ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 751

[EPA–HQ–OPPT–2023–0376; FRL–9145–02–OCSPP]

RIN 2070–AL02

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)

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: The Environmental Protection Agency (EPA or Agency) is finalizing revisions to the regulations for decabromodiphenyl ether (decaBDE) and phenol, isopropylated phosphate (3:1) (PIP (3:1)), 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. After receiving additional comments, the Agency has determined that revisions to the decaBDE and PIP (3:1) regulations are necessary to address implementation issues and to further reduce the potential for exposures to decaBDE and PIP (3:1) for humans and the environment to the extent practicable.

DATES: This rule is effective on January 21, 2025.

ADDRESSES: The docket for this action, identified by docket identification (ID) number EPA–HQ–OPPT–2023–0376, is available online at *https://www.regulations.gov.* Additional instructions on visiting the docket, along with more information about dockets generally, is available at *https://www.epa.gov/dockets.*

FOR FURTHER INFORMATION CONTACT:

For general information: The TSCA Hotline, ABVI-Goodwill, 422 South Clinton Ave., Rochester, NY 14620; telephone number: (202) 554–1404; email address: *TSCA-Hotline@epa.gov.*

For technical information regarding decaBDE: Brooke Porter, Existing Chemicals Risk Management Division (7404M), Office of Pollution Prevention and Toxics, Environmental Protection Agency, 1200 Pennsylvania Ave. NW, Washington, DC 20460–0001; telephone number: (202) 564–6388; email address: *porter.brooke@epa.gov.*

For technical information regarding PIP (3:1): Scott Drewes, Existing Chemicals Risk Management Division (7404M), Office of Pollution Prevention and Toxics, Environmental Protection Agency, 1200 Pennsylvania Ave. NW, Washington, DC 20460–0001; telephone number: (202) 564–8833; email address: *drewes.scott@epa.gov.*

SUPPLEMENTARY INFORMATION:

I. Executive Summary

A. Does this action apply to me?

You may be affected by this action if you manufacture (including import), process, distribute in commerce, or use decaBDE or decaBDE-containing products or articles. Such uses for decaBDE may include but are not limited to wire and cable insulation for nuclear power generation facilities, plastic shipping pallets, and imported articles such as replacement parts for aerospace and automotive parts. You may also be affected by this action if you manufacture (including import), process, distribute in commerce, or use PIP (3:1) or PIP (3:1)-containing products or articles. Such uses for PIP (3:1) may include flame retardants in plastics, functional fluids in aerospace and industrial machinery, and plastic articles that are components of electronics or electrical articles.

The following list of North American Industry Classification System (NAICS) codes is not intended to be exhaustive, but rather provides a guide to help readers determine whether this document might apply to them. Potentially affected entities may include:

- Adhesive Manufacturing (NAICS Code 325520);
- Air and Gas Compressor Manufacturing (NAICS Code 333912);
- Air-Conditioning and Warm Air Heating Equipment and Commercial and Industrial Refrigeration Equipment Manufacturing (NAICS Code 333415);
- Aircraft Engine and Engine Parts Manufacturing (NAICS Code 336412);
- Aircraft Manufacturing (NAICS Code 336411);
- All Other Basic Organic Chemical Manufacturing (NAICS Code 325199);
- All Other Miscellaneous General Purpose Machinery Manufacturing (NAICS Code 333998);
- All Other Plastics Product Manufacturing (NAICS Code 326199);
- All Other Transportation Equipment Manufacturing (NAICS Code 336999);
- Analytical Laboratory Instrument Manufacturing (NAICS Code 334516);
- Appliance Repair and Maintenance (NAICS Code 811412);
- Audio and Video Equipment Manufacturing (NAICS Code 334310);
- Automobile and Light Duty Motor Vehicle Manufacturing (NAICS Code 336110);
- Automobile and Other Motor Vehicle Merchant Wholesalers (NAICS Code 423110);
- Boat Building (NAICS Code 336612);
- Broadwoven Fabric Mills (NAICS Code 313210);
- Computer and Computer Peripheral Equipment and Software Merchant Wholesalers (NAICS Code 432430);
- Computer Storage Device Manufacturing (NAICS Code 334112);
- Construction Machinery Manufacturing (NAICS Code 333120);
- Current-Carrying Wiring Device Manufacturing (NAICS Code 335931);
- Custom Compounding of Purchased Resins (NAICS Code 325991);
- Electronic Computer Manufacturing (NAICS Code 334111);
- Farm and Garden Machinery and Equipment Merchant Wholesalers (NAICS Code 423820);
- Farm Machinery and Equipment Manufacturing (NAICS Code 333111);
- Guided Missile and Space Vehicle Manufacturing (NAICS Code 336414);
- Guided Missile and Space Vehicle Propulsion Unit Parts Manufacturing (NAICS Code 336415);
- Heavy Duty Truck Manufacturing (NAICS Code 336120);
- Household Appliances, Electric Housewares, and Consumer Electronics Merchant Wholesalers (NAICS Code 423620);
- Industrial Machinery and Equipment Merchant Wholesalers (NAICS Code 423830);
- Industrial Supplies Merchant Wholesalers (NAICS Code 423840);
- Industrial Truck, Tractor, Trailer and Stacker Machinery Manufacturing (NAICS Code 333924);
- Instruments and Related Products Manufacturing for Measuring, Displaying, and Controlling Industrial Process Variables (NAICS 334513);
- Lawn and Garden Tractor and Home Lawn and Garden Equipment Manufacturing (NAICS Code 333112);
- Manufacturing and Reproducing Magnetic and Optical Media (NAICS Code 334610);
- Materials Recovery Facilities (NAICS Code 562920);
- Medical, Dental, and Hospital Equipment and Supplies Merchant Wholesalers (NAICS Code 423450);
- Mining Machinery and Equipment Manufacturing (NAICS Code 333131);
- Miscellaneous Intermediation (NAICS Code 523910);
- Motor and Generator Manufacturing (NAICS Code 335312);
- Motor Vehicle Body Manufacturing (NAICS Code 336211);
- Motor Vehicle Electrical and Electronic Equipment Manufacturing (NAICS Code 336320);

- Motor Vehicle Gasoline Engine and Engine Parts Manufacturing (NAICS Code 336310);
- Motor Vehicle Supplies and New Parts Merchant Wholesalers (NAICS Code 423120);
- Motorcycle, Bicycle and Parts Manufacturing (NAICS Code 336991);
- New Car Dealers (NAICS Code 441110);
- Nuclear Electric Power Generation (NAICS Code 221113);
- Other Aircraft Part and Auxiliary Equipment Manufacturing (NAICS Code 336413);
- Other Basic Inorganic Chemical Manufacturing (NAICS Code 325180);
- Other Chemical and Allied Products Merchant Wholesalers (NAICS Code 424690);
- Other Commercial and Industrial Machinery and Equipment Rental and Leasing (NAICS Code 532490);
- Other Communications and Energy Wire Manufacturing (NAICS Code 335929);
- Other Communications Equipment Manufacturing (NAICS Code 334290);
- Other Electronic Component Manufacturing (NAICS Code 334419);
- Other Electronic Parts and Equipment Merchant Wholesalers (NAICS Code 432690);
- Other Guided Missile and Space Vehicle Parts and Auxiliary Equipment Manufacturing (NAICS Code 336419);
- Other Motor Vehicle Parts Manufacturing (NAICS Code 336390);
- Paint and Coating Manufacturing (NAICS Code 325510);
- Petroleum Lubricating Oil and Grease Manufacturing (324191);
- Petroleum Refineries (NAICS Code 324110);
- Plastics Material and Resin Manufacturing (NAICS Code 325211);
- Plastics Product Manufacturing (NAICS Code 3261);
- Plumbing, Heating, and Air-Conditioning Contractors (NAICS Code 238220);
- Relay and Industrial Control Manufacturing (NAICS Code 335314);
- Semiconductor and Related Device Manufacturing (NAICS Code 334413);
- Semiconductor Machinery Manufacturing (NAICS Code 333242);
- Surface Active Agency Manufacturing (NAICS Code 325613); and
- Surgical Appliance and Supplies Manufacturing (NAICS Code 339113).

To determine whether your entity is regulated by this action, you should carefully examine the provisions found in 40 CFR part 751. If you have any questions regarding the applicability of this action to a particular entity, consult the technical information contacts listed under **FOR FURTHER INFORMATION CONTACT**.

B. What is the Agency's authority for taking this action?

TSCA section 6(h), 15 U.S.C. 2601 *et seq.,* directs EPA to take expedited action to complete TSCA section 6(a) rules on certain PBT chemical substances. EPA must apply one or more of the requirements listed in TSCA section 6(a) to the extent necessary to meet the TSCA section 6(h)(4) statutory standard. More specifically, EPA must take action on those chemical substances identified in the 2014 Update to the TSCA Work Plan for Chemical Assessments (Ref. 2) that, among other factors, EPA has a reasonable basis to conclude are toxic and that with respect to persistence and bioaccumulation score high for one and either high or moderate for the other, pursuant to the TSCA Work Plan Chemicals: Methods Document (Ref. 3).

In response to this directive, in January 2021, EPA promulgated rules to regulate the following five PBT chemical substances: decaBDE (CASRN 1163–19–5); PIP (3:1) (CASRN 68937–41–7); 2,4,6-tris(tert-butyl)phenol (2,4,6-TTBP) (CASRN 732–26–3); hexachlorobutadiene (HCBD) (CASRN 87–68–3); and pentachlorothiophenol (PCTP) (CASRN 133–49–3) (Refs. 4, 5, 6, 7, and 8). With the obligation to promulgate these rules, the Agency also has the authority to amend them (*e.g.,* if circumstances change, including in relation to the receipt of new information*).* It is well settled that EPA has inherent authority to reconsider, revise, or repeal past decisions to the extent permitted by law so long as the Agency provides a reasoned explanation. See *F.C.C.* v. *Fox Television Stations, Inc.,* 556 U.S. 502, 515 (2009). Based on information submitted by regulated entities since the publication of the 2021 decaBDE and PIP (3:1) final rules, the Agency has determined that amendments to both rules are necessary to further reduce the potential for exposure to the extent practicable.

C. What action is the Agency taking?

EPA is finalizing revisions to the decaBDE and PIP (3:1) rules issued under TSCA (see 40 CFR part 751, subpart E). Additionally, in response to comments received on the 2023 proposed rule for decaBDE and PIP (3:1) (Ref. 1), EPA is also amending the general provisions at 40 CFR 751.401 to exclude processing and distribution in commerce of an article that contains the chemical substance, and where the chemical substance has not been newly added, for the purpose of repair or maintenance. EPA is not revising the chemical-specific provisions for the other three PBT chemical substances addressed in 40 CFR part 751, subpart E (2,4,6-TTBP, HCBD, and PCTP).

1. Decabromodiphenyl Ether (DecaBDE)

DecaBDE is a flame retardant that has been widely used in textiles, plastics, adhesives, and polyurethane foam. In this action, EPA is finalizing revisions to the 2021 decaBDE final rule to require the use of personal protective equipment (PPE) during certain activities involving decaBDE. EPA is also finalizing: a prohibition on releases to water during the manufacturing, processing, and distribution in commerce of decaBDE and decaBDE-containing products; an extension of the compliance date for the phase-out of processing and distribution in commerce of decaBDE-containing wire and cable insulation for nuclear power generation facilities; an export notification requirement for decaBDE-containing wire and cable for nuclear power generation facilities; and an allowance for unintentional amounts of decaBDE present in products and articles at concentrations less than 0.1% by weight. These final revisions are discussed further in Unit III.F.

