to prohibit plastics recycling generally or to require testing of the incoming plastic stream to determine whether decaBDE or PIP (3:1) is present and prohibit recycling of those materials. As discussed in the 2021 rulemaking, EPA explained that neither of these options was practicable and, as stated in the 2023 proposed rule, EPA did not reevaluate the practicability of further exposure reductions relating to a prohibition of, or further regulatory restrictions on, the general recycling of decaBDE- and PIP (3:1)-containing plastic in the United States at this time. See the final rule, Unit III.B.*

Comment: A Tribal government (0313) asserted that EPA's failure to regulate disposal of decaBDE, PIP (3:1), and articles containing those chemicals violates TSCA. The commenter noted that EPA failed to even consider amendments to the 2021 rules to address the risks and reduce exposures associated with disposal. The commenter stated that EPA expressed that subtitle D of the RCRA adequately regulates disposal of solid waste containing the chemicals, it would be impracticable to establish an entirely new disposal program, and treating wastes containing these chemicals like hazardous wastes would have impacts on hazardous waste management capacity and the resources of State and local governments and industry. The commenter asserted that none of these justifications passes under section 6(h)(4) of TSCA. The commenter further stated that the existence of other statutory and regulatory schemes that may

regulate wastes containing decaBDE or PIP (3:1) in some fashion does not release EPA from its obligation to adopt amendments to its TSCA section 6(h) rules. The commenter cited to a recent EPA statement in another TSCA rule in support of this argument: "the mere existence of authority to assess or regulate a chemical, exposure pathway, or use under a statute other than TSCA does not equate to effective risk management of that chemical, exposure pathway or use, and an assumption that risk will—or could be—managed in the future cannot be used to satisfy the Agency's statutory obligations to . . . manage identified risks" In this case, commenters are referring to the rulemaking titled Proposed Rule, Procedures for Chemical Risk Evaluation Under the Toxic Substances Control Act, 88 Fed. Reg. 74,292, 74,300 (Oct. 30, 2023). Moreover, the commenter remarked that EPA's assertion that there are no practicable measures to reduce disposal-related exposures is not credible. The Tribal government asserted that it is unacceptable and contrary to Congress's intent for EPA to refuse to address these exposures and the serious risks they pose. Another Tribal government (0303) recommended that EPA use its authority to regulate all disposal activities that involve decaBDE and PIP (3:1) in articles.

Response: *As EPA explained in the 2023 proposed rule, EPA did not propose to change the 2021 decision not to use its TSCA 6(a) authorities to establish a TSCA regulatory program for disposal of decaBDE or PIP (3:1). EPA did not propose such a program and is not finalizing the suggestions made by commenters at this time. EPA remains concerned that developing a new comprehensive regulation for disposal of decaBDE and PIP (3:1) under TSCA section 6(h)(4), in addition to the existing requirements under RCRA (e.g., those for non-hazardous solid waste, industrial waste), is not practicable. As explained in the 2021 rulemaking, treating nonhazardous waste containing the PBT chemicals that are not listed wastes under RCRA as if they were hazardous waste would have impacts on hazardous waste disposal capacity and be very expensive for states and local governments as well as for affected industries. For more discussion on this issue, see the 2021 PBT final rules (86 FR 880, 86 FR 866, 86 FR 894, 86 FR 911, 86 FR 922).*

EPA's statements in the rulemaking relating to procedures for risk evaluation in no way contradict EPA's conclusions in the 2021 rulemaking. The risk evaluation rulemaking is relevant to the assessment of chemicals in risk evaluations and the Agency's obligations in that context.

Comment: The commenter (0313) also mentions that Alaska promotes waste burning at rural landfills in non-incinerator structures such as burn cages, which leads to environmental releases of PBDEs and other POPs produced by incomplete incineration, that RCRA gives EPA no authority to regulate any other type of nonhazardous solid waste beyond that disposed in municipal solid waste landfills, that RCRA establishes no standards for municipal solid waste transfer stations, which are utilized in many rural and Tribal communities and often allow placement of waste directly on the ground and in open dumpsters, and that RCRA also contains numerous exemptions, including for landfills that affect Tribal and indigenous communities in Alaska. 42 U.S.C. § 6949a(c)(5).

Response: *As explained above, EPA did not propose a disposal program under TSCA and is not finalizing disposal regulations at this time. In the 2021 rulemaking, EPA addressed similar comments. For more details, please see EPA-HQ-OPPT-2021-0202-0170. As explained in that rulemaking, non-hazardous solid waste is regulated under Subtitle D of RCRA, and states play a lead role in ensuring that the federal requirements are met. The requirements for MSWLFs include location restrictions, composite liners, leachate collection and removal systems, operating practices, groundwater monitoring, closure and post-closure care, corrective action provisions, and financial assurance. Industrial waste (non-hazardous) landfills and construction/demolition waste landfills are primarily regulated under state regulatory programs, and in addition they must meet the criteria set forth in federal regulations, which*

may include requirements such as siting, groundwater monitoring and corrective action depending upon what types of waste are accepted.

Comment: An industry trade organization (0299) expressed support for EPA's decision not to regulate the commercial use of products or articles containing PBT chemicals. The commenter asserted that virtually every commercial nuclear power reactor unit in the operating fleet likely contains hundreds of miles of decaBDE-containing cable and wire and several thousand decaBDE-containing components. The commenter stated that this is vital to safety systems that prevent the release of radioactive materials into the environment. The commenter added that requiring removal and replacement of those cables and components would both result in significant economic impacts and would negatively impact the risk profile of facilities. The commenter expressed that EPA's current approach to commercial use avoids these outcomes and is fully consistent with the requirements of TSCA. The commenter remarked that the current regulation allows the continued commercial use of decaBDE-containing products or articles that have been lawfully acquired by an end user.

Response: *EPA agrees with the commenter that current regulations at 40 CFR 751.405 and the regulations adopted in this rulemaking do not prohibit the continued commercial use of decaBDE-containing products or articles. However, the requirements will impact the amount of decaBDE that will be manufactured, processed, distributed in commerce, used or disposed, thus reducing the exposures to humans and the environment from those activities prohibited.*

Section 2.2 – DecaBDE - proposed revisions to 40 CFR 751.405

Section 2.2.1 - Label existing plastic shipping pallets that contain decaBDE

Comment: The distributor of rental shipping pallets referenced in the proposed rule (0304) wrote in opposition to the pallet labeling requirement and provided feedback on several assumptions made in the proposed rule regarding its operations. Contrary to the preamble of the proposed rule, the commenter stated that it does not apply or replace labels on its pallets as part of its current operations. Additionally, the commenter stated that it does not currently have a method to distinguish pallets containing decaBDE from newer pallets. The commenter (0304) noted several practical challenges in implementing the proposed rule. According to the commenter, it would be forced to chemically test each pallet, which would be both time-consuming and costly. The commenter described its expectation that the proposed labels would need to be re-applied annually, citing its prior experience using adhesive labels. Furthermore, the commenter noted that much of the commenter's inventory is not in its possession for long periods of time. The commenter estimated that it handles only 20 percent of its inventory in a given year, therefore, it will not be capable of maintaining the labels.

Finally, the commenter (0304) objected to the proposed labeling requirement because the requirement would arbitrarily and unreasonably distinguish the commenter's pallets from similar products in the marketplace. The commenter stated that the labeling may be interpreted by customers to mean that its pallets pose a danger in everyday use, not limited to recycling processes. The commenter concluded that this would create an undue burden on the commenter compared to other companies that sell plastic pallets for single use without the intent to recycle them. Additionally, the commenter stated that the labeling of pallets is arbitrary as other decaBDE-containing articles would not require labeling. The commenter concluded by suggesting that workplace controls would be more effective than labeling and offered to provide digital communications with its customers to inform them of proper handling of its products.

Response: *EPA agrees that labeling plastic shipping pallets is not practicable based on the commenter's points (i.e., labels would need to be re-applied annually; testing is time-consuming and costly; there is*

potential for misinterpretation by customers to mean that the pallets pose a danger in everyday use) and information from a stakeholder meeting during the public comment period (EPA-HQ-OPPT-2023-0376-0314). In addition, the purpose of the label requirement in the proposed rule was to provide notice that PPE is required during the recycling of plastic shipping pallets contain decaBDE. The proposed label would only be seen, if at all, during the initial step of recycling and the disassembly of the pallet. Since exposure to decaBDE in plastic shipping pallets that are in use and moving throughout commerce is not expected and the commenter indicated that the labels would likely not be present at the time of recycling, EPA is not finalizing the labeling requirement for plastic shipping pallets. To reduce potential exposures to decaBDE to the extent practicable during the processing, i.e., recycling, of plastic shipping pallets that contain decaBDE, EPA is instead finalizing a signage requirement in the regulated area. This sign will provide notice to workers that PPE is required to be worn during the recycling of existing plastic shipping pallets that contain decaBDE, which will reduce potential exposures to decaBDE. See the final rule for more information on specific PPE requirements.

Comment: An industry trade organization (0311) stated that the labeling requirement is much more expansive than its justification and arguably requires redundant labeling activity due to the proposed language referring to "all persons," requiring labeling of both unlabeled and labeled pallets. Thus, according to the commenter, the proposed rule could be interpreted to require recyclers to affix a label to decaBDE-containing pallets prior to recycling. The commenter stated that recyclers are not equipped to determine whether an unlabeled pallet contains decaBDE and that placing a label on a pallet immediately prior to recycling it would be unnecessary.

Response: *EPA thanks the commenter for raising the potential inconsistency between the stated justification for the proposed labeling requirement and the scope of the proposed regulatory language. After considering public comments received on the proposal, EPA is not finalizing the labeling requirement for plastic shipping pallets and is instead finalizing a signage requirement in the regulated area, defined at 40 CFR 751.403 as "an area established by the regulated entity to demarcate areas where airborne concentrations of a specific chemical substance can reasonably be expected." This definition is intended to include those areas where plastic pallets are recycled. This sign will provide notice to workers that PPE is required to be worn during the recycling of plastic shipping pallets that contain decaBDE, which will reduce potential exposures to decaBDE. As EPA explained in its proposed rule, EPA did not propose to adopt requirements on recycling operations generally and is not adopting such regulations as requested by commenters. Due to the difficulty in identifying whether and where decaBDE is present in an article, EPA maintains that it would be impracticable to establish a prohibitively expensive and complicated testing program to determine whether decaBDE is present and to separate decaBDE-containing plastics from other types of plastic before recycling, which is usually done manually. At the time of the proposed rule, EPA determined it was practicable to label existing plastic shipping pallets containing decaBDE because all plastic shipping pallets that contain decaBDE are owned by a single company and EPA did not propose testing requirements to determine whether decaBDE is present in those plastic shipping pallets. EPA contends that it would be difficult to make plastic sorting for this purpose to be cost-effective, and that it would be overly burdensome and not practicable to prohibit the recycling of decaBDE-containing plastic in the United States.*

Comment: An industry trade organization (0292) offered support for informative labels on pallets that contain decaBDE but objected to the PPE requirement. A Tribal government (0313) also expressed support for the proposed labeling requirement but urged EPA to expand the mandate to "all new or recycled products and articles that contain decaBDE." The commenter predicted that decaBDE's presence in disposal and recycling operations will increase as articles reach the end of their lifespans and pointed out that a cheap, reliable, and rapid analysis already exists that can identify if plastic storage frames

contain decaBDE and remove them from the supply chain.

Response: *After considering public comments received on the proposal, EPA is not finalizing the labeling requirement for plastic shipping pallets and is instead finalizing a signage requirement in the regulated area. This sign will provide notice to workers that PPE is required to be worn during the processing of existing plastic shipping pallets that contain decaBDE, which will reduce potential exposures to decaBDE. EPA disagrees with the commenters that a cheap, reliable, and rapid analytical method to identify decaBDE is readily available. As stated in the 2021 decaBDE final rule, most testing methods that are readily available cannot easily distinguish between brominated flame retardants, or between polybrominated diphenyl ether (PBDE) congeners, and are time-consuming and thus costly. EPA presumes that requiring timely and significant analytical tests for decaBDE-containing articles would be overly burdensome.*

Comment: A Tribal government (0313) recommended that EPA adopt plain language for the label, which would be interpretable by a general audience.

Response: *After considering public comments received on the proposal, EPA is not finalizing the labeling requirement for plastic shipping pallets and is instead finalizing a signage requirement in the regulated area. This signage will provide notice to workers that PPE is required to be worn during the recycling of existing plastic shipping pallets that contain decaBDE. 40 CFR 751.405(d) requires the sign to be clearly and prominently posted at every entry point into the regulated area and to be in multiple languages as appropriate and in an easily readable font size.*

Section 2.2.2 - Require use of PPE for certain activities involving decaBDE

Comment: A labor union (0312) stated that EPA should modify the text of 40 CFR 751.405(e) to make clear that owners and operators are responsible for ensuring that PPE is provided and worn during the process of recycling. An industry trade organization (0292) recommended removing the following text: "All persons who recycle or process this pallet are required to wear personal protective equipment, per regulations at 40 CFR 751.405(e)."

Response*: EPA appreciates the comments regarding what is covered and excluded under the worker protection provisions of this rule. 40 CFR 75.405(e) requires worker protection measures during the processing of plastic shipping pallets that contain decaBDE. Recycling of all other decaBDE-containing plastic from products or articles and decaBDE-containing products or articles made from such recycled plastic is excluded. EPA is modifying the exclusion regulatory text in new 40 CFR 751.405(e)(6) to say "recycling of decaBDE-containing plastic…" instead of "processing for recycling of decaBDE-containing plastic" to make clear that the recycling of decaBDE-containing pallets is not excluded from these worker protection provisions. EPA is also making minor modifications to 40 CFR 751.405(b) clarifying that processing of decaBDE for recycling was not excluded.*

Comment: A labor union (0312) stated that PPE is the lowest form of protection in the hierarchy of controls. The commenter raised that there is nothing in the proposed regulatory text that requires owners/operators to evaluate the exposures in their workplaces and implement controls according to the hierarchy, despite language in the preamble that EPA is implementing controls according to the hierarchy of controls. The commenter states that EPA must strengthen the workplace provisions by explicitly requiring any owner or operator of a workplace with potential PBT exposures to implement protections along the lines of the workplace chemical protection programs that EPA has proposed for its other risk management rules. An industry trade organization (0292) stated that EPA should not prescribe PPE requirements and that the decision on whether to implement PPE controls should be left to industrial hygiene staff with specific knowledge of the worksite.

Response: *While EPA recognizes the concerns raised by commenters, EPA does not believe that a workplace chemical protection program (WCPP) similar that proposed for other TSCA section 6(a) risk management rules following a risk evaluation is 'practicable' for a TSCA section 6(h) rule. EPA is not confident that it can develop an ECEL, as developed for other TSCA section 6(a) rulemakings, for these two chemicals without a risk evaluation, which was neither required nor feasible given the statutory timeline for promulgation of rules under TSCA 6(h). Therefore, EPA has decided not to finalize a requirement to implement controls based on the hierarchy of controls in the absence of an ECEL, and instead is finalizing prescriptive PPE requirements where exposure can reasonably be expected. The requirement to supply PPE is limited to the regulated area, which must be established where "airborne concentrations of a specific chemical substance can reasonably be expected." 40 CFR 751.403, 751.405(e)(2), 751.407(f)(2). The establishment of the regulated area provides flexibility to owners/operators to first utilize one or a combination of elimination, substitution, engineering controls or administrative controls to reduce or eliminate the necessity to demarcate a regulated area by eliminating any areas where exposure can "reasonably be expected." If exposure to the chemical is no longer reasonably expected due to use of one or more of these controls, the owner/operator would not be required to establish a regulated area and the requirement to supply PPE to potentially exposed persons under 40 CFR 751.405(e) and 751.407(f) for decaBDE and PIP (3:1), respectively, would not apply. EPA also requires the owner/operator to keep records of the basis for the regulated area, including monitoring data and documentation of any controls or combination of controls that have reduced exposure to where airborne concentrations of decaBDE or PIP (3:1) can no longer reasonably be expected resulting in a smaller or no regulated area being established. The workplace requirements for decaBDE and PIP (3:1) were developed based on stakeholder comments, existing industry practices, and OSHA-required Safety Data Sheets.*

Comment: An industry trade organization (0297) argued that EPA did not make an affirmative finding that exposures to workers are reasonably likely to occur from the regulated activities involving decaBDE. The commenter recommended that EPA limit the PPE requirement to activities that are likely to generate airborne dusts and or physical debris.

Response: *As described in the 2021 decaBDE final rule, EPA prepared an exposure and use assessment for decaBDE that took into consideration information from industry submitted as comments in response to multiple stages of the 2021 rulemaking. This information supported EPA's finding under TSCA section 6(h)(1)(B) that decaBDE meets the TSCA section 6(h)(1)(A) criteria and that, based on EPA's Exposure and Use Assessment and other reasonably available information, exposure to decaBDE is likely under the conditions of use to the general population, to a potentially exposed or susceptible subpopulation, or the environment. As explained in the 2021 rulemaking, reference to use or condition of use is only used in TSCA section 6(h) in the context of the TSCA section 6(h)(1)(B) finding relating to likely exposures under the "conditions of use" to "the general population or to a potentially exposed or susceptible subpopulation … or the environment." In contrast to the risk evaluation process under TSCA section 6(b), this TSCA section 6(h)(1)(B) threshold criterion is triggered only through an Exposure and Use Assessment regarding the likelihood of exposure to the chemical. To trigger the rulemaking requirement, the TSCA section 6(h)(1)(B) finding is required for at least one or more use activities where some exposure is likely. Notably, the "reduce exposure" standard in TSCA section 6(h)(4) does not require reducing exposures only from use activities identified in the Exposure and Use Assessment and for which the TSCA section 6(h)(1)(B) finding was made. Rather, based on the plain language of TSCA section 6(h)(4), once the TSCA sections TSCA section 6(h)(1)(A) and 6(h)(1)(B) findings are made for a chemical, which was done as part of the 2021 rulemaking, the obligation to "reduce exposures … to the extent practicable" applies to "the chemical" broadly, not solely to the chemical activities discussed in the Exposure and Use Assessment or for which the TSCA section 6(h)(1)(B) finding was made. Thus, to*

the extent that commenters suggest a new TSCA section 6(h)(1)(B) finding must be made or that the TSCA section 6(h)(1)(B) finding must be specific to a regulated field, EPA disagrees.

In preparation of this 2024 rulemaking, EPA focused its assessment of regulatory controls on known activities involving decaBDE and where exposure potential was further identified in additional EPA prepared exposure assessments (including those prepared by EPA with industry-supplied information as part of the Voluntary Children's Chemical Evaluation Program), the National Academy of Sciences, and international governments. In addition to EPA's Exposure and Use Assessment, these assessments describe exposure potential for polybrominated diphenyl ethers (PBDEs), including decaBDE, by occupational workers through a variety of pathways such as via dust ingestion, dust inhalation, and dermal contact with dust. After collecting additional information on industry use of PPE during permitted ongoing activities involving decaBDE, EPA is finalizing worker protection requirements to address that potential for exposure. These final protections will generally be required for certain ongoing activities involving decaBDE that are listed at 40 CFR 751.405(a)(2) and 751.405(b).