2. Phenol, Isopropylated Phosphate (3:1) (PIP (3:1))

PIP (3:1) is a flame retardant, a plasticizer, and an anti-compressibility and anti-wear additive. It is used in lubricants and hydraulic fluids and in the manufacture of other compounds. For PIP (3:1), EPA is finalizing revisions to the 2021 final rule to require the use of PPE for the domestic manufacturing and processing of PIP (3:1) and certain PIP (3:1)-containing products and articles. EPA is also finalizing: phase-outs on processing and distribution for certain uses; new exclusions from the prohibitions on processing and distribution in commerce of PIP (3:1) for use in wire harnesses and electric circuit boards and for the processing and distribution in commerce of such PIP (3:1)-containing harnesses and circuit boards; an exclusion to allow for distribution in commerce of new and replacement parts containing PIP (3:1); and an allowance for unintentional amounts of PIP (3:1) present in products and articles at concentrations less than 0.1% by weight. EPA is not revising the October 2024 compliance date for articles not otherwise covered by an exclusion from prohibition or by an existing or newly finalized extension to a phase-out compliance deadline.

D. Why is the Agency taking this action?

On September 3, 2021, in accordance with Executive Order 13990, ''Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis,'' (86 FR 7037, January 25, 2021), EPA announced its intention to review the five PBT final rules issued on January 6, 2021 (Refs. 9 and 10). Specifically, EPA announced that it planned to determine whether the rules were consistent with the Administration's policy to limit exposure to dangerous chemicals and to identify additional actions that could be taken to address implementation issues and to reduce further exposures to these PBT chemicals to the extent practicable, as directed by TSCA section 6(h). On March 8, 2021, EPA also requested public comment in the **Federal Register** on the five 2021 PBT final rules, including decaBDE and PIP (3:1) (Ref. 11). In particular, EPA sought comment on whether the five 2021 PBT final rules sufficiently reduced exposures to these chemicals, including exposures to potentially exposed or susceptible subpopulations and the environment; on implementation issues associated with the 2021 PBT final rules; on compliance issues associated with the 2021 PBT final rules; and on whether to consider additional or alternative regulatory measures or approaches.

During the development of the 2021 PBT final rules, EPA conducted extensive outreach to stakeholders, including hosting a public webinar to gather use information on the PBTs, holding two comment periods on the Exposure and Use Assessment, and presenting the notice of proposed rulemaking at a Small Business Roundtable hosted by the Small Business Administration (SBA) Office of Advocacy to elicit public comment. Only after the 2021 PBT final rules were published, a wide variety of stakeholders from various sectors, including, for example, the electronics and electrical manufacturing sector and their customers, raised significant concerns about their ability to meet the March 8, 2021 compliance date for the processing and distribution of PIP (3:1) and PIP (3:1)-containing articles (Ref. 12). These stakeholders contended that they needed significantly more time to identify whether and where PIP (3:1) might be present in articles in their supply chains, find and certify alternative chemicals, and produce or import new articles that do not contain PIP (3:1). EPA met with numerous stakeholders, including trade associations, entities who report PIP (3:1) under the Chemical Data Reporting Rule, and other sectors where PIP (3:1) use was identified. Despite EPA's extensive outreach, most stakeholders that contacted EPA after the rule was finalized had not commented on its proposal or otherwise engaged with the Agency on the PIP (3:1) rulemaking and did not appear to have previously surveyed their supply chains to determine whether PIP (3:1) was being used (Refs. 5, 10, 11, and 13). Absent timely input from these stakeholders, in the 2021 PIP (3:1) final rule EPA determined that PIP (3:1) was not widely present in complex articles outside the aerospace and automotive sectors. These stakeholders requested an extension of the compliance dates in order to clear the existing articles through the supply chain, find and certify an alternative chemical, and produce or import new articles that do not contain PIP (3:1).

In response to stakeholder input, in an immediately effective final rule issued in September 2021, EPA extended the compliance deadline for processing and distribution in commerce of PIP (3:1) for use in articles and PIP (3:1)-containing articles, unless subject to an exclusion from or phase-in of prohibition, to March 8, 2022 (Ref. 10). In October 2021, EPA proposed a new extended compliance deadline for processing and distribution in commerce of PIP (3:1) for use in articles and PIP (3:1)-containing articles, unless subject to an exclusion from or phase-in of prohibition, to October 31, 2024, and finalized that extended compliance deadline in March 2022 (Refs. 13 and 14). EPA similarly amended the compliance deadline for recordkeeping requirements for articles in those rulemakings.

Additionally, EPA responded to the comments received on the March 2021 notification that were relevant to the PIP (3:1) compliance deadline extension and related issues when the Agency extended the compliance deadlines in both the September 2021 PIP (3:1) final rule and in an October 2021 PIP (3:1) proposed rule (Refs. 10 and 13). According to the comments received prior to and in response to the March 2021 notification and request for comments, a wide range of key consumer and commercial goods are affected by the prohibitions in the 2021 PIP (3:1) final rule such as cellular telephones, laptop computers, and other electronic devices and industrial and commercial equipment used in various sectors including transportation, life sciences, and semiconductor production (Ref. 15). These comments are addressed in EPA's September 2021 PIP (3:1) final rule and October 2021 PIP (3:1) proposed rule (Refs. 10 and 13). EPA reasoned that these extensions would avoid significant disruption in the supply chains for certain articles necessary to the electronics and electrical manufacturing sector, while EPA determined whether any further compliance date extensions were necessary for certain industry sectors, including the semiconductor and equipment manufacturing sectors.

EPA also announced in the September 2021 PIP (3:1) final rule, October 2021 PIP (3:1) proposed rule, and the March 2022 PIP (3:1) final rule that the Agency intended to consider any additional information received to further reduce exposures and assess how environmental justice could be promoted through further exposure reduction to better protect human health and the environment (Refs. 10, 13, and 14).

In addition, several comments received raised issues pertaining to decaBDE. Commenters recommended further regulation of decaBDE, including narrowing the replacement part exclusion to time-limited critical uses, addressing potential risks from releases to the environment, restricting the disposal of decaBDE and decaBDE-containing products and articles, and addressing potential risks from occupational exposure (EPA–HQ–OPPT–2023–0376–0303, EPA–HQ–OPPT–2023–0376–0313, EPA–HQ–OPPT–2021–0202). EPA also received a comment requesting the Agency hold a government-to-government consultation with the Yurok Tribal Council (Ref. 16). In November 2022, EPA held a one-on-one Tribal consultation with the Yurok Tribal Council. During this consultation, the Agency received additional information that informed the Agency of considerations to reduce potential exposures to decaBDE, including labeling and a prohibition on the releases to water. EPA received no comments addressing the need for the extending compliance date for decaBDE-containing wire and cable insulation for nuclear power generation facilities.

E. What are the estimated incremental impacts of this action?

EPA's estimated incremental impacts for this rulemaking are presented in an Economic Analysis document (Ref. 17), which is available in the docket, described in more detail in Unit IV., and is briefly summarized here. The EPA conducted this analysis for the purpose of providing the public with as full as possible an understanding of the potential impacts of this final action. The EPA believes this can inform the public's understanding, place EPA's

action in context, and help identify and illustrate the extent of potential burdens and protection.

1. Benefits

As discussed in the 2021 PBT final rules and Unit II.C., 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. TSCA section 6(h)(2) makes clear that Congress did not intend for EPA to conduct a risk evaluation to support TSCA section 6(a) rules issued to satisfy TSCA section 6(h) requirements, but rather intended for EPA to conduct an expedited rulemaking process to ''reduce exposures to the extent practicable'' pursuant to TSCA section 6(h)(4). EPA also does not interpret TSCA section 6(c)(2) to require a quantification of benefits. Under TSCA section 6(c)(2)(A)(iv), EPA must consider and publish a statement on the reasonably ascertainable economic consequences of the rule, but that provision does not require quantification, particularly if quantification is not possible. While EPA was not able to quantify the benefits of reducing human and environmental exposures to decaBDE or PIP (3:1), the Economic Analysis qualitatively discusses the benefits of reducing exposure under this final rule, as summarized in Unit IV. (Ref. 17).

2. Costs

Total quantified annualized social costs for this final rule are approximately $400 million at a 3 percent discount rate, and $430 million at a 7 percent discount rate. Costs at a 2 percent discount rate are estimated at $390 million (shown in appendix A of the accompanying Economic Analysis for this final rule). Of the final rule costs, those associated with decaBDE alone were estimated at $86 at a 3 percent discount rate and $128 at a 7 percent discount rate. Costs associated with PIP (3:1) alone were estimated at $400 million and $430 million (at 3 and 7 percent discount rates, respectively). PPE requirements were estimated at $373 million and $410 million (at 3 and 7 percent discount rates, respectively) comprising the majority of the total costs. Comparatively, costs for the 2021 PIP (3:1) final rule were estimated at approximately $23.6 million at a 3 percent discount rate and $22.8 million at 7 percent. Costs for this final rule are associated with new requirements and therefore were not included in estimates for the 2021 PIP (3:1) final rule.

3. Small Entity Impacts

This final rule is estimated to impact approximately 24,865 small businesses, all of which pertain to PIP (3:1) and none for decaBDE. Of these, 860 small businesses are expected to incur cost impacts between 1 percent and 3 percent of their annual revenue. No entities are expected to be impacted above 3 percent of their annual revenue.

4. Environmental Justice

Since a risk evaluation was not conducted, EPA's understanding of the extent to which reductions in exposure might reduce risks for communities with environmental justice (EJ) concerns is limited. In the Economic Analysis accompanying this rule (Ref. 17), EPA relied on available relevant data sources for PIP (3:1) and decaBDE, including EPA's Chemical Data Reporting (CDR), the U.S. Census Bureau, American Community Survey (2022), and others to assess the economic implications of this final rule. Data, however, are not sufficiently comprehensive to estimate the extent to which the final rule will reduce existing disproportionate impacts on communities with EJ concerns. In addition, only a small subset of the specific facilities (14 facilities reported to 2020 CDR) using decaBDE and PIP (3:1) have been identified, so a proximity analysis examining the characteristics of the communities surrounding the known facilities would not be representative of all exposed communities.

Given the lack of available data, EPA has determined that it is not practicable to assess whether this action is likely to result in new disproportionate impacts or exacerbate any existing disproportionate impacts on communities with EJ concerns. The restrictions placed on decaBDE and PIP (3:1) through this final rule will reduce the potential exposures and risks associated with the manufacture, processing, and use of these chemicals. At a minimum EPA considers that this final rule will not exacerbate any baseline EJ concerns and will increase the level of protection for all affected populations without having any disproportionate and adverse human health or environmental effects on any population, including children. Certain exclusions from prohibition and extensions of compliance dates beyond those adopted in the 2021 PBT final rules, however, may partially delay anticipated reductions in exposure.

5. Children's Environmental Health

Under the 2021 *EPA Policy on Children's Health,* the Agency considers the risks to infants and children consistently and explicitly during its decision-making process (Ref. 18). Certain exclusions and extensions of compliance dates beyond those adopted in the 2021 PBT final rules or subsequent PIP (3:1) final rules, however, may partially delay these reductions in exposure. More information can be found in the Exposure and Use Assessment document (Ref. 19).

6. Effects on State, Local, and Tribal Governments

This final rule will not have any significant or unique effects on small governments, or federalism, or Tribal implications.

II. Background

A. History of This Rulemaking

1. The 2021 PBT Final Rules

a. DecaBDE

The decaBDE 2021 final rule prohibited the manufacture (including import) and processing of decaBDE, and products and articles to which decaBDE has been added effective 60 days after publication of the final rule, and distribution in commerce of products and articles to which decaBDE has been added one year after the effective date of the rule. Different compliance dates or exclusions from the date of publication of this prohibition included:

- 18 months for any manufacture, processing and distribution in commerce of decaBDE for use in curtains in the hospitality industry, and the curtains to which decaBDE has been added.
- Two years for any processing and distribution in commerce of decaBDE for use in wire and cable insulation in nuclear power generation facilities, and the decaBDE-containing wire and cable insulation.
- Three years for any manufacture, processing and distribution in commerce of decaBDE for use in parts installed in and distributed as part of new aerospace vehicles, and the parts to which decaBDE has been added for such vehicles. After the end of their service lives for import, processing, and distribution in commerce of aerospace vehicles manufactured before January 7, 2024, that contain decaBDE in any part. After the end of their service lives for manufacture, processing, and distribution in commerce of decaBDE for use in replacement parts for aerospace vehicles, and the replacement parts to which decaBDE has been added for such vehicles.
- After the end of their service lives, or 2036, whichever is earlier, for

manufacture, processing, and distribution in commerce of decaBDE for use in replacement parts for motor vehicles, and the replacement parts to which decaBDE has been added for such vehicles.

- After the end of their service lives for distribution in commerce of plastic shipping pallets manufactured prior to March 8, 2021 that contain decaBDE.
- Exclusion for processing and distribution in commerce for recycling of decaBDE-containing plastic products and articles (*i.e.,* the plastic to be recycled is from products and articles that were originally made with decaBDE), and for decaBDE-containing products or articles made from such recycled plastic, where no new decaBDE is added during the recycling or production process.

Persons manufacturing, processing, and distributing in commerce decaBDE or decaBDE-containing products and articles were required to maintain, for three years from the date the record is generated, ordinary business records related to compliance with this rule that include the name of the purchaser, and list the products or articles. Excluded from the recordkeeping requirement were persons processing and distributing in commerce for; recycling of plastic that contains decaBDE, those products and articles containing decaBDE from recycled plastic as long as no new decaBDE was added during the recycling process, and plastic shipping pallets manufactured prior to the effective date of the rule. These records must include a statement that the decaBDE, or the decaBDE-containing products and articles, are in compliance with 40 CFR 751.405(a) and be made available to EPA within 30 calendar days upon request.

b. PIP (3:1)

The 2021 PIP (3:1) final rule prohibited the processing and distribution in commerce of PIP (3:1) and products containing PIP (3:1) except for the following:

- Processing and distribution in commerce for use in hydraulic fluids either for the aviation industry or to meet military specifications for safety and performance where no alternative chemical is available that meets U.S. Department of Defense specification requirements;
- Processing and distribution in commerce for use in lubricants and greases;
- Processing and distribution in commerce for use in new and replacement parts for the automotive and aerospace industry, and the distribution in commerce of those parts to which PIP (3:1) has been added;
- Processing and distribution in commerce for use as an intermediate in a closed system to produce cyanoacrylate adhesives;
- Processing and distribution in commerce for use as an adhesive and sealant until January 6, 2025, after which such activity is prohibited;
- Processing and distribution in commerce for use in specialized engine filters for locomotive and marine applications;
- Processing for recycling and distribution in commerce for the recycling of PIP (3:1)-containing plastic provided no new PIP (3:1) is added during the recycling process;
- Processing and distribution in commerce of articles and products made from recycled PIP (3:1)-containing plastic provided no new PIP (3:1) is added during the recycling process or to the articles and products made from the recycled plastic; and
- Processing and distribution in commerce of PIP (3:1) for use in photographic printing articles and PIP (3:1)-containing photographic printing articles until January 1, 2022.

This final rule also prohibited releases to water for from manufacture, processing, distribution in commerce, and commercial uses that are permitted to occur, as outlined in the preceding bullets:

- Persons manufacturing, processing, and distributing in commerce PIP (3:1) and products containing PIP (3:1) are required to notify their customers of these prohibitions on processing and distribution, and the prohibition on releases to water via Safety Data Sheet (SDS) or labeling.
- Persons manufacturing, processing, and distributing in commerce PIP (3:1) are required to maintain, for three years from the date the record was generated, ordinary business records related to compliance with the restrictions, prohibitions, and other requirements set forth in this rule. These records must include a statement that the PIP (3:1), or the PIP (3:1)-containing products or articles, are in compliance with 40 CFR 751.407(a) and be made available to EPA within 30 calendar days upon request.

2. PIP (3:1) Compliance Date Extensions

Based on the PIP (3:1)-specific comments received in response to the March 2021 notification and request for comments, EPA issued an immediately effective final rule in September 2021, which extended the compliance dates applicable to the processing and distribution in commerce of certain PIP (3:1)-containing articles and the PIP (3:1) used to make those articles, until March 8, 2022, along with the associated recordkeeping requirements for manufacturers, processors, and distributors of PIP (3:1)-containing articles (Ref. 10). While most commenters on the March 2021 notification and request for comments requested a longer-term compliance date extension (Ref. 15), EPA determined that a short-term extension was necessary to ensure that the supply chains for these important articles continue uninterrupted in the near term while allowing EPA to conduct notice and comment rulemaking on a longer-term compliance date extension generally.

On March 8, 2022, EPA further extended the compliance deadline established in the September 2021 final rule for the processing and distribution in commerce of PIP (3:1) for use in certain articles and for the processing and distribution in commerce of certain PIP (3:1)-containing articles, from March 8, 2022, to October 31, 2024 (Ref. 14). The compliance date for the recordkeeping requirements for manufacturers, processors, and distributors of PIP (3:1)-containing articles was also extended from March 8, 2022, to October 31, 2024. Articles covered by the phased-in prohibition include any article not otherwise covered by an alternative compliance deadline or exclusion described in 40 CFR 751.407(a)(2)(ii) or (b). EPA reasoned that this further extension would avoid significant disruption in the supply chains for certain articles and would provide the public with regulatory certainty, while EPA determined whether any further compliance date extensions were necessary.

3. The 2023 Proposed Rule for DecaBDE and PIP (3:1)

On November 24, 2023, EPA proposed updates to the 2021 final decaBDE and PIP (3:1) rules (Ref. 1). For decaBDE, EPA proposed the following: requiring a label on plastic shipping pallets known to contain decaBDE; requiring PPE use for certain activities involving decaBDE; prohibiting the release of decaBDE to water during manufacturing, processing, and distribution in commerce; extending the compliance deadline for processing and distribution of decaBDE-containing wire and cable insulation for use in nuclear power generation facilities; requiring export notification for decaBDE-containing wire and cable for nuclear power generation facilities, and extending the recordkeeping requirements from three to five years

and removing the 30-day timeframe to make records available.

For PIP (3:1), EPA proposed the following: requiring PPE for domestic manufacturing and processing of PIP (3:1) and certain PIP (3:1)-containing products and articles; requiring engineering controls for processing of PIP (3:1) and PIP (3:1)-containing products as an intermediate in a closed system to produce cyanoacrylate adhesives; requiring new compliance deadlines for certain exclusions, modifying existing deadlines, and/or narrowing existing exclusions for processing and distribution of PIP (3:1) for certain excluded uses industries; adding new exclusions for processing and distribution of PIP (3:1) for use in wire harnesses, electric circuit boards, and sealants and adhesives used on circuit boards; providing a new, 5-year compliance deadline for use in Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)-approved marine antifouling coating products; and extending the recordkeeping requirements from three to five years and removing the 30-day timeframe to make records available.

The proposed rule provided a 45-day public comment period that closed on January 8, 2024 (Ref. 1). EPA received a total of 33 public comments in response to the proposed rule. Since two of the comments were duplicates, EPA posted a total of 31 public comment submissions to *regulations.gov;* they are available in the public docket at EPA–HQ–OPPT–2023–0376. These comments further informed EPA's understanding of the current status of uses for decaBDE and PIP (3:1). EPA is publishing in the docket for this action a separate Response to Comments (RtC) Document that responds to all significant comments we received (Ref. 20). Furthermore, EPA held a public webinar on the proposed rule on December 14, 2023, in which it presented an overview of the proposed changes to the regulations for decaBDE and PIP (3:1) and accepted verbal comments. EPA received a total of three comments from members of the public during this webinar (Ref. 21).

B. Activities Not Regulated by This Rule

EPA did not propose to revise and is not revising the other three PBT final rules issued under TSCA section 6(h) for 2,4,6-TTBP, HCBD, or PCTP.

C. EPA's Implementation of TSCA Section 6(h)

1. EPA's TSCA Section 6(h)(1) Findings

As previously detailed in the 2021 decaBDE and PIP (3:1) final rules, for chemical substances meeting the requirements of TSCA section 6(h)(1)(A) and (B), TSCA section 6(h)(4) required EPA to issue a final TSCA section 6(a) rule to ''address the risks of injury to health or the environment that the Administrator determines are presented by the chemical substance and reduce exposure to the substance to the extent practicable.'' EPA made the requisite TSCA section 6(h)(1)(A) and (B) findings for decaBDE and PIP (3:1), triggering the requirement for a TSCA section 6(a) rulemaking under TSCA section 6(h)(4) standard. This final rulemaking does not amend these findings.

2. EPA's Approach to TSCA Section 6(h)(4)

In the 2021 PBT final rules, EPA explained that it reads the TSCA section 6(h)(4) standard to apply to the chemical substance generally, thus requiring EPA to ''address risks'' and ''reduce exposures'' to the chemical substance without focusing on how or whether the measure taken is specific to an activity that might be characterized as a ''condition of use'' as that term is defined in TSCA section 3(4). Thus, the 2021 PBT final rules address past, present, and future activity involving the chemical substance. In the 2021 PBT final rules, EPA also explained that because there was no existing risk evaluation or assessment for each chemical substance and one was not contemplated by TSCA section 6(h), EPA's implementation of the standard in TSCA section 6(h)(4) focused on applying the TSCA sections 6(a) and (c) requirements in a manner that reduces exposure to the chemical substance to the extent practicable. This final rulemaking does not amend these interpretations or EPA's approach for implementing TSCA section 6(h)(4).

EPA intends that each provision of this rulemaking be severable. In the event of litigation staying, remanding, or invalidating all or a portion of a particular risk management approach, EPA intends to preserve all other portions of the particular risk management approach and all other risk management approaches in the rule to the fullest extent possible. The Agency considered the risk management options in TSCA section 6(a) and generally each of EPA's particular risk management approaches to reduce exposure to decaBDE and PIP (3:1) to the extent practicable functions independently from EPA's other risk management approaches, which may have different characteristics leading to EPA's risk management decisions. Further, the Agency crafted this rule so that different risk management approaches are reflected in different provisions or elements of the rule that are capable of operating independently. Accordingly, the Agency has organized the rule so that if any provision or element of this rule is determined by judicial review or operation of law to be invalid, that partial invalidation will not render the remainder of this rule invalid.

There are many permutations of this; accordingly, rather than walking through each one, EPA is providing representative examples for illustrative purposes. First, to the extent a court were to find that EPA lacked substantial evidence to support the phase-out of the processing of one type of decaBDE-containing product, or otherwise found flaw with such phase-out, it would have no bearing on other risk management approaches in the rule, including other phase-outs, unless the specific flaw also applies to these other risk management approaches. Second, to the extent that a court were to find that the required interim workplace protections for the processing of certain PIP (3:1)-containing products until a ban on processing goes into effect lacked substantial evidence, or otherwise found fault with such protections, it would have no bearing on EPA's decision to ban the processing of such PIP (3:1)-containing products. The independence of these risk management approaches is reflected in the structure of the rule, which does not intertwine the risk management approaches, but rather separately defines each such approach.