In response to the commenter's recommendation that EPA limit the PPE requirement to activities that are likely to generate airborne dusts and or physical debris, EPA does not generally disagree. The requirement to supply PPE is limited to the regulated area, which must be established where "airborne concentrations or direct dermal contact of a specific chemical substance can reasonably be expected." 40 CFR 751.403. The establishment of the regulated area provides flexibility to owners/operators to first utilize one or a combination of elimination, substitution, engineering controls or administrative controls to reduce or eliminate the necessity to demarcate a regulated area by eliminating any areas where exposure can "reasonably be expected." If exposure to the chemical is no longer reasonably expected due to these controls, the owner/operator would not be required to establish a regulated area and the requirement to supply PPE under 40 CFR 751.405(e) for decaBDE would not apply. EPA also requires the owner/operator to keep records of the basis for the regulated area, including monitoring data and documentation of any controls or combination of controls that have reduced exposure to where airborne concentrations of decaBDE or PIP (3:1) can no longer reasonably be expected resulting in a smaller or no regulated area being established.

Comment: An industry trade organization (0297) and a product distributor (0304) suggested that where dermal protection is required, EPA should clarify that gloves need not be chemically impermeable if decaBDE is present only in solid form. Finally, the commenter recommended that when N95 masks are used for respiratory protection, EPA should require only qualitative fit testing.

Response: *In response to the commenter's request for clarification, when dermal protections are required under 40 CFR 751.405(e)(2)(v) and (4), gloves must be chemically resistant to decaBDE with activity-specific training where dermal contact with decaBDE is possible, regardless of whether decaBDE is present only in solid form. In addition, the final rule does not specify whether fit testing must be qualitative or quantitative, but references the provisions outlined in 29 CFR 1910.134(f) where "fit testing" is defined as "the use of a protocol to qualitatively or quantitatively evaluate the fit of a respirator on an individual."*

Comment: A product distributor (0304) stated that it would support the proposed PPE requirements if they were applied universally. The commenter explained that, in its interpretation of the proposed rule, the PPE requirements for recycling decaBDE-containing articles would apply only to plastic pallets. As the sole plastic shipping pallet renting and recycling operation, the commenter argued that EPA had singled it out when imposing regulations. The commenter suggested that the rule should apply to all recycling operations that process materials containing decaBDE or PIP (3:1).

Response: *EPA acknowledges the commenter's suggestion. As noted in the proposed rule, EPA did not reevaluate the practicability of further exposure reductions relating to a prohibition of, or further*

regulatory restrictions on, the general recycling of decaBDE- and PIP (3:1)-containing plastic in the United States at this time. 88 Fed. Reg at 88296. EPA is not adopting new requirements relating to general recycling of decaBDE- and PIP (3:1)-containing plastic at this time.

Comment: An industry trade organization (0299) argued in favor of EPA's decision not to require PPE for processing decaBDE-containing wire and cable for nuclear power generating stations. Stating that these facilities already employ extensive workplace protections, and that distribution poses little exposure risk, the commenter stated that additional requirements would not be beneficial. An industry trade organization (0307) offered support for the proposed PPE requirement exemptions proposed for distribution and import of decaBDE or decaBDE-containing products or articles.

A product manufacturer/importer (0294) expressed their opposition to the exemption for PPE requirements in processing of wire and cable for nuclear facilities. The commenter commented on EPA's assumption that the cured coating of these articles effectively isolates the chemical. According to the commenter, compounding decaBDE into rubber and plastic materials does encapsulate the chemical. However, due to the higher flammability of the insulation used in wire and cable for nuclear power generating stations, cross-linked polyethylene, requires higher concentrations of decaBDE (20–30%) compared to concentrations (5–10%) used in more common halogenated rubber such as chlorinated polyethylene or chlorosulfonated polyethylene. This higher concentration forces the chemical to the surface of the material and according to the commenter this is widely known in the industry. For this reason, the commenter recommended EPA maintain PPE requirements for decaBDE-containing wire and cable for nuclear power generating stations. Additionally, this commenter noted that "given the alternatives currently available, we question the extension and request that EPA establish a robust tracking system to ensure suppliers are diligently working towards qualified alternatives if operating under the EPA's enforcement discretion statement."

Response: *EPA thanks commenter for their support, as well as the additional information provided in disagreement with EPA's proposed regulations related to worker protection exclusions for processing of decaBDE-containing wire and cable for nuclear power generation facilities. EPA acknowledges the commenters' concerns; however, after additional consultation with the nuclear industry and governmental agencies, EPA disagrees with the comment that PPE should be required for processing of existing wire and cable containing decaBDE. EPA's "Exposure and Use Assessment of Five Persistent, Bioaccumulative, and Toxic Chemicals" notes that releases of decaBDE could occur during the processing of decaBDE to make the wire and cable. However, once the wire and cable are formulated, decaBDE is encased in the cured coating and the potential for worker exposure is minimal, including in connection with any further processing. EPA is also noting that processing and distribution in commerce of decaBDE for use in wire and cable insulation in nuclear power generation facilities is now prohibited, as the deadline for the phase out has passed (see 40 CFR 751.405(a)(2)(ii)).*

Lastly, EPA's Enforcement Statement no longer applies, therefore there is no need to establish a tracking system. Regulated entities are subject to this final rule.

Comment: An industry trade organization (0311) provided recommendations for the language at the beginning of 40 CFR 751.405(e)(7). The commenter recommended that the phrase, "Exclusions. The following are not subject to the provision of paragraph (e) of this section:" should be replaced with "Exclusions. The following are not subject to the workplace protection requirements of paragraph (e) of this section:". According to the commenter, this would accurately reflect the multiple provisions introduced in this section and clarify the provisions to which the exemptions apply.

Response: *EPA appreciates the commenter for their suggestion and has accepted this suggested text change in the final rule. Note that the location for this provision is 40 CFR 751.405(e)(6).*

Section 2.2.3 - Prohibit the release to water during the manufacturing, processing, and distributing decaBDE or decaBDE-containing products

Comment: A nongovernmental organization (0286) supported EPA's proposal to restrict water releases. The commenter stated that the proposed rule is a step towards taking a holistic approach and proactive protection of drinking water supply.

Response: *EPA thanks commenters for their support.*

Comment: An industry trade organization (0292) recommended that EPA modify its restrictions on water release, claiming that the proposed prohibition is excessive and beyond the statutory authority granted by TSCA. The commenter cites declining production volumes for decaBDE and states that a complete prohibition on releases to water is excessive and counter to the statutory requirements under TSCA section 6(h)(4) and that EPA should only limit to quantities that pose no significant risk. This commenter believes that "minimal emissions of decaBDE to water may not pose significant risks and EPA should provide flexibility to those few remaining critical users."

Response: *EPA disagrees with the commenter. As EPA explained in the 2021 rulemaking, EPA takes a whole chemical approach in implementation of the TSCA section 6(h)(4) "reduce exposure" standard by broadly addressing any activity for the chemical substance, unless EPA determined that doing so would not be practicable. Here, it is EPA's understanding that releases of decaBDE to water during the manufacturing, processing, and distribution in commerce of decaBDE or decaBDE-containing products are not occurring, and therefore believes prohibiting the release to water is practicable. This operates as an anti-backsliding approach, thus preventing the return of past activities that might result in releases of decaBDE to water.*

Comment: A Tribal government (0303) listed additional sources of potential decaBDE release into the environment such as landfills and wastewater treatment plants. The commenter suggested that EPA expand the water release provisions to wastewater treatment plants, landfills, and other sites, and urged EPA to consider additional regulatory measures to limit these potential exposures to potentially exposed or susceptible subpopulations (PESS) and the environment. Another commenter (0313) agreed, rejecting EPA's assumption that no decaBDE releases are occurring.

Response: *EPA only proposed to prohibit releases to water during the manufacturing, processing, or distribution in commerce of decaBDE and decaBDE-containing products. As stated above, EPA did not propose to address any other disposal activities such as landfilling and is not addressing such disposal activities at this time. See 88 Fed. Reg. at 82296. The prohibition on the release to water during the manufacturing, processing, and distribution in commerce of decaBDE and decaBDE-containing products prevents direct releases to water. Thus, only those facilities that are manufacturing, processing, and/or distributing in commerce decaBDE and decaBDE-containing products, including wastewater treatment plants that engage in those activities, are subject to the prohibition on releases to water. As a factual matter, decaBDE is no longer manufactured in the United States and there are only a few sites where ongoing processing of decaBDE occurs that are required to report to TRI and those sites transfer decaBDE-containing waste offsite, the majority of which goes to landfills, not wastewater treatment plants. Other destinations for waste streams are recycling and energy recovery, see EPA's TRI website for additional information. Thus, as noted above, it is EPA's understanding that releases of decaBDE to water during the manufacturing, processing, and distribution in commerce of decaBDE or decaBDE-containing products are not occurring, and this prohibition is effectively an anti-backsliding provision. Moreover, as explained in the 2021 PBT final rules (86 FR 880, 86 FR 866, 86 FR 894, 86 FR 911, 86 FR 922), EPA presumes that broadly prohibiting or restricting manufacturing, processing, and distribution*

in commerce of decaBDE and decaBDE-containing products, except in those cases where doing so is not practicable at this time, will result in an overall reduction of decaBDE in waste streams and thus a reduction in overall distribution of decaBDE for waste management, including at a wastewater treatment plant. As mentioned in the final rule, TRI reporting is required only for facilities within specific North American Industry Classification System codes who have 10 or more full-time employees, so it is possible that there were releases outside of the reporting requirements, but EPA understands this is unlikely given the broad prohibitions in place.

Comment: A commenter (0297) also suggested the clause concerning "best management practices" be removed. The commenter went on to explain that even if EPA did identify such practices, EPA would be making the compliance with an unknown and unspecified "best management practice" a regulatory requirement, which is problematic due to its lack of specificity and the opportunity it creates for arbitrary standards for interpretation and enforcement.

Response: *EPA thanks the commenter and is not finalizing the clause "best management practices" in the final rule restrictions on the release of decaBDE and decaBDE-containing products to water. In the proposal, EPA requested comments on additional details of how a prohibition on releases to water could best be achieved through best management practices, such as engineering controls, process changes, work practices, emergency procedures, or other measures to prevent releases. EPA did not receive any additional information to help identify best management practices for preventing releases to water, therefore, EPA is not finalizing this clause.*

Section 2.2.4 - Extend the compliance deadline for processing and distribution in commerce of decaBDE-containing wire and cables insulation for use in nuclear power generation facilities

Comment: Commenters (0299, 0300) expressed support for the service life compliance extension. The commenter (0299) stated that given the strict regulation of the industry, certifying alternatives would be a slow process. The commenter agreed with EPA's conclusion that the extension is necessary and practicable. The commenter requested that EPA clarify language in 40 CFR 751.405(a)(2)(iv) to extend the extension to "components containing the wires and cable" as discussed in the preamble of the rule. The commenter also requested EPA clarification that proposed 40 CFR 751.405(a)(2)(ii) would continue to prohibit processing and distribution in commerce of raw and compounded decaBDE for use in wire and cable insulation.

Response: *EPA thanks the commenters for their support. In response to the commenter's point that the certifying alternatives "would be a slow process", EPA reiterates that industry should be actively working towards a decaBDE-free alternative. EPA stated in the preamble of the proposed rule that the 40 CFR 751.405(a)(2)(ii) and (a)(2)(vi) provisions include "electrical equipment important to safety" as defined in 10 CFR 50.49(b) and materials required for the safe operation of "Alternate ac source" and "Basic components" as defined in 10 CFR 50.2, which include decaBDE-containing wire and cable. At the request of the commenter, EPA is clarifying that the extended compliance date provision finalized in this rule at 40 CFR 751.405(a)(2)(vi)) applies to "components containing the wire and cable." EPA is not allowing resumption of processing and distribution in commerce of raw or compounded decaBDE for use in wire and cable insulation in nuclear power generation facilities. The only known supplier of this has been permitted to resume these activities for a limited time under a settlement agreement that provides a mechanism for the continued availability of decaBDE-containing wire and cable insulation, while the nuclear power generation facilities industry undergoes transition to a decaBDE-free alternative.*

Comment: Two commenters (0299, 0300) requested that "service life" is clarified to mean that once the

wire and cable is produced and acquired by either a nuclear supplier or end user (i.e., nuclear power generation facility), processing and distribution in commerce are allowed until that specific wire or cable, or component incorporating such wire and cable, is permanently taken out of service. The commenters recommended that the following activities be permitted while using existing decaBDE-containing material stock:

- storage of decaBDE-containing wire and cable and components;
- replacement of decaBDE-containing wire and cable;
- production of new components;
- rewiring of existing components; and
- other refurbishment, maintenance, and repair of decaBDE-containing wire and cable and components.

Response: *EPA is finalizing its proposal to prohibit, after the end of the wire and cables' service life, all persons from processing and distribution in commerce of decaBDE-containing wire and cable insulation for nuclear power generation facilities (including test and research reactors). This is consistent with EPA's decision, as stated in the 2021 rulemaking and not reopened in this rulemaking, not to use its TSCA authorities to regulate the continued commercial use of decaBDE-containing articles. 86 Fed. Reg. at 886 and 88 Fed. Reg. at 82296. EPA generally interprets "service life" in this case to mean until the end of the finished article's period of use. This extended compliance deadline allows for the processing and distribution in commerce of decaBDE-containing wire and cable insulation and the components containing the wire and cable in nuclear power generation facilities (including test and research reactors and those activities listed by the commenter (e.g., storage, replacement, rewiring, refurbishment, maintenance, and repair) of existing decaBDE-containing wire and cable and components to continue until the end of the service life of those articles. This provision does not allow the use of raw decaBDE to create new wire and cable for use in nuclear power generation facilities, which are currently prohibited by 40 CFR 715.405(a)(2)(ii).*

Comment: A product manufacturer/importer (0294) wrote in opposition to the proposed extension for decaBDE-containing wire and cables insulation, arguing that EPA did not provide sufficient justification. The commenter stated that there are available and qualified alternatives to these products that could be employed should the supplier not meet the extension. The commenter requested that EPA clarify how it will ensure that "entities involved are diligently working to qualify their alternative components pursuant with Nuclear Regulatory Commission regulations and guidance" as stated in an enforcement statement issued May 2, 2023.

Response: *EPA disagrees with the commenter that EPA did not provide sufficient justification for extending the compliance date for processing and distribution in commerce of decaBDE-containing wire and cable insulation for use in nuclear power generation facilities and the components containing the wire and cable in nuclear power generation facilities (including test and research reactors). To clarify, EPA is not extending the compliance deadline for processing and distribution in commerce of raw decaBDE for use in new wire and cable insulation. After the January 6, 2023, extended compliance deadline in the 2021 decaBDE final rule, EPA received multiple requests and letters of concern regarding the availability of decaBDE-containing wire and cable insulation used in the nuclear power sector. The nuclear sector reported to EPA that they were at risk of not having qualified wire and cable available, which could negatively affect both scheduled maintenance outages and unplanned equipment failures and, ultimately, could force multiple nuclear power plants to be temporarily taken offline.*

In response to the commenter's assertion that there are available and qualified alternatives that could be

employed if the supplier does did not meet the extension, EPA confirmed with the NRC that while companies may have qualified alternative cabling that satisfies the requirements of 10 CFR 50.49, each licensee would need to assess if the performance characteristics of the alternative cabling meet plant specific requirements for different applications. Additionally, for alternative wire and cables to be fully qualified, they must be safe and suitable for the environmental conditions in which they operate, which vary across the country. Being fully qualified means that the entire component (not just the wires) has been demonstrated and documented to meet NRC's environmental qualification requirements, which can include qualification of wiring harnesses, wiring connectors, and windings; compatibility with adhesives, housings, and bushings that are used in the component; and durability to withstand steam, chemicals, and radiation to which the component as a whole will be exposed during potential accident conditions. Unless direct equivalence between old and new wiring can be proven, this qualification process can take several years. The NRC and U.S. Department of Energy (DOE) confirmed that the alternative this commenter mentioned is not fully qualified at this time. As a result, regardless of the source of the qualified wire, the nuclear industry and supply chain need additional time to ensure federal regulations on environmental qualification of safety related equipment are satisfied.

Comment: An industry trade organization (0299) stated that a downstream notification requirement would be very useful for the nuclear industry to identify and communicate the impacts of potential risk management regulations to EPA, as well as to manage compliance with such regulations. However, the commenter said they would need more information about how implementation and enforcement would be addressed by EPA, particularly with respect to downstream suppliers and end users.

Response: *EPA thanks this commenter for its support of the downstream notification provisions. Parts of this final rule describe exclusions, later compliance dates for certain uses, additional time for producing and distributing certain replacement parts, regulatory threshold level, etc. and provide more information about the implementation of this rule.*

Section 2.2.5 - Require export notification for decaBDE-containing wire and cable for nuclear power generation facilities

Comment: A nongovernmental organization (0286) offered support for the proposed requirement to notify EPA of export of decaBDE-containing wire and cable for nuclear power generation facilities.

Response: *EPA thanks the commenter for the support.*

Comment: An industry trade organization (0307) expressed concern with the export notification provision, claiming that it constitutes a precedent-setting change. The commenter recommended that this provision be considered in a separate rulemaking.

Response: *EPA disagrees with the commenter that the required export notification for decaBDE-containing wire and cable for nuclear power generation facilities is precedent-setting or should be considered in a separate rulemaking. As discussed in the 2021 decaBDE final rule, decaBDE is listed on Annex A of the Stockholm Convention on Persistent Organic Pollutants (the POPs Convention), which prohibits the production, use, import, and export of decaBDE and decaBDE-containing products and articles for Parties to the listing decision for decaBDE. Subsequent to that rule, EPA learned that there is a need for export of decaBDE-containing wire and cable for nuclear power plant generation facilities to other countries notwithstanding the POPs Convention requirements (the United States is a signatory to the POPs Convention). These circumstances merit immediate consideration in this rulemaking. Thus, EPA is finalizing the requirement for a TSCA section 12(b) export notice for export of decaBDE-containing wire and cable for nuclear power generation facilities.*

Section 2.2.6 - Other comments on decaBDE

Comment: An industry trade organization (0299) offered support for the scope of nuclear facilities included under the definition of "nuclear power generation facilities" in the proposed rule, but suggested EPA consider referencing "production facility" as defined in 10 CFR 50.2 to avoid confusion.

Response: *EPA thanks the commenter for their support. As mentioned in the proposed rule, EPA interprets the term "nuclear power generation facilities" to include nuclear reactors as defined by the NRC in 10 CFR 50.2, production facilities, test and research reactors, other utilization facilities not specifically designed for or used primarily for the formation of plutonium or U–233, and reactors operated under the oversight of the Department of Energy (88 FR at 82299). EPA has reiterated this interpretation in this final rule.*

Comment: An industry trade organization (0307) wrote in support of EPA's continued exemption for the manufacturing, processing, and distribution in commerce of motor vehicles that contain decaBDE in replacement parts and replacement parts to which decaBDE has been added, through the end of the motor vehicles service lives or 2036, whichever is earlier.

Response: *EPA thanks this commenter for the support.*

Section 2.3 – PIP (3:1) – proposed revisions to 40 CFR 751.407

Section 2.3.1 - Lubricants and greases

Comment: Two industry trade organizations (0286, 0293) expressed support for EPA's proposed 5-year phased-in prohibition of lubricants and greases.