3. EPA's Interpretation of ''to the Extent Practicable'' as Used in TSCA Section 6(h)(4)

EPA has previously discussed its general interpretation of the term ''practicable'' in the five 2021 PBT final rules (Refs. 4, 5, 6, 7, and 8), and is not changing the interpretation. Nevertheless, EPA has provided a more fulsome discussion of why its interpretation is consistent with the statute. 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. EPA's interpretation takes this plain language into account. 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). For a more thorough discussion and examples of the factors EPA took into consideration, see Section 1–2 of the Response to Comments document for this rule.

In sum, 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, including cost. 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.

4. EPA's Position on Directly Regulating Occupational Exposures

For purposes of determining whether worker protection measures are practicable under TSCA section 6(h)(4), EPA does not believe it is appropriate to assume as a general matter that an applicable Occupational, Safety and Health Administration (OSHA) requirement or industry practice is consistently or always properly applied. This 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).

TSCA section 9(d) requires EPA to consult and coordinate TSCA activities with OSHA and other relevant Federal agencies for the purpose of achieving the maximum applicability of TSCA while avoiding the imposition of duplicative requirements. Pursuant to 29 U.S.C. 651 *et seq.,* OSHA requires that employers provide safe and healthful working conditions through enforcement of the General Duty Clause and by setting and enforcing occupational safety and health standards. OSHA also provides training, outreach, education, and assistance. Where EPA has reason to believe that there might be the potential for exposure to workers to decaBDE and PIP (3:1), the Agency has considered whether it is practicable to require worker protections in addition to applicable OSHA regulations (*e.g.,* fit testing and training requirements). To determine what worker protections measures are practicable, the Agency reconsidered the reasonably available information on the use of industry worker protection measures, including best practices, and considered new information received during engagements with industry stakeholders after the 2021 PBT final rules, from public comments on the March 2021 notification, and public comment on the proposed rule (Refs. 15, 20, and 22). This information was used to inform the finalized requirements for inhalation and dermal PPE to reduce worker exposure to decaBDE and PIP (3:1).

EPA also considered the hierarchy of controls adopted by OSHA and the National Institute for Occupational Safety and Health (NIOSH) (*i.e.,* prioritization of exposure control strategies from most protective and preferred to least protective and preferred techniques), but only proposed requiring prescriptive controls over the hierarchy of controls. In order of preference, the hierarchy of controls includes elimination of the hazard, substitution with a less hazardous substance, engineering controls, administrative controls (*e.g.,* training or exclusion zones with warning signs), and, finally, use of PPE (Ref. 23). Under the hierarchy of controls, the use of respirators should only be considered after all other measures have been taken to reduce exposures, and then consistent with the OSHA Respiratory Protection Standard at 29 CFR 1910.134. Under OSHA's standards, the various exposure controls are prioritized equally, followed by PPE requirements when necessary.

EPA received several comments on the Agency's worker protection requirements. One commenter (EPA–HQ–OPPT–2023–0376–0312) argued that EPA must require owner/operators to follow the hierarchy of controls in protecting their workforce. Another commenter (EPA–HQ–OPPT–2023–0376–0297) argued that EPA should not prescribe controls that may not be appropriate for the particular circumstances of an individual workplace. Another commenter (EPA–HQ–OPPT–2023–0376–0313) stated that in proposing measures to address occupational exposures that rely almost exclusively on the use of PPE, EPA's proposal is incompatible with the ''hierarchy of controls'' for reducing occupational exposures to toxic chemicals. The commenter contended that requiring owners and operators to install engineering and administrative controls to the extent they are practicable would correct this flaw in the proposed amendments. Multiple commenters requested that EPA allow industry to use the hierarchy of controls to determine which controls may be appropriate and most protective for that workplace, rather than prescribing the required PPE for each use (EPA–HQ–OPPT–2023–0376–0312, EPA–HQ–OPPT–2023–0376–0292, EPA–HQ–OPPT–2023–0376–0297, EPA–HQ–OPPT–2023–0376–0302). A commenter also expressed interest in the development of workplace chemical protection programs using existing chemical exposure limits (ECELs) for PBTs, similar to those proposed for other risk management rules under TSCA section 6(a) (EPA–HQ–OPPT–2023–0376–0312). While EPA recognizes the concerns raised by commenters, EPA does not believe it can develop an ECEL for these two chemicals without a risk evaluation, which was neither required nor feasible given the statutory timeline for promulgation of rules under TSCA section 6(h).

While a workplace chemical protection program that sets an ECEL and uses the hierarchy of controls would provide latitude for companies to determine which elements within the hierarchy of controls to implement, developing an ECEL without a risk evaluation is not practicable for these chemicals. EPA has decided not to finalize a requirement to consider the hierarchy of controls in the absence of an ECEL. The workplace requirements for decaBDE and PIP (3:1) were developed based on stakeholder

comments, existing industry practices, and OSHA-required Safety Data Sheets. See the individual sections related to workplace protection for decaBDE (Unit III.C.2.) and PIP (3:1) (Unit III.D.3.).

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 (EPA–HQ–OPPT–2023–0376–0313, EPA–HQ–OPPT–2023–0376–0312). 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 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.

D. Overview of TSCA Sections 6(c) and 26 Considerations

Unless explicitly stated, the following overview is meant to be a summary of information previously provided by EPA in the 2021 decaBDE and PIP (3:1) final rules regarding TSCA sections 6(c) and 26 considerations. It is not intended to serve as new findings under or interpretations of TSCA section 6(h)(4).

1. TSCA Section 6(c)(2) Considerations

TSCA section 6(c)(2) requires EPA to consider and publish a statement based on reasonably available information with respect to the:

- Health effects of the chemical substance(s) or mixture(s) and the magnitude of human exposure;
- Environmental effects of the chemical substance(s) or mixture(s) and the magnitude of exposure to the environment;
- Benefits of the chemical substance(s) or mixture(s) for various uses; and
- Reasonably ascertainable economic consequences of the rule, including: the likely effect of the rule on the national economy, small business, technological innovation, the environment, and public health; the costs and benefits of the proposed and final rule and of the one or more primary alternative regulatory actions that EPA considered; and cost effectiveness of the final rule and of the one or more primary alternative regulatory actions that the Agency considered.

In selecting among prohibitions and other restrictions available under TSCA section 6(a), EPA must factor in, to the extent practicable, these considerations. Further, in deciding whether to prohibit or restrict the manufacture, processing, distribution in commerce, use, or disposal of a chemical substance or mixture in a manner that substantially prevents a specific condition of use of a chemical substance or mixture, and in setting an appropriate transition period for such action, EPA must consider, to the extent practicable, whether technically and economically feasible alternatives that benefit health or the environment will be reasonably available as a substitute when the final prohibition or other restriction takes effect.

EPA's summary of the health and environmental effects of and the potential for exposure to the two PBT chemicals subject to this final action can be found in the support documents for the 2021 PBT final rules for each chemical (*e.g.,* the Exposure and Use Assessment (Ref. 19) and the Hazard Summary (Ref. 24)).

The costs and benefits of this final rule and the alternatives EPA considered, as well as the impacts on small businesses, are presented in the Economic Analysis document (Ref. 17). However, the Agency was not able to quantitatively estimate the benefits of this final rule and the alternatives, due to the absence of a risk evaluation, and has instead qualitatively described such benefits.

EPA considered the estimated costs to regulated entities, as well as the cost to administer and enforce the options. EPA considered reasonably available information about the functionality and performance efficacy of the regulatory options and the ability to implement the use of chemical substitutes or other alternatives. A discussion of the costs EPA considered can be found in Unit IV., along with a discussion of the alternatives that the Agency considered. A discussion of the impacts on small businesses can also be found in Unit IV.

With respect to the cost-effectiveness of this final regulatory action, EPA is unable to perform a traditional cost-effectiveness analysis of the options and alternative options for decaBDE and PIP (3:1). The cost-effectiveness of a policy option would properly be calculated by dividing the annualized costs of the option by a final outcome, such as cancer cases avoided, or to intermediate outputs, such as tons of emissions of a pollutant curtailed. Without the supporting analyses from an existing risk evaluation or assessment, the Agency is unable to calculate either a health-based or environment-based denominator. Thus, EPA is unable to perform a quantitative cost-effectiveness analysis of the regulatory action. However, by evaluating the practicability of the policy options, the Agency is confident that it has considered elements related to the cost-effectiveness of the actions, including the cost and the effect on human and environmental exposure to decaBDE and PIP (3:1).

2. TSCA Section 26 Considerations

In accordance with TSCA section 26(h) and considering the requirements of TSCA section 6(h), EPA used scientific information, technical procedures, measures, and methodologies that are fit for purpose and consistent with the best available science to inform the 2021 PBT final rules. EPA based its determination that human and environmental exposures to both decaBDE and PIP (3:1) are likely on its 2020 Exposure and Use Assessment (Ref. 19), which underwent a peer review and public comment process, and used best available science and methods sufficient to make that determination. The extent to which the various information, procedures, measures, and methodologies, as applicable, used in the Agency's decision-making have been subject to independent verification or peer review is adequate to justify their use, collectively, in the record for this final rule.

In addition, in accordance with TSCA section 26(i), and considering the requirements of TSCA section 6(h), EPA has made scientific decisions based on the weight of the scientific evidence. Additionally, in accordance with TSCA section 26(k), EPA considered reasonably available information, including information on occupational

controls and PPE usage, when finalizing this TSCA section 6 rule.

E. Overview, Health Effects, and Exposure

For the 2019 PBT proposed rule, EPA prepared an Exposure and Use Document, summarizing the information the Agency obtained in its own research or in response to feedback prior to and during the rulemaking process on the types of exposures that might be relevant to a TSCA section 6(a) rulemaking under the TSCA section 6(h)(4) standard. As noted in the 2021 PBT final rules, the Exposure and Use Assessment identified uses of the chemical substances and found that the chemical substances had at least one or more ''condition of use'' activity where some exposure was likely, but did not attempt to precisely classify all activities for each chemical substance as a ''condition of use''.'' As EPA explained in the 2021 PBT final rules, the Agency did not perform a systematic review or a weight of the scientific evidence assessment for the hazard characterization of these chemicals. TSCA section 6(h)(2) makes clear that Congress did not intend for EPA to conduct a risk evaluation to support TSCA section 6(a) rules issued to satisfy TSCA section 6(h) requirements, but rather intended for EPA to conduct an expedited rulemaking process to ''reduce exposures to the extent practicable'' pursuant to TSCA section 6(h)(4). As a result, EPA explained that the hazard characterizations are not definitive or comprehensive. Other hazard information on these chemicals may exist in addition to the description in the 2021 PBT final rules and studies summarized in the Hazard Summary (Ref. 24). The following sections summarize the hazard, exposure, and use information in the 2021 decaBDE and PIP (3:1) final rules.

1. DecaBDE

As EPA explained in the 2021 decaBDE final rule, decaBDE is used as an additive flame retardant in plastic enclosures for televisions, computers, audio and video equipment; textiles and upholstered articles; wire and cables for communication and electronic equipment; and other applications (Ref. 25). DecaBDE is also used as a flame retardant for multiple applications for aerospace and automotive vehicles, including replacement parts for aircraft and cars (Refs. 26 and 27). Exposure information for decaBDE is detailed in EPA's Exposure and Use Assessment and the 2021 decaBDE final rule (Refs. 4 and 19). As EPA explained in that rule, there is potential for exposure to decaBDE under the conditions of use at all stages of its lifecycle (*i.e.,* manufacturing; processing; distribution in commerce; industrial, commercial, and consumer use; and disposal) of the chemical. DecaBDE was produced and released at higher levels in the past, but releases from manufacturing and processing activities have declined over time, as have releases associated with use, disposal, and recycling activities (Ref. 19). This decline is in part due to a voluntary phase-out by the largest producers and suppliers of decaBDE in the United States, that committed to end their production, imports, and sales for all uses of decaBDE by the end of 2013 (Ref. 17).

As described in the 2021 decaBDE final rule, exposure assessments on decaBDE have been conducted by EPA (including industry-supplied information as part of the Voluntary Children's Chemical Evaluation Program), the National Academy of Sciences, and international governments. These assessments describe exposure potential for polybrominated diphenyl ethers (PBDEs), including decaBDE, through a variety of pathways. Adult and child exposures can occur via dust ingestion, dermal contact with dust, and dietary exposures (such as dairy consumption). Household consumer products have been identified as the main source of PBDEs (including decaBDE) in house dust. The next highest exposure pathways included dairy ingestion and inhalation of dust via indoor air. Infant and child exposures can occur via breastmilk ingestion and mouthing of hard plastic toys and fabrics. Occupational exposures for breastfeeding women were highest in women engaged in activities resulting in direct dermal and inhalation contact with decaBDE (Ref. 19).

Finally, as summarized in the 2021 decaBDE final rule, decaBDE is toxic to aquatic invertebrates, fish, and terrestrial invertebrates. Data indicate the potential for developmental, neurological, and immunological effects, general developmental toxicity, and liver effects in mammals. There is some evidence of genotoxicity and carcinogenicity. The 2021 decaBDE final rule and Hazard Summary provides more information on these hazard endpoints (Refs. 4 and 24).

For the 2020 CDR submission period, calendar years 2016–2019, data indicate that three companies manufactured (including imported) decaBDE in the United States (Refs. 17 and 28). The 2020 CDR data indicate a production volume of less than 1 million pounds annually from 2016 through 2019, however, EPA notes that domestic production has ceased, and the identified importers have likely since stopped using decaBDE (Ref. 28).

2. PIP (3:1)

As explained in the 2021 PBT final rules, PIP (3:1) is used as a plasticizer, a flame retardant, an anti-wear additive, or an anti-compressibility additive in hydraulic fluid, lubricating oils, lubricants, greases, various industrial coatings, adhesives, sealants, and plastic articles. As a chemical that can perform several functions simultaneously, sometimes under extreme conditions, it has several distinctive applications. For example, in lubricating oils, PIP (3:1) is a flame retardant, anti-wear additive, anti-compressibility additive, or some combination of the three. In adhesives and sealants, PIP (3:1) is a plasticizer and flame retardant (Ref. 19). PIP (3:1) is also added to paints, coatings, and plastic components, where it is a plasticizer or flame-retardant additive. In the past, some plastic components to which PIP (3:1) may have been added included those intended for use by children. EPA has received comments that PIP (3:1) acts as a flame-retardant gel in filters surrounding engines in some marine and locomotive applications (EPA–HQ–OPPT–2019–0080–0569).

Exposure information for PIP (3:1) is detailed in EPA's Exposure and Use Assessment and is summarized here (Ref. 19). There is potential for exposure to PIP (3:1) under the conditions of use at all stages of its lifecycle (*i.e.,* manufacturing, processing, distribution in commerce, use, and disposal). PIP (3:1) is manufactured, processed, distributed, used, and disposed of domestically. For the 2012 CDR submission period, data indicate that four sites manufactured (including imported) PIP (3:1) in the United States. The total volume of PIP (3:1) manufactured (including imported) in the United States was 14,904,236 lbs. in 2011; 3,191,017 lbs. in 2012; 2,968,861 lbs. in 2013; 5,632,272 lbs. in 2014; and 5,951,318 in 2015 (Ref. 28).

For the 2020 CDR submission period, calendar years 2016–2019, data indicate that nine sites manufactured (including imported) PIP (3:1) in the United States and manufacture (including import) held steady at between 1 and 10 million pounds (Refs. 17 and 28).

PIP (3:1) is toxic to aquatic plants, aquatic invertebrates, sediment invertebrates, and fish. Data indicate the potential for reproductive and developmental effects, neurological effects, and effects on systemic organs, specifically the adrenal glands, liver,

ovaries, and heart in mammals. The studies presented in the Hazard Summary, titled ''Environmental and Human Health Hazards of Five Persistent, Bioaccumulative and Toxic Chemicals,'' describe these hazardous endpoints (Ref. 29).

III. Final Regulatory and Alternative Regulatory Actions

A. Regulatory Approach

In this action, EPA is finalizing revisions to the 2021 decaBDE final rule and the 2021 and 2022 PIP (3:1) final rules. EPA has collected additional information and reconsidered its application of its interpretation of the TSCA section 6(h)(4) direction that the Agency ''reduce exposures to the substance to the extent practicable,'' focusing particularly on whether additional practicable requirements can reduce occupational exposures, including those associated with exclusions. As described throughout this Unit, EPA has considered the practicability of the final requirements, including how potential requirements and compliance time frames associated with these requirements could impact supply chains, including those prioritized in Executive Order 14017 America's Supply Chains.

B. Activities EPA Did Not Reevaluate for This Rulemaking

1. Disposal

As EPA explained in the 2023 proposed rule, EPA did not propose to change its 2021 decision not to use its TSCA section 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, imposing a requirement under TSCA section 6(a) to treat waste containing the PBT chemicals that are not hazardous under Resource Conservation and Recovery Act (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 final rules (Refs. 4 and 5).

2. Commercial Use of Products and Articles

As also explained in the 2021 PBT final rules, EPA did not propose regulations relating to commercial use of products and articles containing the PBT chemicals, such as televisions and computers, because such regulation would both require testing, which may not be widely available for a chemical, and is expected to be extremely burdensome, necessitating the development of a test method to allow for the identification of products containing PBT chemicals, including decaBDE and PIP (3:1), and the disposal of countless products and articles that would have to be replaced. If EPA prohibited the continued commercial use of these items, widespread economic impacts and disruption in channels of trade could occur while the prohibited items were identified and replaced. EPA also acknowledged, based on additional information provided by industry stakeholders after the 2021 PIP (3:1) final rule, that international supply chains are complex, and that complexity creates challenges for identifying and finding alternatives to PIP (3:1) in international supply chains. Taking this into account, EPA did not reevaluate the practicability of further exposure reductions relating to continued commercial use of products and articles containing decaBDE and PIP (3:1).

3. Recycling

Finally, in the 2021 PBT final rules, EPA explained that it did not propose to use its TSCA section 6(a) authorities to restrict recycling activities generally. EPA explained that it recognized the importance and impact of recycling, which contributes to the protection of our environment, and that it would be overly burdensome and not practicable to impose restrictions on the recycling of plastics that may contain decaBDE or PIP (3:1), or on the use of such recycled plastic in plastic articles. EPA also explained that decaBDE and PIP (3:1), if present, are typically present in such articles at low levels and that banning the recycling of plastics containing decaBDE or PIP (3:1) would require decaBDE- and 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 (Ref. 30). EPA concluded that it would be difficult to make plastic sorting for this purpose cost-effective, and that it would be overly burdensome and not practicable to prohibit recycling of decaBDE- and PIP (3:1)-containing plastic in the United States. Taking this into account, 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. As noted in Unit III.C., the one exception relates to the 2021 decaBDE final rule authorization for the continued recycling and distribution in commerce of existing plastic shipping pallets that contain decaBDE for the extent of the pallets' service life because EPA has determined it is practicable to regulate when expensive testing is not necessary to determine the chemical's presence in the article.

C. DecaBDE—Revisions to 40 CFR 751.405

1. Require Signage in Regulated Areas

EPA proposed to require a label on existing plastic shipping pallets that contain decaBDE. EPA received several comments regarding the proposed labeling requirement for decaBDE-containing plastic shipping pallets (EPA–HQ–OPPT–2023–0376–0304, EPA–HQ–OPPT–2023–0376–0292, EPA–HQ–OPPT–2023–0376–0311, EPA–HQ–OPPT–2023–0376–0313). Specifically, some commenters agreed with the proposed labeling requirement but urged EPA to expand the labeling requirement to all articles containing decaBDE (EPA–HQ–OPPT–2023–0376–0313). Other commenters expressed concern with the labeling requirement and stated the labels should not apply to any recyclers (EPA–HQ–OPPT–2023–0376–0311). Commenters also discussed implementation concerns regarding the label and the need for testing of pallets to determine if decaBDE is present (EPA–HQ–OPPT–2023–0376–0313, EPA–HQ–OPPT–2023–0376–0304).

In response to a comment received during the March 2021 request for comment, EPA held a government-to-government Tribal consultation in November 2022, in which EPA received comments requesting the Agency require labeling of plastics that contain decaBDE (Refs. 16 and 31), EPA proposed to require a label on existing plastic shipping pallets that contain decaBDE. At the time of the proposal, 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 it was EPA's understanding that the company tracked, as part of normal business operations, each decaBDE-containing plastic shipping pallet. No

new decaBDE has been added to the company's plastic shipping pallets since 2012 (Ref. 27).

EPA held an additional stakeholder meeting with the company that recycles plastic pallets that contain decaBDE during the public comment period in December 2023 and received additional public comments (Refs. 27 and EPA–HQ–OPPT–2023–0376–0314). Based on this stakeholder meeting and these public comments, EPA determined that its understanding of the company business model was incorrect as described in the proposal. Although an initial bar code is attached to the pallet after it is molded, these labels are quickly damaged once introduced into commerce and are not replaced.

The purpose of EPA's proposed label requirement 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 (Ref. 19), and public comments indicated that the labels would likely not be present at the time of recycling, EPA has determined that labeling of decaBDE-containing plastic shipping pallets is not practicable and is not finalizing the labeling requirement for plastic shipping pallets that contain decaBDE.

To reduce potential exposures to decaBDE during the recycling of plastic shipping pallets that contain decaBDE, EPA is 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 recycling of plastic shipping pallets manufactured before March 8, 2021, which will reduce potential exposures to decaBDE (see Unit III.C.2. for more information on specific PPE requirements). A sign must be posted at every entry point into the regulated area that clearly, prominently, in multiple languages as appropriate, and in an easily readable font size, contains the following text: ''Decabromodiphenyl (decaBDE) (CASRN 1163–19–5), a chemical that has been identified as a persistent, bioaccumulative, and toxic (PBT) chemical by the U.S. Environmental Protection Agency, may be present in this regulated area. All persons in this regulated area who recycle plastic shipping pallets that contain decaBDE are required to wear personal protective equipment, including respiratory protection that is at least as protective as a NIOSH-approved N95 respirator with an assigned protection factor (APF) of 10 and dermal protection of gloves that are chemically resistant to decaBDE, per regulations at 40 CFR 751.405(e).'' EPA is not requiring testing to determine if decaBDE is present in the plastic shipping pallets.

2. Require Worker Protections for Certain Activities Involving DecaBDE

EPA proposed to require inhalation and dermal PPE during certain ongoing uses listed at 40 CFR 751.405(a)(2) and (b). To ensure exposures to workers are reduced to the extent practicable during domestic manufacturing and processing of decaBDE and decaBDE-containing products and articles, EPA is finalizing at 40 CFR 751.405(e), worker protection requirements to address potential respiratory and dermal exposure to workers during ongoing activities involving decaBDE, specifically certain activities where the prohibitions phase-ins have not passed (*i.e.,* manufacture and processing of decaBDE for use in replacement parts and the manufacture of such parts, as specified in 40 CFR 751.405(a)(2)(iii) and (iv), and the processing through recycling of plastic pallets, as specified in and 40 CFR 751.405(b)). In addition, EPA made minor modifications to new 40 CFR 751.405(e)(6) to ensure it is clear what is being excluded and what is not (*i.e.,* the processing of decaBDE for recycling is not included) and 40 CFR 751.405(b) clarifying that processing of decaBDE for recycling was not excluded.