Response: *EPA thanks these commenters for their support.*

Comment: A product manufacturer/importer (0295) expressed support for maintaining the aerospace-specific exclusion for lubricants and greases, stating that there has been no change in the industry's need for these exclusions since previous communications on the 2021 Final Rule. A chemical manufacturer/importer (0302) similarly expressed support for maintaining the exclusion for aerospace and turbine use.

Response: *EPA thanks these commenters for their comments relating to the exclusion from the prohibitions for aerospace lubricants and greases and appreciates their continued communication with EPA. EPA is finalizing the exclusion in this final rule.*

Comment: A product manufacturer (0298) argued that if the primary alternative regulatory action is taken, namely a 30-year time limit on processing and distribution in commerce of PIP (3:1) and PIP (3:1)-containing products for use in lubricants and greases for aerospace and turbine applications and PIP (3:1)-containing lubricants and greases for aerospace and turbine applications, that 30 years should be the minimum limit to consider. The commenter stated that while 30 years could be considered a reasonable amount of time in which to reformulate, this would be the expected minimum, noting that after the identification of possible alternatives through extensive research and development activities, product testing must then be performed. Further, following that, according to the commenter, regulatory approvals as required by the Federal Aviation Association (FAA) and the varied Military Specifications must be met and certified. Finally, the commenter states, original equipment manufacturers (OEM) approvals must be sought through further testing and research before circulation into use. The commenter concludes that these approvals take considerable time, financial investment, and collaboration. The commenter also notes that any phase-in prohibition would also ideally include consideration towards any alternatives

being listed and active on the TSCA inventory and if the chemical is not listed and active, additional time would be needed for the reformulation process. Another commenter (0295), in opposing the primary alternative regulatory action, argued that it difficult to forecast a specific timeframe required to support a safe transition to viable alternative solutions for aerospace use and there are significant unknowns and uncertainties involved at each stage of these multistep recertification and qualification processes, some of which, such as availability of candidate formulations, are beyond the control of the airframe manufacturers.

Response: *EPA agrees with the commenter and is finalizing the exclusion from prohibition for processing and distribution of PIP (3:1) for use in lubricants and greases for aerospace and turbines uses, PIP (3:1)-containing products for use in lubricants and greases for aerospace and turbines uses, and PIP (3:1)-containing lubricants and greases for aerospace and turbines uses.*

Comment: Several commenters (0297, 0301, 0302, 0307, 0295, 0311) opposed the proposal to narrow the scope of the exclusion for lubricants and greases by adding a phase-in prohibition for non-aerospace and non-turbine uses. One commenter (0284) reasoned that a lack of comments from industries objecting to the proposed exclusion circumstances does not constitute support that substitutes can be implemented in 5 years. Four commenters requested EPA reconsider the full exclusion in the 2021 final rule. One commenter (0307) noted regulatory uncertainty, especially given the presence of alternatives on the TSCA 2014 work plan. Another commenter (0284) stated the belief that for many applications, it is not possible to estimate how long it will take to develop an alternative that meets required performance specification and can be stably supplied. Another commenter stated their belief that they do not think an alternative could be found in 30 years. A product manufacturer/importer (0295) stated that many formulators that manufacture materials used by the aerospace sector cater to a wider industry. The commenter reasoned that the proposed rule would likely cause these manufacturers to either reformulate their products, so they no longer include PIP (3:1) or discontinue sales of these PIP (3:1)-containing products, negatively impacting the aerospace sectors' ability to procure these products.

Response: *EPA acknowledged in the 2021 PIP (3:1) final rule and continues to acknowledge the degree to which PIP (3:1) is a crucial anti-wear component for aerospace lubricants and greases, which is needed to perform at a wide range of temperatures and pressures. EPA continues to understand that there are some non-aerospace uses of these lubricants and greases where PIP (3:1) is a crucial anti-wear component, such as turbines used in power generation or in marine settings, and the final rule continues to allow PIP (3:1) use in those cases. However, as discussed in the 2021 PIP (3:1) proposed rule, uses in non-aircraft machinery and non-turbine equipment may not be subject to these same environmental stresses or safety and performance requirements from industry and government as the uses in the aerospace sector and turbines. Commenters on this provision did not provide sufficient information to support claims that technically feasible alternatives could not be identified in those cases. While EPA did not identify specific alternatives for specific applications, believing that companies are best able to do so, as discussed in the 2020 Economic Analysis, several potential chemical substitutes for PIP (3:1) exist. Three unique chemical substitutes of PIP (3:1) have been confirmed and an additional ten potential chemical substitutes have been identified, including some for non-aerospace and non-turbine lubricants and greases that are currently available on the market. Commenters did not address these considerations. Given the existence of these alternatives for some non-aerospace, non-turbine uses, EPA believes it is likely that alternatives for other applications can be or have been found. EPA cannot predict whether formulators will no longer supply certain industries with PIP (3:1)-containing lubricants and greases. Based on this information, EPA believes this final rule provides reasonable transition periods of 15 years to phase out non-aerospace and non-turbine uses for entities to prepare.*

Comment: Several commenters argued that a 5-year phase-out for non-aerospace and non-turbine

lubricant and greases is impractical. Two commenters (0297, 0284) noted that it was not reasonable to assume that alternatives will be identified in the near term. Some commenters (0297, 0287, 0289, 0307) stated that any material changes require extensive testing, validation, and regulatory compliance, as well as collaboration with multiple stakeholders, including manufacturers, suppliers, and regulatory bodies, to ensure the safety, performance, and compliance of new material. Two commenters (0287, 0289) recommended EPA finalize the same timelines for the phase-out of non-aerospace and non-turbine lubricants and greases as parts for motor vehicles (15 years for new motor vehicles and 30 years for replacement parts). An industry trade organization (0296) recommended, at minimum, a 15-year phase-in prohibition for the use of PIP (3:1)-containing lubricants and greases in automation technologies. Other commenters recommended the alternative 30-year phase-in prohibition, if it included a means to seek a grace period extension or exemption. Some commenters noted that a 30-year exemption would align with the phase out for replacement parts for motor vehicles. One commenter (0287) noted that finding an alternative for motor vehicles is challenging due to the specific requirements, such as high temperatures, pressures, and durability, as well as safety. Another commenter (0307) noted that 5 years is too short to complete a transition, especially in light of performance standards administered by EPA and the National Highway Traffic Safety Administration. One commenter (0289) recommended harmonizing this phase-out period with the proposed phase-out period for new and replacement parts, because lubricants and greases are essential to protecting marine parts.

Response: *Based on comments, EPA agrees that the 5-year phase-in prohibition that EPA proposed for PIP (3:1) in non-aerospace and non-turbine lubricants and greases is not a reasonable or practicable transition period for industry to transition to new alternatives in this case and is finalizing an extended phase-in prohibition of 15 years. This 15-year phase-in prohibition harmonizes with the phase-in prohibition period for the manufacturing, processing, and distribution in commerce of PIP (3:1)-containing products for use in parts for new motor vehicles in that both could be phased out at the same time. After the 15-year phase-in prohibition for parts for new motor vehicles and lubricants and greases, excluding aerospace and turbine uses, any part for a new motor vehicle could not rely on the use of PIP (3:1) and hence would need to be designed with an alternative lubricant. In contrast, 40 CFR 751.407(a)(2)(vi) makes clear that "manufacturing, processing, and distribution in commerce of PIP (3:1)-containing products for use in replacement parts for motor vehicles" is not prohibited for 30 years from the date of publication of the final rule in the Federal Register. This provision allows manufacturing, processing, and distribution in commerce of PIP (3:1)-containing products for replacement parts, which, for example, includes any PIP (3:1)-containing lubricants, that might otherwise be subject to an earlier phase-out schedule, as long as the purpose for such activity is for motor vehicle replacement parts. During other comment periods on EPA PBT rulemakings, commenters proposed various timelines for eliminating PIP (3:1) from their supply chains, ranging from 5-15 years, for uses not specific to aerospace. One timeline provided by a commenter (EPA-HQ-OPPT-2021-0598-0038) who identified the use of lubricants in their supply chains provided for 30 months for identifying PIP (3:1) in supply chains, 20 months to identify and test alternatives, 48 months to meet supplier and manufacturer qualifications, during which time re-certification for industry and regulatory standards would be met, 36 months, some of which could be done concurrently with other phases, for customer qualification, and 6 months to update documentation. If performed sequentially, these would add up to approximately 12 years. Hence, based on this information, EPA has determined that 15 years is a practicable amount of time for manufactures to transition to an alternative to PIP (3:1) for non-turbine and non-aerospace lubricants and greases, and, similar to discussions in the 2021 PIP (3:1) rule, that an additional 15 years is practicable amount of time for transition to a PIP (3:1) alternative for motor vehicle replacement parts. Commenters did not submit sufficient information, for example specific*

performance requirements and a comparative analysis with alternative lubricants that EPA identified are available on the market, to support the need for a 30-year phase-out.

Comment: Two commenters (0295, 0302) asked the Agency to confirm in the preamble to the final rule that the phrase "turbine applications" as used in the proposed regulation refers to the use of PIP (3:1) formulations in gas turbine engines (whether for aviation or in nonaviation advanced gas turbines), and not other kinds of turbines. A chemical manufacturer/importer (0302) recommended defining "turbine applications" in 40 CFR 751.407(b)(1)(ii) to clarify that the term refers to the use of PIP (3:1) formulations in gas turbine engines. Alternatively, the commenter recommended or changing the term "turbine applications" to "gas turbine engine applications."

Response: *In the proposal, EPA asked for comment on the scope of the exclusion for turbines. Because EPA believes PIP (3:1)-containing lubricants and grease may have applications in other categories of turbines, EPA is not further narrowing the scope of the exclusion to gas turbine engines only.*

Comment: A commenter (0307) said that EPA should consider language that ensures that lubricant and grease would be allowed to clear the channels of trade after the 30-year phase-in prohibition period proposed in 40 CFR 751.407(a)(2)(vi) for use of PIP (3:1) in replacement parts for motor vehicles, including heavy machinery, and PIP (3:1)-containing replacement parts, and the motor vehicles, including heavy machinery, that contain such replacement parts.

Response: *Based on comments, EPA is extending the 5-year phase-in prohibition that EPA proposed for PIP (3:1) in non-aerospace and non-turbine lubricants and greases and is finalizing a phase-in prohibition of 15 years. In addition, as noted above, this final rule allows the use of PIP (3:1)-containing products, including lubricants and greases, for certain uses that are still being phased out, even after the 15-year phase-out for such products, for example at 40 CFR 751.407(a)(2)(vi) for use in replacement parts for motor vehicles. However, manufacturers would be prohibited from using PIP (3:1)-containing lubricants and greases in parts installed in new motor vehicles after 15 years. See Unit III.D.1. in the final rule for a further discussion of phase-in prohibition time periods. These phase-in prohibition periods for each activity are intended to reflect opportunities for PIP (3:1) to clear the channels of trade for that purpose and thus EPA believes this phase-in prohibition period provides sufficient time for entities to manage product in the channels of trade.*

Comment: An industry trade organization (0311) stated that the combined proposed prohibition in 40 CFR 751.407(a)(iv) and the proposed exclusion in 40 CFR 751.407(b)(1)(ii) would prohibit the use of equipment, such as motor vehicles and industrial machinery, before the end of their useful life and subsequent recycling. The commenter encouraged EPA to include an exclusion for recycling and reuse activities in both 40 CFR 751.407(a)(iv) and 751.407(b) of the proposed rule. The commenter wrote that such an exclusion would require additional revisions to 40 CFR 751.407, including current 40 CFR 751.407(d)(4), current 40 CFR 751.407(e)(4), and proposed 40 CFR 751.407(f)(8)(ii). The commenter noted that while 40 CFR 751.407(b)(vi) and (vii) contain recycling and reuse exclusions, their contexts are necessarily different.

Response: *EPA thanks these commenters for the information provided. For the reasons noted by the comments, EPA is extending the proposed phase-out of lubricants and greases from 5 years to 15 years in the final rule so that PIP (3:1) can be phased out of these products while accounting for the time needed to find suitable alternatives that meet the performance criteria for these industries.*

EPA disagrees with the commenter's interpretation that if the proposed regulations were finalized, they would have prohibited the use of equipment, such as motor vehicles and industrial machinery, before the end of their useful life and subsequent recycling and is clarifying here and in Unit III.D.1. of the final rule

that there may be other longer phaseouts or exclusions that might apply to allow the continued processing and distribution of PIP (3:1) or PIP (3:1) products for use in lubricants or greases. Where EPA allows the use of PIP (3:1)-containing products for use in an application that is being phased out or with an exclusion, EPA intends for PIP 3:1- containing lubricants and greases, as a "PIP (3:1)-containing product," to continue to be used in the various industries in those cases. For example, at 40 CFR 751.407(a)(2)(vi), EPA is finalizing a phase-in prohibition for the use of PIP (3:1) and PIP (3:1)-containing products for use in replacement parts for motor vehicles. Although the phase-out period for all manufacturing, processing, and distribution in commerce of PIP (3:1)-containing lubricants and greases, except in aerospace and turbines is 15 years, generally, the provision at section 751.407(a)(2)(vi) allows for the use of PIP (3:1)-containing products, e.g., lubricants and greases, for the duration of the phase-out for motor vehicle replacement parts.

Comment: A chemical manufacturer/importer (0298) advocated for the inclusion of "specified systems" to the regulatory text for lubricants and greases for aerospace and turbine use, and PIP (3:1)-containing lubricants and greases for aerospace and turbine uses, mirroring the language of the hydraulic fluid exclusion.

Response: *EPA's proposed regulatory text for lubricants and greases for use in aerospace and turbine applications mirrors the structure of the hydraulic fluid exclusion. The commenter did not provide information regarding which specified systems they were referring to.*

Comment: Regarding the request for comment on whether lubrication needs in non-aircraft equipment and non-turbine aerospace equipment may be less demanding, a chemical manufacturer/importer (0302) said that whether used in aircraft or non-aircraft aviation gas turbines, the lubrication demands in gas turbine engines are the same because they are the same engines.

Response: *EPA thanks the commenter for this information.*

Comment: A chemical manufacturer/importer (0298) expressed opposition to the primary alternative regulatory action considered that would place a 30-year time limit on processing and distribution in commerce of PIP (3:1) and PIP (3:1)-containing products for use in lubricants and greases for aerospace and turbine applications, and PIP (3:1)-containing lubricants and PIP (3:1)-containing lubricants and greases for aerospace and turbine applications. The commenter expressed a preference for excluding this use from prohibition. However, if a primary alternative regulatory action is necessary, the commenter said that 30-years should be the minimum. A product manufacturer/importer (0295) said it is difficult to predict a specific timeframe required to support the safe transition to a viable alternative for aerospace use. The commenter recommended against locking in a discrete time limit for the prohibition of PIP (3:1) for use in lubricants and greases for aerospace and turbine applications, such as the 30-year time limit considered as a primary alternative. A chemical manufacturer/importer (0302) said that it would not object to a 30-year time limit for aerospace and turbine uses, however, if such a period is adopted, the commenter said it should include a means to seek an extension of the exemption period, as a complete substitution may not be feasible within a 30-year period.

Response: *EPA thanks the commenters for their input. For these reasons, and the reasons noted in EPA's proposed rule, including relating to the lack of alternatives and importance of this use in lubricants and greases for this sector, EPA agrees that the primary alternative option identified in the proposed rule is not practicable at this time. 88 Fed. Reg. at 82031. Thus, EPA is not finalizing that option of phasing-out lubricants and greases for aerospace and turbine uses after 30 years.*

Comment: In response to EPA's request for comment on the performance requirements and the suitability of alternatives to meet any performance requirements for nonaviation and non-turbine uses, an industry trade organization (0284) stated that there may be alternatives for certain applications, but it has

not been confirmed that there are alternatives available for all applications, and it is not possible to estimate how long it will take to develop an alternative that meets the required performance and can be stably supplied. Other industry trade organizations (0285, 0287, 0289) said that finding alternatives to PIP (3:1) for motor vehicle and marine parts can be challenging due to the specific requirements of these components, such as high temperatures, pressures, and durability. One of the commenters (0289) stated that recreational marine manufacturers are simply installers of components and do not have the chemical experts on staff to determine if replacement chemicals will provide the same level of safety or durability.

Response: *As detailed in the Economic Analysis in the docket for this rulemaking, there is a range of non-PIP (3:1) flame retardants, plasticizers, lubricants, etc. that are being used or could potentially be used in industry sectors that are currently using PIP (3:1) and therefore EPA proposed a 5-year phase-out for the processing and distribution of most PIP (3:1)-containing lubricants and greases. However, EPA acknowledges that identifying and testing alternatives to find chemicals, combinations of chemicals, design modifications, or other alternatives that meet certain performance characteristics takes time and EPA is instead finalizing a 15-year phase-out that takes into account this kind of information and comments. Where the Agency received information demonstrating a practical barrier to developing alternatives to PIP (3:1) that would meet performance requirements, the Agency considered an exclusion, for example for the use of PIP (3:1) in certain hydraulic fluids. Where the Agency obtained or received information that alternatives may exist but received no information demonstrating from a practicable standpoint that those alternatives could or could not be used, EPA considered longer term phaseouts to identify alternatives, taking into consideration the information noted above relating to necessary transition time for identify specific alternatives and transitioning to those alternatives, particularly given the sectors using PIP (3:1)).*

EPA recognizes that entities that simply install components may not test the components they install for safety or durability, nor have the expertise to assess the safety and durability even if they did perform tests. However, to the extent safety and durability are characteristics recreational marine manufacturers (or other purchasers) require in the components they acquire and install in their products, they should ensure that the manufacturers who supply those components meet the desired criteria. The manufacturers of the components from whom the installers acquire their parts presumably do have the expertise to test and assess the safety and durability of the parts they produce and sell. And as EPA explained in the 2021 PIP (3:1) rule, recreational marine manufacturers (or other purchasers) can specify products and articles made without PIP (3:1) in their purchase contracts or orders and have up to 15 years to ensure transitioning to such specifications.

Section 2.3.2 - New and replacement parts for motor vehicles

Comment: Industry trade organizations (0285, 0289, 0308) expressed support for the proposed 15-year phased-in prohibition for new parts and 30-year phase-in for replacement parts for motor vehicles. Other industry trade organizations (0284, 0290) expressed support for including a reference to “heavy machinery” in the phase-in prohibition for new and replacement parts for motor vehicles as a clarification. An industry trade organization (0290) said that a shorter compliance period for new and replacement parts for motor vehicles would not be feasible. The commenter stated that it would likely take 15 years to fully phase out the use of PIP (3:1) in the motor vehicle supply chain. According to the commenter, those motor vehicles would need replacement parts for at least another 15 years. The commenter reasoned that it would not be feasible to manufacture replacement parts without PIP (3:1) for equipment designed for parts containing PIP (3:1).

Response: *EPA thanks the commenters for their support.*

Comment: An industry trade organization (0290) said that if EPA makes the proposed changes, offroad motorized vehicles and outdoor power equipment need to be included in the motor vehicle provisions, rather than maintaining the current October 31, 2024, compliance date. Similarly, another industry trade organization (0308) recommended expanding the definition of motor vehicle to include the wide variety of products, including non-road mobile equipment, large scale fixed installations, large scale stationary industrial tools, alternative power applications, in the off-road equipment industry. The commenter notes that finished products have a life cycle measured in decades and are designed for professional recycling of the entire product at the end of life. Furthermore, the commenter recommended including a definition of "Off-Road Equipment." Another commenter (0209) requests that motor vehicles be clarified to explicitly include offroad motorized vehicles and outdoor power equipment, noting that outdoor power equipment is heavily dependent on automotive supply chains. Another industry trade organization (0297) recommended EPA consider simplifying its exemptions for "heavy machinery" and propose applying the same indefinite exclusion as applied to circuit boards and related wire harnessing to heavy machinery and manufacturing equipment.