EPA is requiring owner or operators to select and provide respiratory protection that is at least as protective as a NIOSH-approved N95 respirator with an assigned protection factor (APF) of 10 and gloves that are chemically resistant to decaBDE. EPA has determined, based on comments, that it is practicable to require worker protection, including PPE, for the processing of existing plastic shipping pallets because it is already industry practice (Ref. 27). Although it is EPA's understanding that domestic manufacturing and processing of decaBDE for use in new and replacement parts for motor and aerospace vehicles has ceased, EPA is requiring PPE for these uses. This approach ensures that any ongoing activity involving decaBDE, past, present or future, is addressed by this regulatory approach taken, and thus the regulations adopted in this rule reduce the exposures that will result with resumption of past activities or the initiation of similar or other activities in the future. For all other processing for recycling activities of decaBDE-containing plastic from products or articles and decaBDE-containing products or articles made from such recycled plastic, EPA maintains that it would be impracticable to establish a testing program to determine if decaBDE is present. Due to the difficulty in identifying whether and where decaBDE is present in an article, EPA is not requiring worker protections for all other processing for recycling activities.

EPA is not requiring worker protections for all ongoing processing of articles (*e.g.,* processing of decaBDE-containing wire and cable for use in nuclear power generation facilities), because EPA has determined worker protections are not practicable. This is because the Agency understands that the processing of these articles would result in minimal potential for worker exposure because, once formulated, decaBDE is encased in the cured coating and the potential for worker exposure is minimal (Ref. 19). EPA is also not requiring worker protections for distribution in commerce of decaBDE or decaBDE-containing products or articles, since the distribution in commerce of decaBDE and decaBDE-containing products or articles would result in minimal potential for exposure. Lastly, because EPA generally understands the potential for exposure is low during importation, the Agency is not requiring worker protections for import of decaBDE and decaBDE-containing products and articles that were excluded under the 2021 final decaBDE rule. Addressing such minimal potential for exposure through worker protections would not be practicable considering the additional costs and resource burdens (Ref. 19).

For the activities subject to the worker protection requirements and to reduce potential occupational exposure during the recycling process of plastic shipping pallets that contain decaBDE, EPA is finalizing the requirement for, at a minimum, a NIOSH-approved N95 respirator with an APF 10 and gloves that are chemically resistant to decaBDE with activity-specific training where dermal contact with decaBDE is reasonably expected.

Where PPE is required, EPA is finalizing its proposal to require implementation of a PPE program in alignment with certain elements of OSHA's General Requirements for PPE at 29 CFR 1910.132 and Respiratory Protection requirements in 29 CFR 1910.134. EPA is requiring that owners

and operators maintain PPE in a sanitary, reliable, and undamaged condition and ensure that each potentially exposed person who is required to wear PPE uses such PPE. Under this final rule, owners and operators will be required to select and provide PPE that properly fits each potentially exposed person who is required to use PPE. For N95 respirators with an APF 10, the owner or operator must ensure that all respirators used in the workplace are NIOSH-approved as listed on the NIOSH Certified Equipment List (Refs. 32 and 33). Where dermal PPE is required, EPA is finalizing a requirement that owners and operators provide gloves that are chemically resistant to decaBDE with activity-specific training where dermal contact with decaBDE is possible (Ref. 34). Owners and operators are also required to communicate PPE selections (*e.g.,* demonstration that each item of PPE selected prevents exposure during expected duration and conditions of exposure) to each potentially exposed person.

EPA uses the term ''potentially exposed person'' in this unit, elsewhere in the preamble, and in the regulatory text to mean any person who may be exposed to a chemical substance or mixture regulated under 40 CFR part 751 subpart E as a result of the use of that chemical or mixture. ''Any person'' includes workers, occupational non-users, employees, independent contractors, employers, and all other persons in the work area. One important reason to define a potentially exposed person as any person who may be exposed in the workplace is to emphasize the broad scope of exposures. EPA notes that this definition is intended to apply only in the context of risk management (*e.g.,* workers directly using the chemical, workers in the vicinity of the use, students in a laboratory setting). The term is not intended as a replacement for the term Potentially Exposed or Susceptible Subpopulation as defined by TSCA section 3(12).

EPA is requiring that each owner or operator comply with OSHA's respiratory protection training requirements at 29 CFR 1910.134(k) and general PPE training requirements at 29 CFR 1910.132(f) when using respirators and gloves. Owners and operators must provide PPE training to all persons required to use dermal protection or respiratory protection prior to or at the time of initial assignment to a job involving exposure to decaBDE.

EPA is also requiring the implementation of a respiratory protection program in alignment with 29 CFR 1910.134(b), (c)(1), (c)(3) and (4), (d)(1)(iv), (f), and (g) through (l)), which requires each owner or operator to select respiratory protection in accordance with the guidelines for proper respirator use, maintenance, fit-testing, medical evaluation, and training. Owners or operators who are required to administer a respiratory protection program must ensure a respirator is utilized in accordance with 29 CFR 1910.134(d)(1).

EPA is finalizing its proposal to require that owners and operators document respiratory protection used and PPE program implementation and retain those records for five years from the date the record is generated. EPA is also finalizing its requirement that owners and operators must document and keep records of the information on the PPE program, as applicable, and make it available to the Agency upon request. In addition, and in response to comments, owners and operators must also keep records related to the basis for the regulated area as defined in 40 CFR 751.403, as well as provide potentially exposed persons and their designated representative(s) an opportunity to observe records related to the basis of the PPE or another control measure selection, including potential monitoring results that are representative of the potentially exposed person's exposure.

3. Prohibit the Release to Water During the Manufacturing, Processing, and Distributing of DecaBDE and DecaBDE-Containing Products

EPA proposed to prohibit the releases to water during the manufacturing, processing, and distribution in commerce of decaBDE and decaBDE-containing products and proposed to require all persons to follow any regulations that may apply and best management practices for preventing the release of decaBDE to water. EPA received a comment in support of the prohibition on certain releases to water during the manufacturing, processing, and distribution in commerce of decaBDE and decaBDE-containing products (EPA–HQ–OPPT–2023–0376–0286).

EPA also received comments requesting EPA expand the provision to regulate wastewater treatment plants, landfills, and land-applied sewage sludge for both decaBDE and PIP (3:1) (EPA–HQ–OPPT–2023–0376–0303, EPA–HQ–OPPT–2023–0376–0313). More discussion of the commenters' request can be found in the RtC Document (Ref. 20). After one commenter expressed concern regarding the lack of specificity around the ''best management practices'' clause and receiving no additional information during the public comment period on how a prohibition on releases to water could best be achieved through best management practices, EPA is not finalizing the ''best management practices'' clause (EPA–HQ–OPPT–2023–0376–0297). EPA is finalizing the prohibition on the releases to water during the manufacturing, processing, and distribution in commerce of decaBDE and decaBDE-containing products, and such persons are required to follow applicable regulations that may apply for preventing the release of decaBDE to water. Applicable regulations related to this final prohibition on releases to water may include restrictions on discharges under the Federal Water Pollution Control Act (commonly known as the Clean Water Act), Safe Drinking Water Act (SDWA), or analogous State laws. However, EPA is not amending the 2021 PIP (3:1) final rule restrictions on release to water, which retains the requirement to follow ''best management practices.''

The prohibition on the release to water during the manufacturing, processing, and distribution in commerce of decaBDE and decaBDE-containing products prevents direct releases of decaBDE 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. This final rule does not impose restrictions on sources discharging indirectly to publicly owned treatment works (POTWs). EPA is also not imposing specific requirements for wastewater treatment plants, unless those facilities are manufacturing, processing, and/or distributing decaBDE or decaBDE-containing products. EPA determined that it is not practicable to require all wastewater treatment plants to test and potentially treat for decaBDE. However, prohibiting the release from the manufacturing, processing, and distribution in commerce of decaBDE and decaBDE-containing products will result in an overall reduction in releases of decaBDE to water generally, including, any potential release to water that could happen from being present at downstream wastewater treatment plants. See the RtC Document for more discussion on regulating PBT disposal (Ref. 20).

After reconsidering the practicability of prohibiting releases to water due to the public comments, and the potential for releases to water, even though there

are no reported releases, EPA is finalizing the prohibition on the release to water to prevent any potential future releases of decaBDE and to protect exposed populations (*e.g.,* subsistence fishers) (Ref. 19). Prohibiting releases to water highlights the importance of preventing environmental releases of decaBDE and PIP (3:1) and reducing potential exposures. As mentioned in the Exposure and Use Assessment, Toxics Release Inventory (TRI) data show a decrease in releases that are reported in each industry sector using decaBDE (Ref. 19). As of 2016, the number of manufacturing facilities, textile manufacturing facilities, wire and cable manufacturing facilities, and other facilities reporting TRI releases has decreased from several dozen to only one manufacturer and 23 other facilities (Ref. 19). Specifically, the one manufacturer that released decaBDE to water prior to 2012, is now prohibited from manufacturing decaBDE under the 2021 decaBDE final rule. According to the most recent (2021) TRI data, there were zero releases of decaBDE to water (Ref. 35). TRI reporting is required only for facilities within specific NAICS 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. Prohibiting releases to water during manufacture, processing, and distribution in commerce of decaBDE and decaBDE-containing products will prevent future releases of decaBDE to the water from permissible ongoing activities, reducing the overall potential for exposure. While in some cases EPA has determined that it is not practicable to exercise its TSCA section 6(a) authorities to regulate certain exposures under TSCA section 6(h), as outlined in Unit II.B., this is not the case for certain releases of decaBDE to water.

EPA is not extending this requirement to include a prohibition on the release to water for the processing and distribution in commerce of decaBDE-containing articles, including recycled materials that may contain decaBDE. As described in more detail in the 2021 decaBDE final rule and the supporting response to comment document, it would be extremely burdensome to identify articles containing decaBDE to determine if a facility that recycles articles is subject to this final release to water prohibition (Ref. 36).

4. Extend the Compliance Deadline for Processing and Distribution in Commerce of DecaBDE-Containing Wire and Cable Insulation for Use in Nuclear Power Generation Facilities

EPA proposed to extend the compliance date, limited to 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), until after the end of the service life of the wire and cable. EPA received several comments in support of the extended compliance date for processing and distribution in commerce of decaBDE-containing wire and cable insulation for use in nuclear power generation facilities (EPA–HQ–OPPT–2023–0376–0299, EPA–HQ–OPPT–2023–0376–0300). One commenter stated that an alternative is available and disagrees with EPA's proposal to extend the compliance deadline (EPA–HQ–OPPT–2023–0376–0294). However, based on discussions with the Nuclear Regulatory Commission (NRC), EPA disagrees with the commenter that alternative, decaBDE-free, fully qualified wire and cables are available that meet the NRC's requirements in 10 CFR 50.49, ''Environmental qualification of electric equipment important to safety for nuclear power plants,'' including the Institute of Electrical and Electronics Engineers 383 (''IEEE 383'') standard for instrumentation and power cable insulation. Another commenter stated that the proposed extension for processing and distribution in commerce of decaBDE-containing wire and cable insulation for use in nuclear power generation facilities is vital, as these cables and components are necessary for the safety systems that prevent release of radioactive materials into the environment (EPA–HQ–OPPT–2023–0376–0299). Additional details can be found in the RtC Document (Ref. 20). EPA is finalizing the proposed compliance date extension for processing and distribution in commerce of decaBDE-containing wire and cable insulation for use in nuclear power generation facilities.