Response: *EPA thanks the commenters for their input. As described in the proposed rule, EPA generally interprets the term "motor vehicle" to mean a transport vehicle that is propelled or drawn by mechanical power, such as cars, trucks, motorcycles, boats, and construction, agricultural, and industrial machinery. EPA proposed to include a reference to "heavy machinery" in the exclusion to clarify this. To further clarify what is included in the phase-in prohibitions in 40 CFR 751.407(a)(2)(v) and (vi), EPA has amended these provisions to say "including heavy motorized machinery" in the final rule. The phase-in prohibitions in 40 CFR 751.407(a)(2)(v) and (vi) include offroad motor vehicles, construction vehicles, like excavators and front-loaders, and large, motorized equipment, such as paver, cranes, etc., both for military and non-military applications. These provisions and associated compliance timeframes do not include off-road stationary equipment and machinery as discussed by commenters (e.g., non-road mobile equipment, large scale fixed installations, large scale stationary industrial tools, alternative power applications) or outdoor power equipment. EPA disagrees with the commenters that the motor vehicle provisions in 40 CFR 751.407(a)(2)(v) and (vi) should be expanded to include off-road equipment or outdoor power equipment. However, EPA is clarifying that off-road equipment is included in its understanding of the types of equipment that compose the manufacturing equipment category under 40 CFR 751.407(a)(2)(ix). In amending the phase-in prohibition for PIP (3:1) and PIP (3:1)-containing products and articles for use in manufacturing equipment and the semiconductor industry, EPA is also clarifying its understanding of the types of equipment covered under manufacturing equipment and the semiconductor industry and adding the following new categories: electronic equipment (i.e., consumer use, commercial use, and laboratory equipment), HVAC, refrigeration, and water heating equipment, as well as power generating equipment, including outdoor power equipment.*

Comment: An industry trade organization (0284) proposed including the following statement, or something similar, at the end of section 751.407(a)(2)(v) "except for the activities described in paragraph (b) of this section [§ 751.407(a)(2)(v)]", and a similar statement at the end of section 751.407(a)(2)(vi), "except for the activities described in paragraph (b) of this section [§ 751.407(a)(2)(vi)]".

Response: *EPA thanks these commenters. EPA believes that the text in the chapeau at 40 CFR 751.407(b) is clear that "The following activities are not subject to the prohibitions in paragraph (a) of this section" and, therefore, that this additional language is unnecessary.*

Section 2.3.3 - New and replacement parts for aerospace vehicles

Comment: Referencing prior comments, a product manufacturer/importer (0295) said it is difficult to

predict a specific timeframe required to support the safe transition to a viable alternative for aerospace use. The commenter argued against locking in a discrete time limit for the prohibition of PIP (3:1) for use in new and replacement aerospace parts, and instead recommended retaining a full exemption for these parts. Alternatively, the commenter suggested developing a streamlined mechanism for case-by-case compliance date extensions. The commenter expressed support for EPA's proposal to maintain aerospace-specific PIP (3:1) exemptions for use in hydraulic fluids, and adhesives and sealants in new and replacement aerospace parts.

Response: *EPA thanks the commenters. For the reasons discussed in the proposed rule, EPA believes a 30-year phase-in prohibition of processing and distribution in commerce of PIP (3:1) and the manufacturing, processing, and distribution in commerce of PIP (3:1)-containing products for use in parts installed in and distributed as part of new aerospace vehicles, and the manufacturing and processing of parts to which PIP (3:1) has been added for such vehicles is practicable and has been informed by input from this industry. Similarly, for the reasons discussed in the proposed rule, EPA believes that it is practicable to prohibit the processing and distribution in commerce of PIP (3:1) for use in replacement parts for aerospace vehicles, the manufacturing, processing, and distribution in commerce of PIP (3:1)-containing products for use in such replacement parts, and manufacturing and processing of PIP (3:1)-containing replacement parts, after the end of the aerospace vehicle service lives.*

EPA acknowledges the regulatory and safety requirements for the aerospace industry are as stringent or more stringent than those for motor vehicles. In particular, industry stakeholders noted the time required to identify an alternative, and to test and certify its use in parts, to meet safety requirements, as well as a lengthy Federal Aviation Administration approval process. Given these considerations, EPA is finalizing its proposal to allow longer time periods for the phase-in prohibitions for the use of PIP (3:1) in new and replacement parts for aerospace vehicles.

Regarding a mechanism for case-by-case compliance date extensions, there is no mechanism in this rule for requesting EPA to grant compliance deadline extensions absent rulemaking. EPA encourages communication from stakeholders and others affected by its rules as soon as possible if there are future concerns with the compliance dates. .

Comment: A chemical manufacturer/importer (0302) asked EPA to confirm that "aerospace applications" would include "uses of or relating to vehicles or equipment used in the earth's atmosphere and the space beyond ("aerospace"), or the manufacture of such vehicles, or to travel in aerospace… [including,] ground-based equipment and uses connected to travel in aerospace."

Response: *EPA thanks the commenter for the suggestion. The Agency agrees that "aerospace applications" includes "uses of or relating to vehicles or equipment used in the earth's atmosphere and the space beyond ("aerospace")," and "to travel in aerospace," as well as "uses connected to travel in aerospace," to the extent that such uses refer vehicles or equipment used in aerospace. EPA disagrees that the term includes the equipment used to manufacture such vehicles or ground-based equipment, except for ground-based equipment intended for use on extra-terrestrial objects, such as the moon, other planets, and asteroids. However, EPA notes that manufacturing or ground-based vehicles used in the aerospace industry may also be subject to other phase-in prohibition provisions in 40 CFR 751.407(a)(2).*

Section 2.3.4 - Wire harnesses and circuit boards

Comment: Several commenters, including industry trade organizations (0308, 0307, 0306, 0305, 0297, 0293, 0290), and a product manufacturer/importer (0295), expressed support for the proposed exclusion from prohibition for PIP (3:1) in wire harnesses and circuit board. An industry trade organization (0297) requested clarification regarding the scope of items included within this exclusion. The commenter

requested EPA clarify the scope of the items included within the exclusion by providing a definition with a non-exclusive list of examples. The commenter suggested that the list of examples be more expansive than "wire harnesses and circuit boards" and include any item that is attached to an electronic circuit board or that is necessary to secure, cover, or insulate an electronic component that gets attached to a circuit board. Another industry trade organization (0293) said that it is unclear whether EPA intends to define wire harnesses as those that are internal to the product or to also include external harnesses. The commenter asked EPA to clarify this in the final rule and expressed support for including only internal harnesses in the exemption, or for including both internal and external harnesses. An industry trade organization (0297) asked EPA to clarify that this exclusion takes precedence in the situation where other exemptions or phase-in periods are more limited in nature. An industry trade organization (0306) requested that EPA clarify that the semiconductor manufacturing industry can rely on this exclusion. The commenter noted that, as drafted, the proposal could be interpreted to read that the proposed 10-year compliance extension in 40 CFR 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.

Response: *EPA thanks the commenters for their comments. EPA is not providing a definition of wire harnesses or circuit boards in the final rule, but in response to the request of the commenters, EPA is clarifying what is generally included in the exclusion under 40 CFR 751.407(b)(1)(iii) for circuit boards and wire harnesses and how it relates to phase-in prohibitions for PIP (3:1).*

In the preamble of the proposed rule, EPA explained that the term "wire harnesses" includes a broad class of articles, including but not limited to terminal and fuse covers, cable sleeves, casings, connectors and tapes, used in a variety of applications, from defense to aerospace and motor vehicle applications, to medical instrumentation and more. EPA also explained that the Agency understands that PIP (3:1) use in electronic component manufacturing includes the use of PIP (3:1) in circuit boards as well as the use of PIP (3:1)-containing products for the encapsulation of electronics components added to circuit boards and as resins in over molding, dip molding, insert molding applications, or conformal coatings. In both cases, the examples are those that EPA believes come into direct contact with parts conducting or storing electricity. EPA is not including in the Agency's understanding of circuit boards hardware or other items that are attached to circuit boards to secure, cover, or insulate an electronic component as these items do not come into direct contact with parts conducting or storing electricity.

The exclusion for PIP (3:1)-containing wire harnesses and circuit boards even if they are part of an article for which a prohibition applies. Thus, PIP (3:1)-containing wire harnesses and circuit boards may continue to be used in articles that are otherwise subject to a prohibition, including not only semiconductor manufacturing equipment, but other categories of equipment addressed in the final rule, e.g., new and replacement parts for motor and aerospace vehicles. EPA is finalizing the addition of the phrase "except for the activities described in paragraph (b) of this section or where another phase-in prohibition with later deadlines exists as described in the subparagraphs this section" to the introductory phrase in 40 CFR 751.407(a)(2) to clarify that this and other exclusions take precedence over phase-outs, where applicable.

Section 2.3.5 - Marine antifouling coating product

Comment: An industry trade organization (0309) expressed support for the proposed revisions related to Federal Insecticide, Fungicide, and Rodenticide Act registered marine coatings.

Response: *EPA thanks this commenter for the support.*

Section 2.3.6 - Manufacturing and semiconductor manufacturing equipment

Comment: An industry trade organization (0284) expressed support for the extension of the use of PIP (3:1) in electrical and electronic equipment for social infrastructure but argued that the extension should be more than 10 years. Another industry trade organization (0301) said that the ten-year grace-period to match the average life of a machine tool still leaves no time to redesign equipment and supply chains without having to cut short the life expectancy of the first fully compliant machines produced several years after the ban takes effect. This commenter also said that the 15- and 30-year phase-in periods applied to motor vehicles and aerospace should be applied to manufacturing equipment. Additionally, the commenter said the proposed rule falls short of addressing major challenges associated with spare parts and maintenance operations. An industry trade organization (0297) noted that in the examples provided by EPA in the preamble to the proposed rule, a wide variety of industries even beyond semiconductor manufacturing are identified by the Agency where large pieces of complex equipment exist and are used (such as medical appliances, diagnostic equipment, and laboratory appliances). The commenter suggests that it might be more straight forward for the 10-year extension to apply to all such pieces of heavy equipment in operation in the United States and to replacement parts produced to service and repair such existing pieces of such equipment. The commenter (0297) also recommended EPA consider simplifying its exemptions for "heavy machinery" used in "automotive manufacturing" and "semiconductor manufacturing equipment" and apply the same indefinite exclusion as applied to circuit boards and related wire harnessing to heavy machinery and manufacturing equipment. Arguing that the automotive manufacturing and semiconductor manufacturing equipment often present the same set of challenges to identifying technically feasible alternative chemicals as are faced by the producers of circuit boards and related housing, harnesses, and enclosures.

Response: *EPA thanks the commenters for their input. Based on comments received, EPA is adopting a phase-out prohibition for the processing and distribution in commerce of PIP (3:1) and the manufacture, processing, and distribution in commerce of PIP (3:1) products for new parts for manufacturing and semiconductor equipment in 40 CFR 751.407(a)(2)(ix) and additional categories of new equipment and with a 10-year phase-out period. EPA is also adopting a phase-out prohibition 40 CFR 751.407(a)(2)(x) for the replacement parts used in such equipment. The categories of equipment covered by 40 CFR 751.407(a)(2)(ix) include manufacturing equipment, including equipment used in semiconductor manufacturing, electronic equipment, including consumer use, commercial use, and laboratory equipment, HVAC, refrigeration, and water heating equipment, as well as power generating equipment, including outdoor power equipment. These latter types of equipment would have, if this rule had been finalized as proposed, been subject to the October 31, 2024 compliance deadline. Medical devices, when manufactured, processed, or distributed in commerce for use as medical devices, are excluded from regulation under TSCA, and hence would not be covered by this provision. EPA is not, however, applying an indefinite exclusion to heavy machinery and manufacturing equipment. The commenter does not provide sufficient information to consider such an exemption. Further, EPA has received information indicating the potential availability of alternatives meriting a 10-year transition period for manufacturing and semiconductor manufacturing equipment based on comments provided by some commenters from these industries. For example, one commenter from the semiconductor manufacturing equipment industry provided a timeline during the March 2021 comment for moving to alternatives that spanned a 10-year period (EPA-HQ-OPPT-2021-0589-0038). Additionally, the commenter provided information indicating that they have found alternative for many uses in their sector (EPA-HQ-OPPT-2023-0376-0133). Regarding the exclusion for wire harnesses and circuit boards, ss discussed in section 2.3.4, EPA is not aware of alternatives for PIP (3;1) in wire harnesses and circuit boards. In addition, finding an*

alternative to PIP (3:1) for the use in wire harnesses and circuit boards present challenges due to the functional roles (fire retardant, elasticizer, and anti-wear additive) PIP (3:1) has in these articles.

Comment: Several industry trade organizations (0288, 0293, 0297, 0305, 0306, 0292) expressed support for the 10-year extension and said (0288, 0297) that it would be sufficient for fully investigating the semiconductor supply chain for PIP (3:1). However, the commenters said that the extension as currently worded could result in the mistaken conclusion that it applies only to manufacturing equipment used in the semiconductor industry, and said it should read, "manufacturing equipment or in the semiconductor industry". One of the commenters (0306) also requested that EPA clarify that "semiconductor manufacturing" means the full scope of the operations, such as the back-end operations. Finally, the commenter said that the revised compliance date extension, when finalized, should be stated as "October 21, 2034" rather than "November 25, 2033".

Response*: EPA thanks the commenters for their support. As discussed in the preamble to this rule, EPA is finalizing an approach to articles used in manufacturing equipment and in the semiconductor industry, including ancillary operations, based on the approach EPA is using for motor vehicles. In this final rule, EPA is adding a compliance deadline extension of 10 years after the publication of the final rule for processing and distribution in commerce of PIP (3:1), manufacturing, processing, and distribution in commerce of PIP (3:1)-containing products, and manufacturing and processing of for parts for use in new manufacturing equipment, including in the semiconductor industry, and additional time for the same activities for use in replacement parts for equipment used in those industries, as well as additional industries and types of equipment.*

Section 2.3.7 - Require PPE during manufacturing and processing of PIP (3:1)

Comment: An industry trade organization (0311) said that "Provision(s)" should be replaced with "Workplace Protection Requirements" in section 751.407(f)(8). The commenter also notes that 40 CFR 751.407(f)(8)(i) and (ii) apparently exclude themselves due to their reference to "paragraph (f)," which includes each exclusion under 40 CFR 751.407(f)(8) as a provision. In contrast, the exclusion at 40 CFR 751.407(f)(8)(iii) does not refer to itself as it lacks a reference to "paragraph (f)". To resolve these two issues, each occurrence of "provision" or "provisions" under proposed 40 CFR 751.407(f)(8) could be replaced by "workplace protection requirements".

Response: *EPA thanks the commenters for their support of these aspects of the proposed rule. EPA has replaced "Provision(s)" with "Workplace Protection Requirements" in the final rule.*

Comment: An industry trade organization (0307) expressed support for EPA's decision not to require worker protection for the import of PIP (3:1) and PIP (3:1)-containing products and articles. The commenter also expressed support for EPA's decision not to require worker protection for the processing of certain PIP (3:1)-containing products and articles.

Response: *EPA thanks the commenters for their support of these aspects of the proposed rule.*

Comment: Two industry trade organizations (0292, 0297) and a chemical manufacturer/importer (0302) recommended EPA align with OSHA requirements by reframing legal compliance responsibilities in terms of "employers" and "employees," making "employers" the entities responsible for providing respiratory protection.

Response: *EPA thanks the commenter. EPA uses the term "owner or operator" to describe the entity responsible for implementing the workplace protection requirements for workplaces where there is the manufacture or processing of decaBDE and/or PIP (3:1) decaBDE and/or PIP (3:1)-containing products*

and/or articles, except during certain excluded activities. EPA is also clarifying its intent that for the provisions in this rule, any requirement for an owner or operator, or an owner and operator, is a requirement for any individual that is either an owner or an operator. Under TSCA section 6, EPA has authority to regulate occupational exposure from chemical substances and is not constrained by employment relationships. Due to the potential for exposure of third-party persons performing work for the owner or operator, EPA is maintaining the "owner or operator" terminology in the regulatory text. The term includes any person who owns, leases, operates, controls, or supervises such a workplace. While owners or operators remain responsible for ensuring compliance with the workplace requirements, they may contract with others to provide training or implement a respiratory protection program, for example. EPA believes that this approach is essential for addressing the potential for exposure from PIP (3:1) and decaBDE, including to individuals who may not be covered by OSHA requirements, such as self-employed persons, and state and local government workers in states which do not have an OSHA-approved State Plan.

EPA defined "owner or operator" in 40 CFR 751.5 under EPA's regulation, "Methylene Chloride; Regulation under the Toxic Substances Control Act (TSCA)" as "any person who owns, leases, operates, controls, or supervises a workplace covered by this part." This definition applies to PBT chemicals and EPA is not establishing a different definition under 40 CFR 751.403.

Comment: Two industry trade organizations (0292, 0297) and a chemical manufacturer/importer (0302) said that EPA should not prescribe workplace protection requirements, rather EPA should defer to onsite occupational safety practitioners and existing OSHA requirements. The commenters expressed support for the use of PPE in workplaces where exposure to PIP (3:1) during manufacture and processing is reasonably likely to occur; however, the commenters said it is not appropriate for EPA to require the use of PPE where the Agency has not made an affirmative finding that worker exposure is likely to occur from PIP (3:1) that is present in manufactured products and articles. Therefore, the industry trade organizations (0292, 0297) recommended limiting the PPE requirement to processing that involves disassembly and recycling activities that would likely generate airborne dust or broken material in the workplace containing PIP (3:1). The chemical manufacturer/importer (0302) said that any additional worker protection requirements for PIP (3:1) activities should incorporate existing OSHA standards and procedures. The commenter proposed new text for the proposed section 751.407(f)(2) and (3).

Response: *EPA thanks the commenters for their input and disagrees with the suggestion that EPA should defer to onsite occupational safety practitioners and existing OSHA requirements rather than prescribing workplace protection requirements. As EPA discussed in the preamble to the proposed rule, for purposes of determining whether worker protection measures are practicable under TSCA section 6(h)(4), EPA determined that for this rulemaking activity, the Agency no longer believes it is appropriate to assume as a general matter that an applicable OSHA requirement or industry practice is consistently or always properly applied. This change in assumption should not be viewed as an indication that the Agency believes there are no occupational safety protections in place at any location, or that there is widespread noncompliance with applicable OSHA standards. Rather, it reflects the Agency's recognition that its interpretation of the TSCA section 6(h)(4) standard "to reduce exposure . . . to the extent practicable" calls for worker protection measures to reduce the potential for exposure to PBTs generally, considering what is achievable, feasible, workable, and reasonable, in light of the circumstances. This is the case even in the absence of a risk evaluation or risk assessment and even if existing OSHA requirements might apply, such as those under the General Duty Clause of the Occupational Safety and Health Act (29 U.S.C. 654(a)) or OSHA's Respiratory Protection standard (29 CFR 1910.134). EPA's assumption is especially important in this case, where EPA did not and could not have, given the expedited statutory timeframe, used its information gathering authorities under TSCA section 4 to obtain information specific to the*

industrial hygiene programs and worker protection measures in use in the numerous and diverse workplaces that may be subject to the final regulations. EPA did, however, take a number of steps to gather information on this specific topic, including hosting a webinar, opening public comment periods on the PBT chemicals, attending meetings with stakeholders, and following up on contacts and comments received. As noted in the proposed rule, EPA has met or otherwise communicated with entities including manufacturers, processors, distributors, and chemical users as well as trade associations and other non-government organizations to discuss issues or information related to these chemicals, including additional worker protection measures that might be practicable.

Regarding the commenter's belief that it is not appropriate for EPA to require the use of PPE where the Agency has not made an affirmative finding that worker exposure is likely to occur from PIP (3:1), based on the plain language of TSCA section 6(h)(4), once the TSCA sections TSCA section 6(h)(1)(A) and 6(h)(1)(B) findings are made for a chemical, which was done as part of the 2021 rulemaking, the obligation to "reduce exposures … to the extent practicable" applies to "the chemical" broadly, not solely to the chemical activities discussed in the Exposure and Use Assessment or for which the TSCA section 6(h)(1)(B) finding was made. Thus, to the extent that commenters suggest a new TSCA section 6(h)(1)(B) finding must be made or that the TSCA section 6(h)(1)(B) finding must be specific to a regulated field, EPA disagrees (see section 2.2.2). EPA is finalizing worker protection requirements to address that potential for exposure. These final protections will generally be required for certain ongoing activities involving PIP (3:1) that are listed at 40 CFR 751.407(a)(2) and 751.407(b). The requirements are limited to the regulated area, which must be established where "airborne concentrations or direct dermal contact of a specific chemical substance can reasonably be expected." 40 CFR 751.403. The establishment of the regulated area provides flexibility to owners/operators to first utilize one or a combination of elimination, substitution, engineering controls or administrative controls to reduce or eliminate the necessity to demarcate a regulated area by eliminating any areas where exposure can "reasonably be expected." If exposure to the chemical is no longer reasonably expected due to these controls, the owner/operator would not be required to establish a regulated area and the requirement to supply PPE under 40 CFR 751.407(f) for PIP (3:1) would not apply. EPA also requires the owner/operator to keep records of the basis for the regulated area, including monitoring data and documentation of any controls or combination of controls that have reduced exposure to where airborne concentrations of decaBDE or PIP (3:1) can no longer reasonably be expected resulting in a smaller or no regulated area being established.

Comment: A commenter (0302) argued that "regulated area" concept also is flawed because it is not dynamic: PIP (3:1) may be handled in areas used for a variety of activities and not exclusively dedicated to handling PIP (3:1). For example, the commenter notes that aviation turbine oil (ATO) is used in motive equipment, and it may be handled in a variety of non-static maintenance locations where any handling of PIP (3:1) can be expected to be a very small proportion of operating time. It would not be practical to paint the floor of an aviation maintenance facility or the ramp or the deck of a ship or offshore platform to identify an exclusive PIP (3:1) handling area, and it would not be practical to exclude from these areas others who are not reasonably expected to be exposed to PIP (3:1).

Response: *EPA definition of regulated area and the implementing regulations is intended to provide entities with sufficient flexibility in determining where to designate such areas and how long to maintain them, so long as they are established and maintained wherever a potentially exposed person's exposure to airborne concentrations of PIP (3:1) can reasonably be expected. EPA's implementing regulations, for example, do not require the placement of permanent markings to designate an area where a person may be potentially exposed to airborne concentrations.*

Section 2.3.8 - Require engineering controls for processing of PIP (3:1) and PIP (3:1)-containing products as an intermediate processing aid in the manufacturing of cyanoacrylate adhesives

Comment: An industry trade organization (0307) expressed support for "the exclusion of processing of PIP (3:1) and PIP (3:1)-containing products for use as an intermediate to produce cyanoacrylate adhesives when contained in a closed system." An industry trade organization (0309) expressed support for the proposed workplace protections for the use of PIP (3:1) as an intermediate in the manufacturing of cyanoacrylate adhesives since this aspect of the proposal "will preserve protections for workers and the environment while allowing limited, important use of PIP (3:1), without risk of exposure."

Response: *EPA thanks these commenters for their support of this aspect of the proposed rule.*

Section 2.3.9 - Other comments on PIP (3:1)

Comment: An industry trade organization (0297) argued that it would be more practical and appropriate for EPA to provide an indefinite exclusion for the production, processing, and distribution in commerce of replacement parts to be installed in existing PIP (3:1)-containing products and equipment that has been manufactured or installed before the effective date of prohibitions in the final regulation, including complex goods and equipment used in manufacturing and processing operations in the United States. The commenter disagreed with the Agency's interpretation that section 6(c)(2)(D) of TSCA does not apply to TSCA section 6(h) rulemakings. The commenter interpreted TSCA to "require EPA to provide an exemption for replacement parts for complex durable and consumer goods designed before the effective date of the risk management rule." The commenter notes in a footnote that such replacement parts must be exempted from a risk management rule's requirement by operation of law unless EPA finds that the replacement parts "contribute significantly to the risk" identified in a "risk evaluation" to the "general population or to an identified potentially exposed or susceptible subpopulation" and since no risk evaluation was conducted for the PBTs rule, the commenter interprets TSCA to require that such a 5-year exemption must be provided.

Response: *The issue the commenter raised relating to the application of TSCA section 6(c)(2)(D) to TSCA section 6(h) rulemakings was addressed in the 2021 rulemaking and was not reopened for this rulemaking. As EPA explained in the 2021 rulemaking, that provision does not fit well within the framework Congress established for an expedited rulemaking of this sort. Section 6(c)(2)(D) contemplates rulemakings that are based on a finding that the chemical presents "unreasonable risk" following a risk evaluation process, a finding and process not compelled or contemplated for regulation under TSCA section 6(h). Although EPA is not applying these provisions for these reasons to the TSCA section 6(h) rules, EPA does consider concepts embedded in each of these provisions as relevant to what approaches to reducing exposures are "practicable."*

EPA took into consideration issues relevant to whether more immediate reductions in exposure were practicable for activities relating to replacement parts, e.g., existence and availability of alternatives for the particular use and the time to seek and obtain approval in some industries. As discussed in Sections 2.3.2, 2.3.3, and 2.3.6, EPA determined additional time was needed to allow for reasonable transitions times, including for identification, testing and clearance, for replacement parts for equipment manufactured by or used in various industries, recognizing that transition times would be different for different industries.

Comment: An industry trade organization (0296) suggested a 15-year phase in prohibition for the use of PIP (3:1) in manufacturing equipment for automation technologies, and a 30-year phase-in prohibition for replacement parts that are essential to automation technology. The commenter said that 15 years is necessary to ensure the performance, safety, longevity, and reliability of replacement technologies. An industry trade group (0290) requested the same compliance dates for outdoor power equipment as for new motor vehicles – 15 years after publication of the final rule – and for replacement parts - 30 years after publication of the final rule, noting that equipment manufactured with PIP (3:1) up until the 15-year

compliance date will need replacement parts for at least 15 years after that time. Further they note that suppliers have long used PIP (3:1) in many of those parts and getting them to phase out of use of PIP (3:1) in the parts they supply has been a continuing challenge. An industry trade group (0284) believes the phase-out period for electric and electronic equipment (EEE) should be extended beyond the 10 years proposed for equipment manufacturers and the semiconductor industry. They note that EEE is primarily built to order and sold directly to professional and industrial customers and that it is produced in small numbers for use over long periods without modifications or changes and must be reliable. They added that the supply chain is extremely long, and articles used must be guaranteed to be safe under severe and special conditions, such as high temperature, pressure, etc compared to consumer goods. An industry trade group (0306) is seeking clarification regarding the semiconductor manufacturing exemption, in particular, that it applies to 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.

Response: *EPA thanks the commenter. EPA proposed a 10-year phase-in prohibition for PIP (3:1) and PIP (3:1)-containing products and articles used in the manufacturing and semiconductor manufacturing equipment. Various industries sought either to be included in this 10-year phase-in prohibition or in the motor vehicle phase-in prohibition. Those industries include: manufacturers of manufacturing equipment, including various aspects of the semiconductor manufacturing industry; electric and electrical equipment manufacturers, including manufactures of consumer and commercial electronics, appliances, and specialized monitoring, control, and laboratory equipment, manufacturers of HVAC and refrigeration equipment, and manufacturers of power generating equipment, including outdoor power equipment. In response to comments, in the final rule, EPA provides a 10-year phase-in prohibition for PIP (3:1) and PIP (3:1)-containing products for use in parts for new equipment used in or manufactured by these various industries. For related replacement parts, EPA provides various timeframes for phasing out that are consistent with the service life of the equipment based on information collected by EPA and supplied by commenters. Several commenters who submitted comments during the comment period on this proposed rule also submitted comments during the May 2021 comment period following the publication of the 2021 PIP (3:1) final rule and during the comment periods following the rules to extend the compliance date for articles containing PIP (3:1). In those comments, commenters provided timelines for phasing PIP (3:1) out of their supply chains that ranged from 4-15 years for new parts. One timeline (0310) provided for 30 months for identifying PIP (3:1) in supply chains, 20 months to identify and test alternatives, 48 months to meet supplier and manufacturer qualifications, during which time re-certification for industry and regulatory standards would be met, 36 months, some of which could be done concurrently with other phases, for customer qualification, and 6 months to update documentation. These time frames take place over a 10-year span. Given this wide range and given the comments on this proposal supporting the 10 year extension for articles for manufacturing and semiconductor manufacturing equipment, EPA believes that a 10-year phase-in prohibition for new parts across the various industry sectors, which, according to commenters, often share common supply chains, is a practicable amount of time for manufacturers of the various types of equipment considered in this final rule to transition away from PIP (3:1), except for those uses that are excluded or subject to other longer compliance deadlines. EPA notes that manufacturers have had a head start since it has been over three years since EPA finalized the 2021 PIP (3:1) rule, which, if not reconsidered in this rulemaking, would have imposed significantly earlier prohibition phase-in dates for articles.*

Comment: A number of commenters (0301, 0306, 0297, 0305, 0310) sought either an exclusion for replacement parts for the lifetime of equipment for any finished good made prior to the regulatory deadline or a longer phase-out (30-years) period. Commenters also argue that complex products, including manufacturing equipment, rely on spare parts that are often identical to those used in initial

production and that pairing such finished goods with the same parts ensures performance, safety, and reliability consistent with the original design. In addition, several commenters argue that redesigning parts, components, or entire systems to use similar but different parts is often not feasible or practical, and may take years to assess the performance, reliability, safety, and other features of alternatives. The commenter (0306) argues that 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 and that to keep these machines operational over their useful life, suppliers must provide replacement parts for use in repair maintenance. Another commenter (0284) who also sought an exclusion for replacement parts for electrical and electronic equipment noted the manufacturers can repair such finished goods "as produced" by replacing same parts as before, but cannot redesign parts, components or the whole system to use similar but different parts, arguing that in such cases, it would be almost impossible to ensure the same or similar performance, safety and reliability as before.

Response*: EPA proposed and is finalizing a 15-year phase-out for replacement parts for motor vehicles and a phase-out for replacement parts for aerospace vehicles going into effect at the end of service life of the vehicle. EPA also proposed and is finalizing a phase-out for PIP (3:1)-containing articles used in manufacturing and semiconductor manufacturing equipment. In the final rule, EPA phases out the processing, and distribution in commerce of PIP (3:1) and the manufacturing, processing and distribution in commerce of PIP (3:1)-containing products for use in replacement parts for various industries, with various phase-out timeframes that are consistent with the service life of the related equipment. The various phase-out timeframes recognize the different service lives of the equipment. In some instances, where practicable, EPA is finalizing specified compliance dates; in other cases, EPA is finalizing a phase-out of the processing and distribution in commerce of PIP (3:1) and the manufacturing, processing, and distribution in commerce of PIP (3:1)-containing products for use in certain equipment, after the service lives of equipment. These provisions took into account the need to provide replacement parts for equipment that has already been designed, that existing equipment replacement parts may have already been made and are in storage, and the cost of disposing of equipment before the end of its service life and replacement parts already produced, it is not practicable to begin prohibitions sooner. EPA believes the length of the phase-outs will provide manufactures with adequate time to manage stocks such that at the end of the phase-outs, it will minimize the need to dispose of stranded articles.*

Comment: A commenter (0297) cited California Civil Code section 1793.03, in which consumer technology companies are required to provide service and repair facilities with functional parts for certain electronics for 7 years from the date of manufacture. According to the commenter, manufacturers often purchase these inventories in bulk and store them outside of the United States; thus, even if the prohibition takes place on an import date basis, it would be challenging for manufacturers to comply. The commenter stated that an indefinite exclusion for replacement parts would address these compliance challenges.

Response: *EPA thanks the commenter for the information regarding California Civil Code section 1793.03. In October 2023, the White House convened a roundtable with federal and state officials, small business owners, and private sector leaders to discuss the importance of the right to repair (https://www.whitehouse.gov/briefing-room/statements-releases/2023/10/25/readout-of-the-white-house-convening-on-right-to-repair). The roundtable noted that, in the simplest terms, the right to repair is the right to fix something you own when it breaks—either by yourself or by taking it to an independent repair shop and that, by giving consumers more choices on where and how to get their devices fixed, right to repair lowers costs, makes it easier to fix the things you own, and increases competition. EPA also*

acknowledges that an immediate prohibition on replacement parts for consumer electronics would be extremely burdensome, necessitating the identification and disposal of parts containing PIP (3:1). The roundtable noted that over 30 states have introduced right-to-repair legislation covering a broad range of sectors, with new laws passed in Colorado, Maine, Massachusetts, Minnesota, and New York in just the last three years. In response to this and other comments (0284), EPA is finalizing a 7-year phase-out for the processing and distribution in commerce of PIP (3:1) and manufacturing, processing, and distribution in commerce of PIP (3:1)-containing products for use in replacement parts for consumer electronics, including but not limited to cell phones, computers, televisions, and small home appliances, such as blenders, toaster-ovens, and microwaves. This phase-out period is consistent with the average lifespan of many consumer electronics (https://www.cta.tech/Resources/i3-Magazine/i3-Issues/2023/January-February/Product-Lifecycles-Shrinking, accessed on 3/22/2024) and the California civil code.

Comment: An industry trade organization (0296) suggested a 30-year phase-in prohibition for replacement parts that are essential to automation technology. For replacement parts, the commenter (0296) claimed automation equipment, which is used in industrial manufacturing and motor vehicle production, in the aerospace, agricultural, energy and military sectors, and many other industries, is designed for extended life spans, often surpassing 50 years, during which they require servicing and maintenance. The commenter notes that throughout their extensive life spans, automation machines require regular servicing and maintenance to ensure proper and safe operation and that when manufacturers create their automation technology, they also manufacture ample quantities of replacement parts adhering to requisite safety and performance requirements. Another trade group (0306) advocates for either an exclusion for replacement parts or a 30-year phase-out for parts in the semiconductor manufacturing industry and ancillary operations. One commenter (0306) noted that manufacturing equipment ("tools") used in semiconductor manufacturing are costly, highly engineered pieces of durable capital equipment comprising many thousands of components, each one costing millions of dollars and that 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. Another (0288) is seeking an exclusion for semiconductor manufacturing and related equipment (SMRE) replacement parts for both the decaBDE and PIP (3:1) rules. Another commenter (0308) seeks to make sure that the motor vehicle phase-out provision adequately covers replacement parts the off-road equipment industry and the products they make.

Response: *EPA is finalizing a phase-out for PIP (3:1)-containing replacement parts for manufacturing equipment that extends for the lifetime of the equipment. Manufacturing equipment includes but is not limited to: machinery used in motor and aerospace vehicle production and in the semiconductor industry, including in ancillary industries; automation equipment used in manufacturing; and heavy machinery (non-motorized), including non-road mobile equipment, large scale fixed installations, and large scale stationary industrial tools. EPA understands that this equipment is generally not mass produced but designed based on the specific requirements, hence the service lives of such equipment, which may last for decades, is not predictable. Given the long service lives of this types of equipment, the importance of such equipment to the national economy, and the cost of redesigning parts for this equipment, it is not practicable to set a specific compliance deadline. EPA is confident that, with the 10-year phase-out of PIP (3:1) for parts in new machinery EPA is finalizing, PIP (3:1) use in this sector will eventually phase out, reducing exposures to PIP (3:1) in the long term. In response to the commenter's request to exclude SMRE replacement parts that contain decaBDE, EPA is not extending replacement part exclusions beyond the 2021 decaBDE final rule (i.e., for use in aerospace and motor vehicles). The commenter provided no additional information as to why the exclusion should also apply to decaBDE.*

Comment: A trade group (0284) is seeking an exclusion for replacement parts for electrical and electronic equipment. The commenter explained the models often have long lives, and are discontinued, therefore old spare parts produced before the restriction must be available for the model. The commenter also recommended inserting the following text in section (b)(1): "PIP (3:1) and PIP (3:1)-containing products for use in replacement parts for electric and electronic equipment processed before October 31, 2024, PIP (3:1)-containing replacement parts, and the electric and electronic equipment that originally processed before October 31, 2024, and contains such replacement parts". A trade industry group (0310) representing manufacturers of consumer and commercial electronic goods requested EPA to provide an exemption for spare and replacement part for any finished good manufactured prior to the regulatory deadline. This commenter supports an exemption for monitoring and control instruments, which include analytical spectrometers, chromatographs, scanning and transmission electron microscopes, signal generators, spectrum analyzers, oscilloscopes, and infrared cameras and thermometers. The commenter argues that the specialized components can be purchased through the lifetime buy process: a common approach employed for electronic parts obsolescence management and that if these components are determined to contain PIP (3:1), it can be difficult to recuperate from an unplanned, forced obsolescence, noting that it can take more than a decade to design and produce specialty components.

Response: *In response to comments, EPA is finalizing a phase-out for PIP (3:1)-containing replacement parts for use in various types of electrical and electronic equipment with various compliance dates based on the expected lifetimes of the equipment. As discussed in response to a previous comment, EPA is providing a 7-year phase-out from the publication of the final rule for consumer electronics. For commercial use electronic equipment, including hand-held or bench-top monitoring and controls instrument, the Agency also thinks that an immediate prohibition on replacement parts would be extremely burdensome, necessitating the identification and disposal of countless parts containing PIP (3:1), and the potential disposal of equipment prior to its useful service life if repairs parts were unavailable. EPA is providing a 25-year phase-out from the publication of the final rule for commercial use electronics, including hand-held or bench-top monitoring and control instruments. Based on publicly available information, the lifetime of commercial electronic and electronic equipment ranges from 6-15 years. EPA is aware that users of commercial electronic and electrical equipment often purchase service agreements that require that manufactures to provide replacement parts for the service of the equipment. Because of the cost to users of replacing such equipment before the end of the service life, and the cost of redesigning replacement parts for equipment already designed to use PIP (3:1)-containing replacements, EPA predicts that it would be impractical to set a compliance deadline that did not account for the service lives of such equipment. EPA contends that it is practicable, in this case, to set a compliance deadline and that a period of 15 years after the compliance deadline for the phase-out on new equipment (for a total of 25 years) is a practical solution given the various lengths of service life for the various types of equipment covered.*

Comment: An industry trade group (0290) requests the same compliance dates for outdoor power equipment as for new motor vehicles – 15 years after publication of the final rule – and for replacement parts - 30 years after publication of the final rule, noting that equipment manufactured with PIP (3:1) up until the 15-year compliance date will need replacement parts for at least 15 years after that time. A commenter (0305) representing HVAC manufacturers supports an exclusion for the continued sale of compliant replacement parts for articles containing PIP (3:1) for the lifetime of the equipment.