As mentioned in the proposal, decaBDE has been used in Class 1E cables, which are qualified to meet industry standards and NRC requirements in 10 CFR 50.49, including the Institute of Electrical and Electronics Engineers 383 (''IEEE 383'') standard for instrumentation and power cable insulation. Recognizing this, and in response to stakeholder feedback and engagements with the only known supplier of decaBDE-containing wire and cable, EPA established an extended compliance deadline of January 6, 2023, in the 2021 decaBDE final rule, after which all processing and distribution in commerce of decaBDE for use in wire and cable insulation in nuclear power generation facilities, and decaBDE-containing wire and cable insulation was prohibited (40 CFR 751.405(a)(2)(ii)). 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 U.S. Department of Energy (DOE). EPA has added text in 40 CFR 751.405(a)(2)(ii) to include one example of the types of facilities covered by nuclear power generation facilities. In addition, EPA is clarifying that 40 CFR 751.405(a)(2)(ii) and (vi) are not limited to a specific level of power generation and that EPA interprets the provision to 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 component'' as defined in 10 CFR 50.2 that include decaBDE-containing wire and cable.

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 (Refs. 37 and 38). These inquiries and outreach came shortly after the supplier of this decaBDE-containing wire and cable discontinued processing and distribution in commerce and notified its customers of its inability to continue supplying their wire and cable due to the January 6, 2023, compliance date. Due to the lack of communication and engagement between the primary supplier and their customers, as well as with EPA, the industry 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 this, on April 20, 2023, EPA's Office of Chemical Safety and Pollution Prevention (OCSPP) requested that the Office of Enforcement and Compliance Assurance (OECA) issue an enforcement statement

regarding certain entities that are subject to the prohibitions on processing and distribution in commerce of decaBDE-containing wire and cable insulation for nuclear power generation facilities as a bridge to this final rule addressing this use.

In response to this request, EPA's OECA issued a temporary ''Enforcement Statement'' on May 2, 2023, which indicates that the Agency does not intend to pursue enforcement for certain violations of the prohibition on processing and distribution in commerce of decaBDE-containing wire and cable insulation for nuclear power generation facilities, including those component and safety systems that contain the decaBDE-containing wire and cable insulation, that went into effect on January 6, 2023, as long as the entities involved are diligently working to qualify their alternative components in accordance with NRC regulations and guidance (Ref. 39).

After considering feedback from the industry and Federal partners, including DOE and NRC, EPA is finalizing its proposal to extend the compliance date, limited to 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 (*e.g.,* production facilities, test and research reactors), until after the end of the service life of the wire and cable, and the components containing the wire and cable (see 40 CFR 751.405(a)(2)(vi)). Stakeholders have indicated that existing decaBDE-containing wire and cable insulation and components containing the wire and cable may need to be distributed and processed for refurbishment, maintenance, and repair until the wire and cable is replaced. In addition, EPA's ''Exposure and Use Assessment of Five Persistent, Bioaccumulative, and Toxic Chemicals'' indicates that although releases of decaBDE could occur during the processing of decaBDE to make the wire and cable, once formulated into the wire and cable, decaBDE is encased in the cured coating and the potential for worker exposure is minimal (Ref. 19). Therefore, EPA concluded that allowing 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) to continue is necessary and practicable.

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 user of raw or compounded decaBDE 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 undergoes transition to a decaBDE-free alternative (Ref. 40). The termination conditions of the settlement agreement states that it shall remain in place for five years following the effective date unless terminated earlier, while the company's customers transition to receipt of Class 1E cable that is decaBDE-free.

5. Require Export Notification for DecaBDE-Containing Wire and Cable for Nuclear Power Generation Facilities

EPA proposed to amend the current rule to require a TSCA section 12(b) export notice for the export of decaBDE-containing wire and cable for nuclear power generation facilities. EPA received one comment of support and one comment of opposition related to the proposed export notification for decaBDE-containing wire and cable for nuclear power generation facilities (EPA–HQ–OPPT–2023–0376–0286, EPA–HQ–OPPT–2023–0376–0286). The commenter stated that the export notification is precedent-setting and should be a standalone proposal. EPA disagrees with this commenter and is finalizing the export notification requirement for decaBDE-containing wire and cable for nuclear power generation facilities.

As mentioned in the proposal to this final rule, and 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, unless otherwise subject to a specific exemption (Ref. 41). There is no specific exemption under the POPs Convention for decaBDE-containing wire and cable for nuclear power generation facilities, and thus, EPA did not expect import or export for this use to occur. However, since EPA has learned that there is a need for export of decaBDE-containing articles for this purpose (Ref. 40), EPA is finalizing this provision. Although articles are generally exempt under 40 CFR 707.60(b) from the requirement to provide notices of export under TSCA section 12(b), EPA is finalizing its proposal to amend the 2021 decaBDE final rule to require a TSCA section 12(b) export notice for the export of decaBDE-containing wire and cable for nuclear power generation facilities. Such notice requirement was triggered 30 days after publication of the proposed rule, pursuant to TSCA section 12(b) and 40 CFR 707.60(a)(3) and 707.65(a)(1)(i) and (b). The notification to EPA of such intent to export will not provide consent by the importing countries for import of the shipment; the importing countries may choose not to permit import of such shipment. Consistent with 40 CFR 751.7(a), the provisions of subpart D of 40 CFR part 707 still apply to any export notifications required for decaBDE and PIP (3:1) under TSCA section 6(h). EPA is not requiring export notification for any other articles.

6. Recordkeeping Requirements

EPA proposed to increase the recordkeeping requirement from three to five years and to remove the 30-day time frame to make records available for decaBDE. EPA received support for the proposed extended recordkeeping requirements (EPA–HQ–OPPT–2023–0376–0313, EPA–HQ–OPPT–2023–0376–0313). One commenter suggested EPA extend the recordkeeping requirements to a much longer period of time, suggesting 20–30 years as an appropriate time frame (EPA–HQ–OPPT–2023–0376–0312). As discussed in the proposed rule and in more detail in the RtC Document, the proposed record retention time frame of five years is consistent with those associated with other TSCA section 6(a) rulemakings, and because it aligns with the statute of limitations for civil penalty enforcement (28 U.S.C. 2462). Also, the proposal to modify the time frame for making records available from a 30-day time frame to upon request is critical to the Agency's ability to promptly identify and correct noncompliance (Refs. 1 and 20).

EPA is finalizing its proposal to increase the recordkeeping requirement from three to five years and is removing the 30-day time frame to make records available for decaBDE and PIP (3:1). In the 2021 decaBDE final rule, EPA required that all persons who manufacture, process, or distribute in commerce decaBDE and products and articles containing decaBDE maintain ordinary business records related to compliance with the prohibitions and restrictions for three years and to make records available within 30 days upon request. Due to the additional requirements being finalized in this rulemaking, specifically those pertaining to worker safety, EPA considers that the five-year time frame

regarding recordkeeping and removal of the 30-day time frame to make records available upon request is more appropriate. Furthermore, this is consistent with the time frame associated with other TSCA section 6(a) rulemakings that include worker protection requirements. EPA is confident that extending each rule's recordkeeping requirement to a consistent five-year requirement will facilitate regulated entities' compliance with minimal impact to regulatory burden. In addition, removal of the 30-day time frame to make records available upon request is critical to the Agency's ability to promptly identify and correct noncompliance. EPA presumes that the regulated entities should have the records demonstrating compliance readily available.

As it relates to recordkeeping for worker protections, EPA is finalizing its proposal to require that owners/operators document respiratory protection used and PPE program implementation and retain those records for five years. One commenter (EPA–HQ–OPPT–2023–0312) stated that this information should be available to workers throughout the period of potential consequences of an exposure. 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 representatives 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.

D. PIP (3:1)—Revisions to 40 CFR 751.407

1. Exclusions and Phase-In Prohibitions

EPA reviewed the determinations underlying the exclusions from prohibition in the January 2021, PIP (3:1) final rule to consider whether to adopt new restrictions for activities currently excluded, consistent with the statutory directive to reduce exposure to the extent practicable (Refs. 13 and 36). For many of the exclusions, EPA determined that there were no technically feasible alternatives or that the time and cost to identify, research, and replace PIP (3:1) in supply chains were impracticable. During the comment periods following the March 6, 2021, notification, and in comments on the proposed rule for this rulemaking, many stakeholders from the auto, aerospace, semiconductor, heavy machinery, and other sectors provided additional information on time frames that they determined would allow those industries a reasonable period to transition from PIP (3:1) to alternatives (EPA–HQ–OPPT–2021–0202). Where EPA received information that transition from PIP (3:1) to an alternative has already occurred or could occur within a reasonable transition period, EPA has determined the modifications are practicable and is therefore finalizing such modifications. In other instances, where commenters were not able to provide similar information for determining a reasonable period for such transition, EPA did not finalize extending the compliance deadline.

EPA is modifying several exclusions from prohibitions that were finalized in the January 6, 2021, PIP (3:1) final rule (Ref. 5). These final modifications include narrowing the scope of certain exclusions, adding prohibition phase-in dates, and/or in some cases creating new exclusions from a prohibition for certain uses. In conjunction with narrowing the scope of certain exclusions, EPA is also finalizing prohibitions, as proposed, through phase-outs in 40 CFR 751.407(a)(2) on the manufacture (including import), processing, and distribution in commerce of the PIP (3:1)-containing products and articles for the uses that were covered by an exclusion. This restriction will ensure the phase-out of domestic production and imports of PIP (3:1)-containing products and articles. EPA is not generally prohibiting the manufacturing of PIP (3:1), consistent with the 2021 PIP (3:1) rulemaking, due to the number of excluded activities that EPA has found it impracticable to prohibit.

a. Lubricants and Greases

EPA is finalizing as proposed the narrowed exclusion from prohibition in 40 CFR 751.407(b)(1)(ii) for only certain lubricants and greases. Specifically, the final exclusion only covers processing and distribution in commerce of PIP (3:1) for use in lubricants and greases for aerospace use and turbine engines, PIP (3:1)-containing products for use in lubricants and greases for aerospace use and turbine engines, and PIP (3:1)-containing lubricants and greases for use in aerospace and turbine applications. EPA is also finalizing a prohibition phase-in for non-aerospace and non-turbine applications, but based on comments received, EPA is amending the proposed phase-in prohibition time frame from 5 years to 15 years. The processing and distribution in commerce of PIP (3:1) for use in lubricants and greases, PIP (3:1)-containing products for use in lubricants and greases, and PIP (3:1)-containing lubricants and greases, excluding aerospace and turbine uses, likewise will be subject to a 15-year phased-in prohibition.

EPA proposed the 5-year compliance time frame because at least one stakeholder requested a 5-year transition period to move away from PIP (3:1) for their applications (Ref. 42). However, several commenters opposed EPA's proposal. Four commenters requested EPA reconsider the full exclusion in the 2021 final rule. One commenter (EPA–HQ–OPPT–2023–0376–0307) noted the regulatory uncertainty associated with some possible alternatives to PIP (3:1) being on the TSCA 2014 work plan and potentially subject to regulation. Another commenter (EPA–HQ–OPPT–2023–0376–0284) 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 specifications and can be stably supplied. Another commenter stated their belief that they do not think an alternative could be found in 30 years. These commenters recommended a 30-year phase-in prohibition, only if it included a means to seek a case-by-case exemption. Another commenter (EPA–HQ–OPPT–2023–0376–0295) argued that that the exclusion was needed in order to maintain access to PIP (3:1)-containing lubricants and greases in case manufacturers reformulate their products so that they no longer contain PIP (3:1) and they discontinue selling these products.