Response: *In response to comments, EPA is finalizing a 25-year phase-out for replacement parts for PIP (3:1)-containing replacement parts for use in power generating equipment, including outdoor power equipment and HVAC equipment, including refrigeration and hot water heating equipment. Based on publicly available information, the lifetime of this type of equipment is 5-20 years for outdoor power*

equipment and 10-20 years for HVAC equipment. The variability in expected lifetimes is accounted for by the variability in the types of equipment. Because of the cost to users of replacing such equipment before the end of the service life, and the cost of redesigning replacement parts for equipment already designed to use PIP (3:1)-containing replacements, EPA has concluded that it would be impractical to set a compliance deadline that did not account for the service lives of such equipment. While some types of equipment may last longer than 15 years, EPA selected 15 years as an average lifetime given the various lengths of service life for the various types of equipment covered. EPA contends that this 15-year period after the compliance deadline for the phase-out on new equipment (for a total of 25 years) is a practical solution given the various lengths of service life for the various types of equipment covered.

Comment: An industry trade group (0297) recommends that EPA provide an exclusion for heavy machinery used in automotive manufacturing and semiconductor manufacturing equipment, noting that these industries face the same challenges of finding an alternative as for producers of circuit boards and wire harnesses.

Response: *EPA declines the commenter's suggestion. The commenter did not provide sufficient information to demonstrate that these uses face the same challenges.*

Comment: An individual commenter (0283) asked EPA to specify that the time-limited exclusion in section 751.407 (b) for PIP (3:1) includes the responses in paragraphs (c), (d), and (e). This commenter stated that if it is not included, it will be more time-consuming to go through the necessary procedures before distributing the product, and the time-limited exclusion will have no effect.

An industry trade organization (0284) said that paragraphs (a)(2)(i) and (iv) should be described as exclusions in paragraph (a)(2)(iii).

Response: *Activities excluded in 40 CFR 751.407(b) are not subject to the prohibitions in paragraph 40 CFR 751.407(a). However, they are not excluded from the remaining paragraphs of the section that may apply. Further, paragraph (a)(2)(iii) prohibits the use of PIP (3:1) in articles after October 31, 2024, unless the use or article is subject to an exclusion or phase-out.*

Comment: Several commenters (0284, 0288, 0297, 0305, 0310) suggested that EPA establish a "manufactured by" compliance date for articles. An industry trade organization (0284) argued that the negative impact of strictly eliminating stocks based on a "distribution in commerce" deadline may cause enormous economic and environmental impact throughout the supply chain and encouraged EPA to only establish prohibition dates based on "manufactured by" dates for PIP (3:1)-containing articles. The commenter also suggested removing "in distribution in commerce" from the regulatory text. Some commenters (0296, 0284, 0288) note the need for manufactures make spare parts and store them for years. According to the commenter (0296), these parts are strategically stored in warehouses to be called into service years and even decades after production and forcing the commenter's members to render these replacement parts obsolete and manufacture new ones for equipment designed and developed decades ago would be unreasonable and impracticable. Another industry trade organization (0297) asked EPA to reiterate that the provision at section 751.401(b)(1) permits an article or product to be re-distributed, leased, or re-sold, and permits the importation and movement within the United States of complex manufacturing equipment and durable goods that might contain PIP (3:1)- containing components manufactured prior to the date of the final prohibition.

Response: *EPA has noted commenters' concern that a compliance deadline for a ban on distribution in commerce that does not account for the movement of parts through the supply chain after the compliance date for manufacturing and processing is reached might strand inventory. In response to these comments,*

EPA is addressing the distribution in commerce of certain PIP (3:1)-containing articles, like used cars, aerospace vehicles, and complex equipment. It was not EPA's intent to use its TSCA section 6(a) authorities to restrict the continued distribution and sale of complex articles like used cars and aerospace vehicles that may contain PIP (3:1)-containing parts but where no new PIP (3:1) has been added after the phase-in prohibition date. In addition, commenters have stated that used equipment and heavy machinery that could contain PIP (3:1) parts also need to be permitted to be distributed, even after the phase outs of the manufacturing and processing of such use. For these reasons, EPA is finalizing an exclusion for PIP (3:1).

EPA is adding a new exclusion in 40 CFR 751.407(b)(3)(i) to permit the distribution in commerce of PIP (3:1)-containing parts installed in vehicles described in paragraphs (a)(2)(v) through (viii) of that section, and in equipment described in paragraphs (a)(2)(ix) through (x) of that section, and the vehicles and equipment that contain such parts. Further, EPA is adding an exclusion at 40 CFR 751.407(b)(1)(viii) to allow for the processing and distribution in commerce of an article that contains PIP (3:1) for the purpose of repair or maintenance, as long as no new PIP (3:1) is added. Considered together, these provisions allow vehicles and equipment containing PIP (3:1) or PIP (3:1)-containing parts to be repaired and maintained by end users after a prohibition or phase-out prohibition as long as no new PIP (3:1) is added. They also allow not only end users to distribute PIP (3:1)-containing vehicles and equipment, but also commercial entities who might acquire such vehicles and equipment to refurbish and re-sell or lease the vehicles or equipment. EPA is not extending these provisions to PIP (3:1)-containing products and parts, new or replacement, outside of the phase-out periods.

EPA is not establishing a general "manufactured-by" compliance date for all articles. As stated in the Response to Comments to the 2019 PBT proposed rule, EPA does not think, unless otherwise specified, that products and articles containing PBT chemicals should continue to be distributed without end, and therefore is not adopting a generally applicable "manufactured-by" provision. EPA acknowledged there that it will be very difficult, if not impossible, for purchasers and compliance inspectors to tell the difference between most products based on when they were produced, and thus EPA is establishing deadlines by which products and articles containing PIP (3:1) may no longer be processed and distributed unless otherwise excluded for practicability reasons. This approach discourages stockpiling while still allowing meaningful flexibilities with alternative compliance deadlines where such an alternative is appropriate.

Comment: Industry trade organizations (0293, 0297, 0301) said that the PIP (3:1) exclusion should allow for sales of existing articles and spare parts by basing compliance on the date of manufacture rather than the date of sale. One commenter (0301) said that many items will have been manufactured before October 31, 2024, but will still be in inventory and not yet distributed in commerce; it would be costly for the economy and the environment to have to dispose of these items. Another commenter (0297) recommended that PIP (3:1)-containing products that have been manufactured prior to the final prohibition dates in the final rule may continue to be processed in the United States, distributed (i.e., "sold through"), and used indefinitely, including those that might be situated in warehouses or in the channels of trade and transportation in the United States and abroad.

An industry trade organization (0293) argued that it is not reasonable or practical to base compliance on the date of sale rather than on date of manufacture, reasoning that the risk of exposure from home appliances is minimal for consumers, and suggested that EPA consider the costs to consumers, manufacturers, and the environment associated with disposing of products that are existing but that cannot be sold after the compliance date. The commenter added that disposing complete and functional units that are still on the shelves after the October 2024 compliance date will be worse for the

environment. For example, the commenter said that requiring immediate disposal would be contrary to the principle of sustainability, by requiring disposal of reasonably safe products that have not been used. The commenter also noted that disposing of products may result in reduced product availability for consumers.

Response: *EPA is not finalizing a manufacture by date as requested by commenters, as discussed elsewhere in this document, for example discussed in the previous comment response. However, EPA is finalizing an additional two years after the ban on processing for further distribution in commerce for articles subject to the October 31, 2024 compliance deadline to allow for sales and to clear the supply chain of PIP (3:1)-containing existing articles and spare parts that do not otherwise have an extended phase-out or exclusion. This approach will allow for the continued distribution of goods subject to the October 31, 2024 compliance deadline while the long phase-out periods for new and replacement parts, as discussed in section 2.3.2, 2.3.3, and in comments in this section of this Response to Comment Document, will allow manufacturers time to manage replacement part stocks for the articles covered by phase-outs in 40 CFR 751.407(a).*

Comment: An industry trade organization (0297) expressed support for an exclusion for recycling PIP (3:1)-containing products and articles and products made from recycled plastics. The commenter stated that this approach avoids the unintentional consequence of a prohibition on PIP (3:1)-containing articles, which can lead to unnecessary disposal and environmental loading where reuse and recycling can occur instead.

Another commenter (0313) explained that the failure to regulate recycling-related exposures is contrary to TSCA and that they "explained in 2021 why the other rationales EPA offered for the recycling exclusions are insufficient under TSCA." This commenter stated that this approach "will perpetuate exposure to the PBT chemicals for workers, other higher-risk populations, the general population, and wildlife for years to come." This commenter was concerned with recycling-related exposures to the PBT chemicals that affect recycling workers, people living near recycling facilities, and consumers who use recycled-content products. The commenter recommended modifying the proposed amendments and stated that the recycling exclusion could not be justified on cost-effectiveness grounds. The commenter suggested that, to the extent that recycling of PIP (3:1)-containing plastic continues, EPA must also establish measures to reduce recycling-related occupational exposures to the PBT chemicals to the extent practicable.

Response: *For the reasons outlined in both the proposed rule and 2021 PBT final rules, at this time EPA is not using its TSCA section 6(a) authorities to regulate all activities or exposures to PIP (3:1); one such activity is recycling. EPA further explained that it recognized the importance and impact of recycling, which contributes to the protection of the environment, and that it would be overly burdensome and not practicable to impose restrictions on the recycling of plastics that may contain PIP (3:1), or on the use of such recycled plastic in plastic articles. As to the assertion that the rationales offered for the recycling exclusions are insufficient, and that this was explained in comments in 2021, EPA continues to disagree. EPA explained previously that PIP (3:1), if present, is typically present in materials being recycled at low levels and that banning the recycling of plastics containing PIP (3:1) would require PIP (3:1)-containing plastic to be identified through prohibitively expensive and complicated testing, and separated from other types of plastic before recycling, which is usually done manually. Commenter's suggestion that simple methods for detecting low levels of PIP (3:1) in plastics in the recycling stream is not supported, as taking samples from each individual piece of plastic, sending the samples to a lab, and assaying for PIP (3:1) via gas chromatography/mass spectrometry is not feasible for even a small number of plastic items being recycled per day. EPA concluded that it would be difficult to sort plastic for this purpose and that it would be overly burdensome and not practicable to prohibit recycling of PIP (3:1)-containing plastic in*

the United States.

Comment: A chemical manufacturer/importer (0298) encouraged the continued inclusion of the hydraulic fluid critical use exclusion from prohibition, and asked EPA to explicitly state that this language will remain in the final rule. This commenter emphasized that the 30-year timeframe should be the minimum time limit under consideration due to the extensive research and development activities necessary to identify possible alternatives, product testing, and approvals before circulation into use.

Response: *EPA thanks the commenter and is retaining the hydraulic fluid exclusion.*

Comment: An industry trade organization (0297) requested that EPA re-state that downstream notification requirements of the PBT rules do not extend to manufactured PBT-containing articles when such articles are not normally accompanied by a safety data sheet (SDS).

Response*: EPA is not amending its position as stated in the response to comments to the 2019 PBT proposed rule (see section 3.6 in that document), namely that the downstream notification requirement applies only to PIP (3:1) and PIP (3:1)-containing products that would normally be accompanied by a safety data sheet.*

Comment: A chemical manufacturer/importer (0302) suggested that the proposed regulation be revised to require notice only in either section 15 or section 1 of the SDS and argued that there is no justification for requiring two instances of the same warning notice in an SDS. Further, the commenter suggested that the mandatory language for downstream notification of PIP (3:1) be amended to conform to the terms of any revised exemptions when final. Additionally, adequate time must be given to transition to new labels according to the commenter. For aviation turbine oil products, the commenter suggested that:

- manufacturers using labels to notify be required to commence using the "new" labels for new production by the earlier of (a) the next change in printed labels or (a) two years from the effective date of the amended rule (to account for existing label stocks);
- processors or distributors would be authorized to provide notice using the "old" labels until all product with the old labels clears the channels of trade; and
- nothing should preclude manufacturers, processors or distributors from using an updated SDS with the "new" information when distributing products with the "old" label.

Finally, the commenter suggested adding the following new subsection to 40 CFR 751.407(e): "(5) processors and distributors providing the notification required by subsection (2) of this paragraph may limit the text from subsection (3) applied to its label or SDS to text describing the specific exemptions applicable to the product being processed or distributed, and may omit text from subsection (3) from its label or SDS describing other exempt uses."

Response: *EPA is amending the text of the downstream notification to conform to the terms of the prohibitions in the final rule. EPA is not amending the requirement that the downstream notification appear in sections 1 and 15 of the SDS sheet.*

Finally, EPA agrees with the commenter that the Agency should provide adequate time to transition to new labels. In considering what a practicable amount of time is to transition to a new label, EPA considered 40 CFR 152.130(c), which addresses amendments to pesticide labels under FIFRA and generally provides an 18-month transition period for registrant-initiated label changes. EPA is providing a 3-month transition period to update SDS sheets and an 18-month transition period for updating labels. EPA believes that this transition periods should allow time to clear product with old labels through channels of trade. During the 3-month transition period, downstream notification under 40 CFR

751.407(e)(1) and (2) is still required; entities may use the new information provided in new 40 CFR 751.407(e)(3) or existing notification consistent with the restrictions described in this subpart. During the 15-month period between the SDS revision date and the label revision date, manufacturers, processors, or distributors are required to provide the updated SDS with the "new" information when distributing products with the "old" label.

Section 2.4 – Recordkeeping requirements

Comment: An industry trade organization (0305) expressed support for EPA's proposal to extend recordkeeping requirements to 5 years. Similarly, a Tribal government (0313) wrote in support of extending the recordkeeping requirements. The commenter noted that this new five-year retention period would align with other section 6(a) rules that regulate occupational exposures, other sections of TSCA with requirements to retain records related to compliance, and the statute of limitations for pursuing civil fines and penalties under TSCA. This comment stated that there is no reasonable argument that this enforcement measure would burden industry, given that these records are likely electronic, and suggested that EPA should finalize the changes to the reporting requirements it has proposed. The commenter also supported the provision to allow EPA to request compliance records within 30 days but urged EPA to "go further and require regulated parties to submit all records that demonstrate compliance with the final rules to EPA."

Response: *EPA thanks the commenters for their support of this aspect of the proposed rule and agrees that the recordkeeping requirement will not be overly burdensome to industry since it makes use of ordinary business records. EPA is not, however, requiring regulated parties to submit records demonstrating compliance with the final rules as the Agency believes this would be overly burdensome in this instance.*

Comment: A chemical manufacturer/importer (0302) said that the recordkeeping procedures for "exempt" PIP (3:1) products should not be changed. Particularly, the commenter expressed opposition to the proposed removal of the 30-day timeframe to make records available and said that the Agency did not articulate why 30 days is now inadequate and why it would be critical to obtain, review, and action on records in less than 30 days.

Response: *As discussed in the proposed rule the removal of the 30-day time frame to make records available is critical to the Agency's ability to promptly identify and correct noncompliance. EPA believes that regulated entities should have the records demonstrating compliance readily available due to previous recordkeeping requirements for decaBDE and PIP (3:1) under TSCA; this measure is intended to make use of ordinary business records and thus not be overly burdensome to industry.*

Comment: An industry trade organization (0306) recommended "exempting the semiconductor manufacturing sector from the recordkeeping requirements due to the difficulty of tracking the chemical content of hundreds of thousands of component parts in manufacturing equipment and replacement parts when needed" due to the complexity of the semiconductor supply chain.

Response: *EPA disagrees with the suggestion to exempt the semiconductor manufacturing sector from the recordkeeping requirements. EPA believes that regulated entities, including the semiconductor manufacturing sector, should have records demonstrating compliance readily available due to previous recordkeeping requirements for decaBDE and PIP (3:1) under TSCA; this measure is intended to make use of ordinary business records and thus not be overly burdensome to industry. EPA acknowledges that tracking the chemical content of parts may be a challenge.*

Comment: A labor union (0312) expressed support for the proposed extension of requirements for

exposure records but requested that EPA require the records be made available to workers and their designated representative as well. The commenter stated that making exposure records available to workers would be consistent with similar OSHA regulations. Furthermore, the commenter recommended extending the recordkeeping requirements to a much longer period of time, suggesting 20-30 years as an appropriate timeframe. The commenter argued that the health effects due to exposure to toxic chemicals can exhibit long latency periods. This information, the commenter expressed, should be available to workers throughout the period of potential consequences of an exposure.

Response: *EPA thanks the commenter for their support but disagrees with the commenter's suggestion to make records available for 20-30 years. As discussed in the proposed rule, the final time frame of five years for maintaining records aligns with the statute of limitations for civil penalty enforcement (28 U.S.C. 2462) and is consistent with those associated with other TSCA section 6(a) rulemakings. The removal of the 30-day time frame to make records available is also critical to the Agency's ability to promptly identify and correct noncompliance. EPA believes that regulated entities should have the records demonstrating compliance readily available due to previous recordkeeping requirements for decaBDE and PIP (3:1) under TSCA; this measure is intended to make use of ordinary business records and thus not be overly burdensome to industry. In response to the request that EPA require records be made available to workers as well, EPA has modified the workplace protection records requirements for both PIP (3:1) and decaBDE to require that the owner or operator provide potentially exposed persons and their designated representative an opportunity to observe records related to the basis of the PPE or other control measure selection, including potential monitoring results that are representative of the potentially exposed person's exposure.*

Comment: A product distributor (0304) requested that the recordkeeping requirements exempt decaBDE-containing shipping pallet recycling operations. The commenter requested that EPA amend the proposed rule to codify existing practices rather than impose new requirements that will be focused on creating new and unnecessary tasks and additional paperwork.

Response: *EPA disagrees with the suggestion to exempt shipping pallet recycling operations from the recordkeeping requirements. EPA believes that regulated entities, including those pertaining to shipping pallet recycling operations, should have records demonstrating compliance readily available due to previous recordkeeping requirements for decaBDE under TSCA; this measure is intended to make use of ordinary business records and thus not be overly burdensome to industry.*

Section 2.5 - Regulatory Threshold Level for PIP (3:1) and decaBDE.

Comment: Several industry trade organizations (0288, 0292, 0293, 0297, 0305, 0306, 0308) requested that EPA establish a *de minimis* exemption. An industry trade organization (0292) stated that a *de minimis* threshold is consistent with TSCA's requirement to reduce exposures "to the extent practicable." Without a threshold, commenters stated that regulated entities would not know whether they are in compliance, as detection levels are constantly being reduced. One commenter (0292) contended it is unworkable and unreasonable for regulated entities to potentially have to continually test materials for the presence of trace levels of a material that has no appreciable risk associated with it. Another commenter (0305) said that PIP (3:1) is found in plastic parts and electrical components that are widely used across a broad range of manufactured articles globally and that these parts and components may be manufactured in the same facilities that produce components containing PIP (3:1), which has the potential for cross-contamination. One industry trade organization (0288) suggested that EPA adopt a threshold limit of no less than 0.001% for the presence of PIP (3:1) in imported articles measured against the weight of the article as a whole, as imported. The commenter argued that a maximum concentration of 0.001% for PIP is sufficiently protective, and that a certified and well-known lab indicates 0.0005% as a method detection limit (MDL)

for PIP (3:1) using EPA methods. Other commenters argued for a 0.1% level for PIP (0293, 0297, 0305, 0306), noting that 0.1% exemption by weight seems reasonable for most chemical substances. One commenter (0310) noted that a 0.1% threshold is used in EPA's export notification regulations for known or suspected carcinogens and is consistent with REACH and RoHS. Three commenters (0288, 0292, 0297) argued that a threshold is also needed for decaBDE and two recommended that EPA set it at 0.1% to align with other major regulatory regimes, such as the RoHS. One of the commenters recommended that, as a practical matter, EPA establish in all 6(h) regulations for PBTs a *de minimis* standard of 0.1% by weight of the finished product or article. One industry trade organization (0308) suggested that EPA also address confidential business information concerns and distinguish between intentionally added PIP (3:1) and unintentional impurities.

Response: *In the 2021 rule, EPA declined to establish a general exclusion for PIP (3:1) or decaBDE produced as a byproduct, present as an unintentional contaminant or present in what commenters describe as de minimis quantities (independent of the exclusion for recycled plastic), noting that where it is practicable to reduce exposures, TSCA provides no such exceptions. Given new information regarding the potential for cross-contamination in articles not intended to contain PIP (3:1) or decaBDE, EPA is establishing a regulatory threshold level of 0.1% by weight for unintentional amounts of PIP (3:1) and decaBDE in products and articles. For complex assemblies of articles, each individual article or component separately manufactured must meet the regulatory threshold level. This regulatory threshold level does not apply where PIP (3:1) or decaBDE are intentionally added. EPA is aware that PIP (3:1) may be intentionally added in extremely low levels in the manufacturing and processing of certain products and articles (for example, in the production of certain photographic films). Since PIP (3:1) and decaBDE are additive chemicals and are not known to be present as byproducts, where it is practicable to prohibit or phase-out known, intentional uses, EPA is not establishing a regulatory threshold level. EPA is using the 0.1% level for PIP (3:1) and decaBDE consistent with EPA export regulations and regulations by other governing bodies, such as RoHS. EPA is not aware of international regulations that set a regulatory threshold level for unintentional levels of PIP (3:1). EPA reasons that commenters are already familiar with regulations in both the United States and EU that contain regulatory threshold level for the variety of articles subject to the RoHS limit of 0.1% for decaBDE and, given this familiarity, will be able to comply with a regulatory threshold level of 0.1% for unintentional levels of PIP (3:1). In addition, several commenters suggested that this regulatory threshold level was practicable since they recommended a regulatory threshold level no lower than 0.1% by weight. EPA is not requiring testing, although companies may choose to do so if they believe contaminant or unintentional levels may be present and wish to document that the levels are below the regulatory threshold level. EPA is not establishing a regulatory threshold level for unintentional amounts of other PBTs at this time.*

Comment: Two commenters (0293, 0305) argued that without a *de minimis* it would be impossible for manufacturers to develop methods to incorporate recycled materials into their products.

Response: *EPA has excluded from the provision regulating decaBDE and PIP (3:1) the processing and distribution in commerce for recycling of decaBDE- and PIP (3:1)-containing plastic from products or articles and decaBDE-containing and PIP (3:1)-containing products or articles made from such recycled plastic, where no new decaBDE or PIP (3:1) is added during the recycling or production process.*

Comment: Commenters (0288, 0308) also noted that it is difficult for companies to obtain assurances regarding the presence of PBTs in their supply chains regarding the occurrence of PIP (3:1) in products and articles. One of the commenters (0308) argues that many companies lack the systems or expertise to gather and store relevant chemical data for the components and parts they manufacture and distribute, and that due to confidential business information (CBI) protections many bulk chemical manufacturers conceal the composition of their products, making downstream reporting extremely challenging to accomplish. The commenter also noted that international suppliers follow various global regulations that differ from each other, deepening the data collection obstacles faced by the global supply chain. Another

commenter (0288) noted that while a complete prohibition of PIP (3:1) and decaBDE in articles may seem straightforward from a regulatory perspective, it is not so straightforward in reality when no *de minimis* thresholds are specified. The commenter argued that these difficulties are amplified when the regulator has given no indication of what constitutes sufficient due diligence.

Response: *EPA believes that there are any number of reasonable steps that can be taken to determine whether a product or article is compliant with the final PBT regulations, such as contract specifications that describe the chemicals that may not be used, or a statement from the supplier that the articles furnished do not contain specific prohibited chemicals. In circumstances where companies are unable to obtain assurances, track data, or identify the presence of a chemical, testing is an option.*

Section 2.6 - Other comments about the proposed and alternative regulatory actions

Comment: An industry trade organization (0286) expressed support for the proposed workplace safety protections.

Several commenters discussed the hierarchy of controls. A union (0312) stated that they applaud EPA for dropping the unwarranted assumptions about PPE use in the proposed rule. This commenter stated that OSHA has no PBT health standard, and thus no standard that either establishes a permissible exposure limit (PEL) for PBTs or expressly prescribes appropriate PPE use to protect workers from exposure. However, the commenter stated that the proposed rule does nothing more than require employers to continue to follow whatever practices they have followed to date, even if that means simply providing workers with respirators, the control measure that falls at the very bottom of the hierarchy, or more likely, no respiratory protection at all without an OSHA standard. This commenter also stated that nothing in the proposed text requires owners/operators to evaluate the exposures in their workplaces and implement controls according to the hierarchy and deemed this unacceptable. This commenter suggested that EPA strengthen these provisions by explicitly requiring any owner or operator of a workplace with potential PBT exposures to implement protections along the lines of the workplace chemical protection programs (WCPPs) has proposed for its other risk management rules, with suggested modifications.

A Tribal government (0313) argued that EPA's proposal to rely exclusively on PPE is incompatible with the hierarchy of controls and ignores the ability of industry to move beyond existing controls and improve exposure control technology over time. This commenter suggested revising EPA's approach to reduce occupational exposures and suggested a requirement for owners and operators to install engineering and administrative controls to the extent that they are practicable.

An industry trade organization (0292) stated that the proposed regulations do not recognize that there are likely other hazards that need to be assessed and controlled at specific sites. This commenter stated that "overly focusing on one potential exposure can compromise attention to other known hazards." This commenter suggested that there may be trade-offs in safety as the result of requirements for uses of respirators and dermal protection that can result in new hazards such as limited vision, impeded mobility, or added susceptibility to heat stress that should be considered before requiring new, previously unused PPE. The commenter recommended that EPA defer to the expertise of onsite occupational safety and health professionals in identifying potential hazards and prescribing necessary exposure controls.

An industry trade organization (0307) stated that EPA is setting a precedent by requiring worker protection standards beyond those required by OSHA and has an obligation under TSCA section 9(a) to consult with OSHA before superseding OSHA authority if EPA believes that certain workplace risks are not adequately controlled. Further, the commenter argued that EPA offers no substantive rationale for assuming that OSHA requirements are not being met or are inadequate and suggested increased

coordination between EPA and OSHA.

Response: *EPA disagrees with the commenter that "the proposed rule does nothing more than require employers to continue to follow whatever practices they have followed to date, even if that means simply providing workers with respirators." Although the worker protection requirements were informed, in part, by existing industry practices, these requirements will reduce exposed persons involved in the manufacturing and processing PIP (3:1) and decaBDE, including at facilities where worker protections are not currently in place due to them not previously being required.*

In response to the comments on developing a WCPP for these two chemicals, EPA does not think it is practicable to require a workplace chemical protection program similar to what EPA has proposed for other risk management rules where EPA has developed an existing chemical exposure limit, which was neither required nor feasible given the statutory timeline for promulgation of rules under TSCA section 6(h). Although many of the uses where workplace requirements are being finalized include requirements to supply PPE, the last method of control in the hierarchy of controls, EPA disagrees with commenters that the hierarchy of controls was not considered as a part of this rulemaking. For example, the requirement to supply PPE is limited to the regulated area, which must be established where "airborne concentrations or direct dermal contact of a specific chemical substance can reasonably be expected." 40 CFR 751.403. The establishment of the regulated area provides flexibility to owners/operators to first utilize one or a combination of elimination, substitution, engineering controls, or administrative controls to reduce or eliminate the necessity to demarcate a regulated area by eliminating any areas where exposure can "reasonably be expected." If exposure to the chemical is no longer reasonably expected due to these controls, the owner/operator would not be required to establish a regulated area and the requirement to supply PPE to potentially exposed persons under 40 CFR 751.405(e) and 751.407(f) for decaBDE and PIP (3:1), respectively, would not apply. EPA discusses this further in Unit II.C.4 in the preamble to the final rule.

Comment: An industry trade organization (0288) requested that EPA should adopt a due diligence approach to allow for the complexity of the global supply chain and the time required to produce compliant components. This commenter suggested a threshold limit of no less than 0.001% for the presence of PIP (3:1) in imported articles and no less than 0.1% for decaBDE in homogenous materials. The commenter suggested that the due diligence approach should include the following steps: 1) use TSCA's "known or reasonably ascertainable by" standard; 2) communicate with direct suppliers that parts must comply with the TSCA PBT restrictions; 3) ask direct suppliers to provide written declaration of compliance for parts that are compliant with PBT restrictions; 4) weigh supplier declarations of compliance against the company's independent assessments of the likelihood that the part could contain restricted substances; and 5) conduct testing on representative part samples as a method to confirm compliance. Another commenter (0296) recommended establishing an affirmative defense for producers of automation technology products who are found in violation of the prohibition on PIP (3:1)-containing articles.

Response: *EPA thanks the commenter but is not finalizing a due diligence approach in this final rule. The "known or reasonably ascertainable by" standard is the reporting standard in TSCA section 8(a) and not within the scope of this rulemaking under TSCA section 6(h). However, EPA agrees that there are steps that can be taken to ensure compliance, including the steps the commenter lists, namely communicating to direct suppliers that parts must comply with the TSCA PBT restrictions, asking direct suppliers to provide written declaration of compliance for parts that are compliant with PBT restrictions, and weighing supplier declarations of compliance against the company's independent assessments of the likelihood that the part could contain restricted substances. EPA previously identified the same or similar steps that*

could be taken in the Response to Comment document on the 2019 PBT proposed rule. As noted there, testing is always an option, albeit a more expensive one. In the event that noncompliance is discovered, EPA will determine an appropriate response based, among other things, on the good faith efforts of the entity involved. This would include the steps taken by the entity, including those just described, to ensure compliance.

Comment: An industry trade organization (0292) suggested that EPA align its owner/operator definition to OSHA's definition of "employer". The commenter said that it understands the intent in defining owner/operator instead of employer is to ensure that workers that have not previously been covered under the OSH Act are protected under TSCA. However, the commenter said that the proposed definition implies that the person or company overseeing the worksite is responsible for all aspects of managing the chemical in the workplace, including providing PPE, training workers, and maintaining records. The commenter said that this presents concerns for multi-employer workplaces or employers who have a mobile workforce.

Response: *Under TSCA section 6(h)(4), EPA is required to use the authorities under TSCA section 6(a) to address the risks of injury to health or the environment posed by PBTs and to reduce exposure to the substance to the extent practicable. Under TSCA section 6, EPA has authority to regulate occupational exposure from chemical substances and is not constrained by employment relationships. Due to the potential for exposure of third-party persons performing work for the owner or operator, EPA is maintaining the "owner or operator" terminology in this rulemaking. The term includes any person who owns, leases, operates, controls, or supervises such a workplace. While owners or operators remain responsible for ensuring compliance with the workplace requirements, they may contract with others to provide training or implement a respiratory protection program, for example. EPA believes that this approach is essential for addressing the potential for exposure from PIP (3:1) and decaBDE, including to individuals who may not be covered by OSHA requirements, such as self-employed persons, and state and local government workers in States which do not have an OSHA-approved State Plan.*

EPA defined "owner or operator" in 40 CFR 751.5 under EPA's regulation, "Methylene Chloride; Regulation under the Toxic Substances Control Act (TSCA)" as "any person who owns, leases, operates, controls, or supervises a workplace covered by this part." This definition applies to PBT chemicals and EPA is not establishing a different definition under 40 CFR 751.403.

Comment: A product manufacturer/importer (0295) suggested that instead of requiring an owner/operator to "supply a respirator", the rule should require the owner/operator to "ensure a respirator is utilized when working in the regulated area." The commenter notes that 40 CFR 751.407(f)(2)(iii) in the rule says a respirator must be supplied by the owner/operator, and that working within OSHA's Respiratory Protection requirements, if a person that is required to be in the regulated area is not an employee of the owner/operator, the owner/operator could not practically facilitate this person being medically cleared to wear a respirator, trained and fit-tested for the specific make and model of respirator.

Response: *EPA thanks this commenter for its feedback. As discussed above, EPA agrees that the rule should require the owner/operator to ensure that a respirator is provided, and also used. It is not the intent for this rule to require owner/operators with regulated areas to repeat medical clearance, training, and fit-testing of non-employees (e.g., contractors) who have already received medical clearance, training, and fit-testing from their employer consistent with 29 CFR 1910.134, as cross-referenced in 40 CFR 751.407(f). EPA will make this revision in the final rule.*

Comment: An industry trade organization (0292) suggested that EPA align its definition of regulated area to that of OSHA so as to avoid confusion in regulated workplaces. A product manufacturer/importer

(0295) and an industry trade organization (0297) suggested that EPA remove the term "direct dermal contact" from the definition of regulated area and remove related verbiage associated with regulated areas within 40 CFR 751.405(e) and 751.407(f). The commenter said that this will make the definition consistent across TSCA rules.

Response: *EPA thanks the commenters and will make the suggested changes regarding regulated areas for clarity in the final rule. EPA agrees with commenter that dermal contact is generally not the driver for regulated areas. EPA is removing the term "direct dermal contact" from the definition of regulated area and remove related verbiage associated with regulated areas within 40 CFR 751.405(e) and 751.407(f) in order to be consistent with OSHA and other regulations under TSCA.*

Comment: An industry trade organization (0297) requested that EPA not revisit or modify the positions expressed in the final PBT rules, specifically providing that "articles" that contain the identified PBT substances will not be subject to the TSCA Section 12 export notification requirements or the Section 13 import certification requirements.

Response: *In this final rule, EPA is not requiring export notification under TSCA section 12 or import certification under TSCA section 13 for PIP (3:1)-containing articles. The export/import requirements for decaBDE were discussed above in section 2.2.5 of this document.*

Comment: An industry trade organization (0297) suggested that EPA establish a mechanism whereby regulated entities could contact the Agency voluntarily to seek some form of enforcement discretion or an informal extension to the compliance dates based on their needs.

Response: *EPA thanks the commenter for the suggestion. There is no provision under TSCA for the informal extension of compliance dates. Future amendments to the phaseouts in this rule would require additional rulemaking. Thus, EPA is not adopting a mechanism for informal extensions in the final rule. EPA emphasizes that, as part of the 2021 rulemaking and this rulemaking processes, EPA has met with stakeholders and encouraged stakeholders to inform EPA of any ongoing activity with decaBDE and PIP (3:1) and products or articles containing decaBDE or PIP (3:1), and the prohibitions or phase-out approaches in the final rule take the information gathered into consideration. Thus, EPA does not expect the need for some kind of established process for obtaining an informal extension. However, EPA does encourage communication from stakeholders and others affected by its rules as soon as possible if there are future concerns with the compliance dates.*

Comment: A Tribal government (0313) disagreed with EPA's statement that the proposed rule would not have Tribal implications. The commenter stated that recent data have shown elevated levels of decaBDE in salmon and other anadromous and freshwater fish. The commenter stated that their Tribal nation is at greater risk of exposure to decaBDE through contamination in these fish and other game as well as their geographic proximity to open waste burning at rural transfer stations and higher exposure to the environment through cultural, traditional, and ceremonial activities. The commenter argued that their community should be considered a PESS. Another Tribal government (0303) also disagreed that TSCA rules do not have a substantial direct effect on Tribes. The commenter said that, as they have communicated to EPA on multiple occasions, any regulatory action that pertains to PBTs and other chemicals that release to the environment has the potential for substantial effects on Tribal governments.

Response: *EPA acknowledges these commenters' concerns, but as stated in the final rule, this action does not have Tribal implications as specified in Executive Order 13175 (65 FR 67249, November 9, 2000), because it will not have substantial direct effects on Tribal governments, on the relationship between the Federal government and the Indian Tribes, or on the distribution of power and responsibilities between the Federal government and Indian Tribes. As noted in the Economic Analysis, no Tribal government is*

expected to engage in the manufacture, import, sale, or use of decaBDE or PIP (3:1), and thus Tribal governments would not incur direct compliance costs as a result of the rule. As for designating communities as potentially exposed and susceptible subpopulations (PESS), EPA identified and included available information about PESS during the development of both the Exposure and Use Assessment and the Hazard Summary in the 2021 final rules. EPA is finalizing restrictions that will reduce processing and distribution activities and will prohibit releases to water from manufacturing, processing and distribution that are ongoing, which will collectively reduce the potential for exposure to fence line and downstream communities.

Comment: A commenter (0313) requested that EPA establish a maximum level of decaBDE contamination in land applied sewage sludge or "biosolids", arguing that EPA must do so to protect the environment, wildlife, and exposed Tribal nations and communities. Another commenter (0303) also suggested that EPA should require limitations on the release of PBT chemicals in biosolids before land application and require wastewater treatment technologies that have proven effective in reducing concentrations of PBTs in wastewater.

Response: *EPA is not using its section 6 authority to regulate biosolids and, in particular, set a maximum level of contamination. While in this final rule, EPA is prohibiting the release of decaBDE to water during the manufacturing, processing, and distribution of decaBDE, and has already done so for PIP (3:1), EPA is also not using its section 6 authority to adopt disposal requirements that would effectively require wastewater treatment plants to test for PBTs and install treatment technologies to remove PBTs. See section 2.2.3.*

Section 3 – The reasonably ascertainable economic consequences of the proposed rule

Section 3.1 – Costs

Comment: An association (0289) contends that EPA needs to provide an exemption period longer than 5 years for the processing and distribution of PIP (3:1) in lubricants and greases for phase-out due to the significant time and resources required for material changes, noting that over 90 percent of U.S. marine manufacturers are small businesses with little or no resources to conduct material testing. They state that any changes to materials used in marine parts will require extensive testing, validation, and regulatory compliance. This process involves collaboration with multiple stakeholders, including manufacturers, suppliers, standard setting bodies and government agencies, including EPA, to ensure the safety, performance, and compliance of the new materials.

Response: *EPA appreciates the commenter's concern regarding the level of investment needed to find a substitute for PIP (3:1). In the proposed rule's Economic Analysis (Section 3.32), EPA notes that the processing and distribution in commerce of PIP (3:1) and PIP (3:1)-containing articles was prohibited under the 2021 final rule and the compliance date was extended to October 2024 (40 CFR 751.401(a)(2)(iii)). EPA's final rule extends the time until prohibition for certain articles. For example, the final rule prohibits the processing and distribution of PIP (3:1) and the manufacturing, processing, and distribution of PIP (3:1)-containing products and articles for use in manufacturing equipment and production and other equipment used in the semiconductor industry after 10 years. The cost of prohibition was already considered for the 2021 rule, and the effect of this proposed rule's compliance date extension would effectively be a cost savings for these companies. EPA also analyzed small business impacts and did not find impacts (defined as cost-revenue ratios above 1%) to impacted industries such as boat manufacturing and petroleum lubricating oil and grease manufacturing. EPA, however,*

appreciates the commenter's concern regarding the level of investment needed to find a substitute for PIP (3:1). In the final rule, EPA is extending the compliance deadline for lubricants and greases from 5 years to 15 years. EPA is also imposing a 10-year phase-out on PIP (3:1) and PIP (3:1)-containing products and articles for use in manufacturing equipment and the semiconductor industry, providing an additional two-year exemption for distribution of articles and allowing manufacturing, processing, and distribution in commerce of PIP (3:1) for use in replacement parts for the service life of the product.

Comment: An industry trade organization (0292) stated that EPA's EA estimates annual costs much higher than other recent rulemaking actions under TSCA. The commenter remarked that this is due to the large number of firms that use PIP (3:1), the stringency of the requirements for firms to reduce worker exposure, and the additional time for exclusions. The commenter expressed that EO 12866 recommends choosing a regulatory alternative with the highest net benefits, and the commenter added that requirements that allow for more cost-effective and practicable control of worker exposure could be such an alternative. The commenter urged EPA to consider this option and stated that such an alternative would also better align with the requirements of the Paperwork Reduction Act.

Response: *EPA believes that the number of firms impacted by the rule was accurately estimated based on the data available regarding the use of PIP 3:1. EPA also believe that costs have been properly assessed to reflect the PPE requirements and prohibitions apart from the cost of labeling as noted in response to comment # 0304 below. The commenter is correct to assert that the costs are relatively high for this rule due to the large number of firms impacted.*

As noted in chapter 4 of the Economic Analysis, economic analyses of chemical regulations often include a quantitative analysis of reductions in exposures. These analyses are based on a risk evaluation. TSCA section 6(h) did not require a risk evaluation for chemicals identified as PBT. Because EPA did not conduct risk evaluations for DecaBDE and PIP (3:1), it was not possible to perform a quantitative analysis of the benefits of reduced exposures resulting from the rulemaking. Therefore, net benefits of the rules could not be quantitatively estimated.

In terms of the potential exposure reductions resulting from the proposed rule, as noted in Chapter 4 of the Economic Analysis, EPA estimates that 405,696 workers under the proposed option and 85,452 workers under the alternative option will benefit from reduced inhalation exposure from wearing respirators. In addition, 176,221 workers under the proposed option and 63,378 workers under the alternative option will benefit from wearing the required dermal protection. EPA also estimates that approximately 21,204 products under the proposed option and 4,573 products under the alternative option will be reformulated without DecaBDE or PIP (3:1). This will also reduce exposure from use of DecaBDE or PIP (3:1) products.

Comment: Trade associations (0301/0352) stated that once the ban becomes effective, "more than 50 percent of U.S. capacity to manufacture could be idled due to the inability to service the equipment with replacement parts that do not include PIP. The longer it takes to develop an alternative or for the supply chain of spare parts to develop qualifying alternatives, the greater the percentage of our production capacity will be idled. The average age of equipment in place on factory floors in the United States is ten years with life expectancy up to 30, 40, or more years. Any machine older than seven years typically requires maintenance with fluids, electronics, motors, or wiring one to two times a year. Not all those service calls will be for PIP (3:1) impacted parts, but it takes only one instance to render the machine unserviceable.

While the United States accounts for about 8 percent of world demand for manufacturing technology, that percentage likely is not large enough to provide the economic incentive to develop, seek approval and

produce new qualifying products that exclude PIP (3:1) quickly. Existing equipment will be unusable in one or two service cycles as essential parts become unavailable. Spare parts containing PIP (3:1) will be available to manufacturers in other countries but will not be available in the United States. And the supply of new machines also will be impacted for several years until the supply chain is able identify, find, and integrate replacements. The disruption to U.S. manufacturing processes caused by the loss of these machines could scale into the hundreds of billions of dollars before a substitute and qualifying replacement parts are in place. The Association urges that replacement parts be exempt from the ban for the lifetime of the equipment or, at a minimum, exempt the parts already produced up to the ban's effective date.

Secondly, a significant portion of U.S. manufacturing technology equipment stock is at risk of dropping out of stock for five years or more. It may become worthless without an alternative material for PIP (3:1). The Association estimates that there is approximately $175 billion of capital stock in manufacturing technology currently in U.S. plants. The percentage of the stock impacted or containing PIP (3:1) is unknown, but it is substantial.

Our calculation estimated above is solely for the machine tool portion of the manufacturing equipment market. Machine tools' portion of manufacturing technology stock is only about 10 percent on a dollar basis. The other 90 percent is composed of products such as consumables, cutting tools, advanced automation, and materials handling. Therefore, it is not unreasonable to assume that the amount of manufacturing technology capital stock impacted by the ban could be ten times that of machine tools or nearly $1 trillion.

The impact of even a fraction of a trillion dollars of capital equipment leaving productive use permanently in a short time period due to the PIP (3:1) ban would be devasting to our economy. Beyond the economic impact, there is the impact on the defense industrial base and our national security. As others noted in their 2021 industry comments, the ban of PIP (3:1) in aerospace and defense could stop domestic and international travel and critically restrict the uses of existing military technologies."

Response: *EPA thanks the commentor for providing estimates of the potential economic impact of the rule. Supply chain and reformulation costs were discussed in Section 4.3 of the Economic Analysis. EPA believes it is practicable for industry to identify the components of their supply chain that contain PIP (3:1), then find and test suitable alternatives within the timeframe of the compliance delays built into the rule. The commenter's costs portray the entire value of the physical capital manufacturing stock in U.S. plants. EPA believes that not all parts and articles within this stock actually contains PIP (3:1).*

EPA, however, recognizes the risk to a large portion of the manufacturing stock if the replacement parts that do contain PIP (3:1) are no longer available, even for a short period of time as the commenter notes. Therefore, for the final rule EPA is increasing the compliance timeframe across multiple industries for replacement parts. EPA is finalizing an approach that accounts for the variability of service lives of the different types of equipment both within each category described above and between categories. For manufacturing equipment, including off-road machinery, EPA is allowing for the processing and distribution in commerce of PIP (3:1), the manufacturing, processing, and distribution in commerce of PIP (3:1)-containing products for use in replacement parts, and the manufacturing and processing of replacement parts containing PIP (3:1) for the service lives of such equipment. Based on comments received, manufacturing equipment can survive in operation for decades. For heating, ventilation, air-conditioning, refrigeration, and water-heating equipment, and for power generating equipment, EPA is allowing for the processing and distribution in commerce of PIP (3:1) and manufacturing, processing, and distribution in commerce of PIP (3:1) products for use in replacement parts, and manufacturing, processing, and distribution in commerce of PIP (3:1)-containing replacement parts for 15 years after the

manufacturing ban on PIP (3:1)-containing parts for such new equipment, for a total of 25 years. The Agency separated the electronic equipment category into three sub-categories: consumer use, commercial, and laboratory. For the laboratory category, EPA is allowing for the processing and distribution of PIP (3:1) and manufacturing, processing, and distribution in commerce of PIP (3:1)-containing products for use in replacement parts, and manufacturing and processing of replacement parts containing PIP (3:1), for the service lives of such equipment. As with manufacturing equipment, based on comments received, laboratory equipment can last for decades. For the commercial category, the Agency is allowing an additional 15 years for the processing and distribution in commerce of PIP (3:1), manufacturing, processing, and distribution in commerce of PIP (3:1)-containing products for use in replacement parts, and manufacturing and processing of PIP (3:1)-containing replacement parts for use in such equipment, after the manufacturing ban on PIP (3:1)-containing parts for new equipment, for a total of 25 years. For both of the commercial and laboratory categories, users often enter into contracts that require manufacturers or dealers to provide ongoing maintenance for extended periods of time. For the processing and distribution in commerce of PIP (3:1) and the manufacturing, processing, and distribution in commerce of PIP (3:1)-containing products for use in replacement parts for consumer electronic equipment and the manufacturing and processing of PIP (3:1)-containing replacement parts for consumer electronic equipment, EPA is setting a compliance deadline of 7 years. This aligns with right-to-repair laws that have been passed or are pending in many states. While only California, Colorado, Minnesota, and New York have passed right to repair laws, 30 states are considering right to repair laws that address agricultural, digital/electronic, or other equipment categories (e.g., motor vehicles, wheelchairs).

Comment: A product distributor (0304) requests that the recordkeeping requirements specified in proposed rule should exempt recycling operations. They asserted that imposing new recordkeeping requirements for shipping pallet recycling operations is impracticable and will increase compliance costs exponentially beyond EPA's already inaccurate economic assessment of $1,700. To keep implementation costs minimal and to enable compliance in a practicable manner, the Agency should strive to implement a regulation that codifies the company's current practices for reducing exposure rather than imposing entirely new requirements that will be focused on creating new and unnecessary tasks and additional paperwork.

Response *EPA appreciates the commenter's concern regarding the additional documentation requirements for decaBDE pallet recycling operations. As noted in the response to 0304 below regarding labeling, EPA agrees the $1,700 overall compliance cost estimate for decaBDE was too low due to underestimating the cost of requiring labels for shipping pallets. The Agency, however, believes that it has appropriately estimated the burden and costs associated with this PPE documentation and recordkeeping. EPA assumes firms keep these records as part of their customary business practices; therefore this requirement is not expected to add any incremental cost. EPA in Section 3.4.4 of the Economic Analysis describes and quantifies the costs associated with additional documentation requirements including: (A) the name, workplace address, work shift, job classification, and work area of each person reasonably likely to directly handle decaBDE or handle equipment or materials on which decaBDE may present and the type of PPE selected to be worn by each of these persons; (B) the basis for PPE selection (e.g., demonstration based on permeation testing or manufacturer specifications that each item of PPE selected provides an impervious barrier to prevent exposure during expected duration and conditions of exposure, including the likely combinations of chemical substances to which the PPE may be exposed in the work area) and (C) appropriately sized PPE and training on proper application, wear, and removal of PPE, and proper care/disposal of PPE. These requirements are a standard part of OSHA-compliant Respirator Programs. These costs are accounted for in EPA's total cost analysis, as PPE documentation costs, not recordkeeping costs (which is not assigned costs in the EA due to their*

maintenance being part of ordinary business practices). This is also noted in the Paperwork Reduction Act section of the EA, where PPE documentation costs are distinct from recordkeeping. The Agency estimates a cost of $274 per firm in the year of the rule for PPE documentation, corresponding to the cost of 4 hours of administrative labor.

Comment: A product distributor (0304) specifically discussed the costs associated with labeling plastic pallets containing decaBDE. They noted that the Agency's estimate of the total potential costs of compliance with the proposed decaBDE rule amendments ($1,700) is fundamentally inaccurate and unrealistically low. The commenter asserted that EPA's labeling proposal is based on mistaken assumptions and would be economically prohibitive. The company does not apply labels (or replace damaged labels) to its shipping pallets when they pass through a Company operated facility, nor does the company currently have the means to do so. Thus, the company could only distinguish which pallets in its fleet contain decaBDE for the purposes of the labeling requirement by performing chemical testing on each pallet. Such testing, based on estimates received from independent third-party laboratories, would likely cost hundreds of dollars per sample, significantly exceeding the cost of the production of a new pallet, making it impractical.

Assuming the needed equipment were acquired, and each pallet in the fleet come to rest at some point in an company-operated facility where such labeling equipment was present, the costs of labeling a single pallet would be approximately $2.00 per pallet (approximately $1.67 in labor, $.20 in label printing cost, for approximately $1.87 in cost per pallet per label), for a multiple-million pallet pool, such as the company operates, the expenses for labeling alone could quickly reach, if not exceed, $10M. Further, the company's facilities handle only a small portion (i.e., less than 20%) of the pallet fleet in any given year, as described in the operational details in the comment.

The company also notes that the proposed labeling requirement is not practicable because the labels will quickly become illegible, and therefore fail to meet EPA's regulatory objective.

The company also notes that the requirement arbitrarily affects only their pallets, and not other decaBDE articles in commerce. They note that the only reason for this unique treatment of the company's recycling operations is that the company has responsibly advised EPA of its current PPE practices.

Response: *EPA acknowledges that the information on the current use of labels by the company during the proposal development was not accurate. During the development of the proposed rule, EPA stated in the Economic Analysis that "EPA assumes that a label with the statement about decaBDE content could be applied during this process with negligible extra burden. EPA assumes that either the existing label design could be modified to include language about decaBDE content, or a new separate label can be used." Based on the new information provided by the commentor, EPA is removing the labeling requirement for shipping pallets in the final rule. This alleviates the cost concerns noted by the company.*

Section 3.2 – Benefits

Comment: A Tribal government (0313) asserted that EPA's disregard of well-documented hazards and risks posed by decaBDE skews EPA's analysis of the benefits of the proposed amendments and of additional measures that would reduce exposure to decaBDE. The commenter asserted that, in summarizing the benefits of the proposed amendments, EPA states that decaBDE has an association with liver cancer and benign liver tumors in rats and mice and had hepatic, renal, immune, and reproductive toxicity concerns in animal studies. The commenter expressed that this ignores established hazards, including the well-documented link between decaBDE exposure and neurodevelopmental harm. The commenter further noted that EPA summarized the evidence of decaBDE's developmental neurotoxicity

in the EA, but EPA did not mention the hazard in its discussion of the benefits of the proposed amendments. The commenter added that EPA's discussion of the benefits of the proposed amendments ignores major taxa that are adversely affected by decaBDE and disregards the evidence of decaBDE's chronic hazards to wildlife. The commenter specifically noted that this includes adverse effects from decaBDE and other polybrominated diphenyl ethers (PBDEs) that threaten the recovery prospects of Chinook salmon populations that are protected by the Endangered Species Act. The commenter added that chronic exposure to PBDE flame retardants such as decaBDE also harms steelhead, which are a primary subsistence species of the Tribal government. The commenter expressed that it is unclear why EPA ignored these hazards in the proposed amendments and in the supporting EA. The commenter remarked that this approach leads EPA to understate the benefits of reducing exposure to decaBDE. The commenter urged EPA to correct its characterization of EPA's hazards and risks in the final amendments.

Response: *In response to the commenter's concern that the EPA only summarized the evidence of decaBDE's developmental neurotoxicity in the EA and did not discuss this hazard in the discussion of the benefits in the NPRM, economic analyses of chemical regulations often include a quantitative analysis of reductions in exposures based on risk evaluations; however, as discussed in the first section of Chapter 1 of the NPRM EA, TSCA section 6(h) did not require a risk evaluation for decaBDE, and therefore the Agency performed a qualitative assessment of benefits. Even though there is no requirement for TSCA regulations to pass a benefit-cost test, conducting a robust analysis that includes all potential costs and benefits is a critical step in the rulemaking process.*

As recognized by the commenter, the EA does address decaBDE's neurotoxicity, developmental toxicity, and aquatic toxicity. For example, Section 4.1.2 discusses and cites literature regarding decaBDE's neurotoxicity, and notes that reductions in the exposures to decaBDE may lead to reductions in developmental neurotoxicity, as well as hepatic, renal, immune, and reproductive toxicity. EPA's literature review and discussion of benefits is more heavily weighted toward human health effects. This is consistent with the cost analysis, which focuses on the costs associated with reducing occupational exposure by workers in affected industries, the primary direct effect of the rule.

With respect to the commenter's concern regarding effects specifically on Chinook salmon and steelhead, the EA literature review and benefits discussion does not specifically address documented effects on these species. However, the EA does more generally address these effects, citing literature characterizing decaBDE as acutely toxic to fish and aquatic invertebrates. For example, the EA notes that "Several adverse effects have also been observed following chronic exposures to decaBDE. DecaBDE exposure has been associated with impaired growth in both aquatic and terrestrial species. Chronic exposure to decaBDE in aquatic organisms has also been linked to effects such as disruption of thyroid hormone (Qin et al. 2010) and oxidative stress (Feng et al. 2013)."

The benefits-related literature and information presented in the EA does not represent an exhaustive literature review nor is it an analysis of relative importance of different hazards. However, the Agency believes the benefits analysis appropriately characterizes the adverse effects of decaBDE exposure on both human and aquatic species, particularly in view of the absence of a risk evaluation.

Section 4 - Statutory and Executive Order (EO) reviews

Comment: A Tribal government (0303) said that both the Keweenaw Bay Indian Community and the Yurok Tribe of the Yurok Reservation have Tribes Approved for Treatment as State (TAS) status and submitted comments during the development phase of the PBT rules. The commenter argued that Tribal governments must be consulted during all phases and especially rulemaking phases of regulatory decisions that impact Tribal lifeways.

Response: *EPA recognizes that the Yurok Tribe of the Yurok Reservation and Keweenaw Bay Indian Community are tribes approved for Treatment as State status. At the request of the Yurok Tribe, EPA held a formal one-on-one Tribal consultation with the Yurok Tribe on November 7, 2022, and met with the Yurok Tribe again in March 2023, while developing the proposed rule. EPA consults with Tribes to the greatest extent practicable without divulging privileged or sensitive information, including, but not limited to, information relating to ongoing investigations, settlement negotiations, or litigation. EPA has continued to update Tribes after significant rulemaking milestones have been achieved.*

Section 5 – Comments from the PBT Proposed Rule Public Webinar

Comment: An individual commenter (0366) expressed support for EPA's recent focus on the PBT chemicals and the public webinar itself. This commenter mentioned the cumulative impact of the chemicals and would like to see a larger discussion of this within EPA. The commenter mentioned that persistence should be considered in any risk assessment, emphasized tracking the PBT chemicals in supply chains before use, and suggested addressing the waste and disposal of these chemicals.

Response: *EPA thanks the commenter for its support of the PBT rules and the public webinar and the suggestions regarding assessing the cumulative impact of the chemicals. As discussed in the 2021 PBT final rules and the proposed rule, and consistent with TSCA section 6(h)(2), EPA did not perform a risk evaluation for decaBDE or PIP (3:1), nor did EPA develop quantitative risk estimates.*

Regarding the commenter's suggestion to track the PBT chemicals in supply chains before use, EPA has conducted extensive outreach with numerous stakeholders to identify the supply chains in which decaBDE and PIP (3:1) are present, as described throughout the proposed rule.

Regarding the commenter's suggestion to address the waste and disposal of these PBT chemicals, at this time, EPA is not proposing to use its TSCA section 6(a) authorities to regulate all activities or exposures to decaBDE and PIP (3:1); this includes disposal. This is explained further in the 2021 decaBDE and PIP (3:1) final rules and the recent proposed rule.

Comment: An individual commenter (0366) suggested that EPA focus on chlorinated compounds and mentioned fluoride, persistent environmental pollutants, PFAS, rubber, plastics, and aluminum.

Response: *EPA thanks the commenter for its input. This particular regulation pertains to decaBDE and PIP (3:1) under the TSCA, therefore this comment is out of scope.*

Comment: An individual commenter (0366) suggested that EPA utilize a mapping or related report on where the PBT chemicals are likely or known.

Response: *EPA thanks the commenter for its input, but this suggestion is not within the scope of this rulemaking.*