In the 2019 PBT proposed rule, EPA acknowledged, and continues to acknowledge in this final rule, that PIP (3:1) is a crucial anti-wear component for lubricants and greases that are used in electronics and other applications beyond aerospace, and EPA stated its understanding, based on available information, that such applications are not subject to the same extreme performance conditions. Commenters did not provide information to support claims that technically feasible alternatives could not be identified. While EPA did not identify specific alternatives for specific applications, believing that companies are best able to do so, EPA identified potential alternatives in the Economic Analysis for the 2021 PIP (3:1) final rule. For these reasons, EPA is not re-instituting the full exclusion in the 2021 final rule. EPA is also not adopting a mechanism for informal extensions in the final rule. 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. 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.

Several commenters proposed alternative prohibition phase-in periods for non-aerospace and non-turbine lubricant and greases. Two commenters (EPA–HQ–OPPT–2023–0376–0287, EPA–HQ–OPPT–2023–0376–0289) recommended EPA finalize the same timelines for lubricants and greases as parts for motor vehicles (15 years for parts for new motor vehicles and 30 years for replacement parts). This is because alternatives for motor vehicles is challenging due to the specific requirements, such as high temperatures, pressures, and durability, as well as safety. EPA notes that the final regulations continue the exclusion for the processing and distribution of PIP (3:1)-containing lubricants and greases for aerospace use and turbine engines, but otherwise requires the phase-out of all other PIP (3:1)-containing lubricants and greases after 15-years unless there is another provision authorizing the processing and distribution of PIP (3:1) for use in articles, for example for replacement parts for motor vehicles (40 CFR 751.407(a)(2)(v) and (vi)). See Unit III.D.1.b. for a further discussion on PIP (3:1) use in motor vehicles and Unit III.D.2. for precedence of phase-in prohibitions.

Two commenters (EPA–HQ–OPPT–2023–0376–0295, EPA–HQ–OPPT–2023–0376–0302) asked the Agency to confirm in the preamble to the final revised 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 aeroderivative gas turbine engines AGTs), and not other kinds of turbines. In the proposal, EPA asked for comment on the scope of the exclusion for turbines. Because EPA understands that 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 only gas turbine engines.

b. New and Replacement Parts for Motor Vehicles

EPA proposed to repeal the 2021 exclusion from prohibition in existing 40 CFR 751.407(b)(1)(iii) for new and replacement parts for motor and aerospace vehicles and to establish phase-in prohibitions related to motor vehicle and aerospace uses. The proposed 15-year phase in prohibition of processing and distribution in commerce of PIP (3:1) and PIP (3:1)-containing products for use in parts for new motor vehicles was based on industry's own description of their experience with transitioning from a different chemical, albeit under different circumstances, and the time frames provided. The aspects of this exclusion that relate to aerospace vehicles and wire harnessing and electric circuit boards are addressed in Unit III.D.1.c. and Unit III.D.1.d., respectively. Multiple industry trade organizations (EPA–HQ–OPPT–2023–0376–0285, EPA–HQ–OPPT–2023–0376–0289, EPA–HQ–OPPT–2023–0376–0308) expressed support for the proposed 15-year phased-in prohibition for new parts and 30-year phase-in for replacement parts for motor vehicles. At least one commenter (EPA–HQ–OPPT–2023–0376–0290) noted that the proposed compliance dates for motor vehicles, now being finalized in this action, appear to be feasible and noted that a shorter compliance period for new motor vehicles would not be feasible, as motor vehicle supply chains are complex, often rely on foreign suppliers, and are likely to take 15 years to phase out the use of PIP (3:1) completely.

EPA is finalizing its replacement of the existing exclusion at 40 CFR 751.407(b)(1)(iii) for use of PIP (3:1) and PIP (3:1)-containing products in new and replacement parts for motor vehicles with: (1) a 15-year phase-in prohibition of 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 parts for new motor vehicles (*i.e.,* newly produced vehicles), and manufacturing and processing of PIP (3:1)-containing parts for such new vehicles; and (2) a 30-year phase-in prohibition on 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 motor vehicles, and manufacturing and processing of PIP (3:1)-containing replacement parts for such vehicles. This final prohibition does not apply to PIP (3:1)-containing parts that are subject to a new exclusion (*e.g.,* wire harnesses and circuit boards). Several commenters requested that EPA clarify this in the regulatory text and EPA is doing so in this final rule.

In addition, EPA is amending 40 CFR 751.407(a)(2)(v) to correct an error in the proposed regulatory text. Proposed 40 CFR 751.407(a)(2)(v) read ''. . . all persons are prohibited from all processing and distribution in commerce of PIP (3:1) for use in parts for new motor vehicles, including heavy machinery, and manufacturing, processing, and distribution in commerce of PIP (3:1)-containing products for use in parts for new motor vehicles, including heavy machinery, PIP (3:1)-containing parts for such new vehicles, *and the new motor vehicles, including heavy machinery in any parts.*'' [emphasis added] EPA did not intend to prohibit the distribution in commerce of motor vehicles that may occur in the secondary market, for example by used car dealers. See Unit III.D.5. for discussion addressing this issue for PIP (3:1)-containing cars and aerospace vehicles. Rather, EPA intended to prohibit new motor vehicles from being manufactured with PIP (3:1)-containing parts, unless those parts were subject to another exclusion or alternative phase-in prohibition. While EPA received no comments on this specific provision, other comments are directly related. In particular, several commenters asked EPA to clarify that articles manufactured prior to the prohibition phase-in can continue to be imported, moved, distributed, and processed. These comments are addressed in Unit III.D.1.b. and Unit III.D.5. in regard to equipment and other articles.

Stakeholders representing manufacturers of new original equipment and aftermarket components, systems, and materials for use in passenger cars and light trucks indicated that, under the assumption that an alternative to PIP (3:1) could be found in the next three to four years, the industry could transition out of using PIP (3:1) within a seven-to-ten-year time frame (Ref. 43). EPA acknowledges that the time frame contains many contingencies, which could delay the adoption of PIP (3:1) alternatives. Nevertheless, based on the industry's own description of their experience with transitioning from a different chemical, albeit under different circumstances, and the time frames provided, EPA determined a 15-year phase-in prohibition of processing and distribution in commerce of PIP (3:1) and PIP (3:1)-containing products for

use in parts for new motor vehicles (*i.e.,* newly produced vehicles) and a 30-year phase-in prohibition on manufacturing and processing of PIP (3:1)-containing products for use in replacement parts for motor vehicles, and manufacturing and processing of PIP (3:1)-containing parts for such vehicles, as discussed subsequently, is practicable.

EPA is also finalizing new 40 CFR 751.407(a)(2)(vi) to allow processing and distribution in commerce for an additional 15 years (*i.e.,* until 30 years after the publication date of this final rule) of PIP (3:1), the manufacturing, processing, and distribution in commerce of PIP (3:1)-containing products for use in replacement parts for motor vehicles, including heavy motorized machinery, and the manufacturing and processing of PIP (3:1)-containing replacement parts themselves for such vehicles, and such vehicles with PIP (3:1)-containing parts for 30 years after the publication date of this final rule. The continued distribution in commerce of PIP (3:1)-containing parts for vehicles and the vehicles and which contains such parts is discussed in Unit III.D.5. and is covered under the newly finalized exclusion in 40 CFR 751.407(b). EPA is finalizing this 30-year period to ensure that the option provided to vehicle manufacturers by 49 U.S.C. 30120 to remedy the defect or noncompliance by repairing the vehicle or the equipment (*i.e.,* part) remains available. EPA acknowledges that 49 U.S.C. 30120 does not require manufacturers to supply replacement parts, but rather to provide a remedy, which may include either replacing the equipment with identical or reasonably equivalent equipment, or by refunding the purchase price.

In addition, EPA is amending the language in the phase-in prohibitions to reference ''heavy motorized machinery'' instead of ''heavy machinery,'' as originally proposed. This is being done to further clarify what is included in the phase-in prohibitions in 40 CFR 751.407(a)(2)(v) and (vi). As explained in the March 2022 PIP (3:1) final rule extending the PIP (3:1) compliance date, 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. 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 time frames 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). However, EPA is clarifying that off-road stationary equipment and machinery is included in its understanding of the types of equipment that compose the manufacturing equipment category under 40 CFR 751.407(a)(2)(ix). See Unit III.D.1.f. for more detail.

Lastly, in response to comments, EPA would like to clarify that this rulemaking does not repeal the ''end user'' provision in 40 CFR 751.401(b)(1), which allows the distribution in commerce of the chemical substance, or products and articles that contain the chemical substance, that has previously been sold or supplied to an end user (*i.e.,* an individual or entity that purchased or acquired the finished good for purposes other than resale). While EPA received no comments on this specific provision, other comments are directly related. Additional discussion on continued distribution in commerce of complex articles containing PIP (3:1) is in Unit III.D.5.

c. New and Replacement Parts for Aerospace Vehicles

EPA proposed to repeal the exclusion from prohibition in 40 CFR 751.407(b)(1)(iii) for new and replacement parts for aerospace vehicles and replace it with a phase-in prohibition that would begin 30 years after the publication of the final rule on 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 parts installed in and distributed as part of new aerospace vehicles, and the parts to which PIP (3:1) has been added for such vehicles. EPA also proposed a provision that after the end of the aerospace vehicles' service lives, the manufacturing, processing, and distribution in commerce of aerospace vehicles (*i.e.,* those permissibly manufactured before the compliance time frame ends) that contain PIP (3:1) in any part will be prohibited. Lastly, EPA proposed that after the end of the aerospace vehicles service lives, all persons are prohibited from all manufacturing, processing, and distribution in commerce of PIP (3:1) and PIP (3:1)-containing products for use in replacement parts for aerospace vehicles, and the replacement parts to which PIP (3:1) has been added for such vehicles. EPA is finalizing these provisions with modifications. These new prohibitions will not apply to PIP (3:1)-containing parts that are subject to a new exclusion from prohibition (*e.g.,* wire harnesses and circuit boards).

As discussed in the January 2021 PIP (3:1) final rule, EPA concluded that a similar reasoning applied to the use of PIP (3:1) in new and replacement parts for motor vehicles readily transfers to a review of the justifications for the use of PIP (3:1) for new and replacement parts in aerospace vehicles. 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 longer time periods for the phase-in prohibitions for the use of PIP (3:1) in new and replacement parts for aerospace vehicles.

One commenter (EPA–HQ–OPPT–2023–0376–0295) recommended that EPA retain the full exclusion from prohibitions in the final rule on PIP (3:1) for new and replacement parts for aerospace vehicles. The commenter noted that the Federal Aviation Administration certification process is often necessary and may be multiyear, unpredictable, and lengthy. The commenter further stated that there may be significant unknowns during the process, such as the availability of candidate formulations, the time needed to identify all affected parts and to certify alternatives for the PIP (3:1) products used to manufacture the parts. The commenter also believes there is uncertainty regarding chemical restrictions the EPA may consider and their impact on investments in alternatives research and development. As discussed in the proposed rule, while EPA acknowledges the uncertainty in determining a feasible time frame for phasing-out the use of PIP (3:1) in aerospace parts, EPA understands that the aerospace industry and motor vehicle industry share similar uses. EPA acknowledges that some uses in the aerospace industry may require more time for an appropriate substitute to be found compared with uses in the motor vehicle industry, given the different performance and regulatory requirements the aerospace industry faces, and has provided a longer phase-out period. Nevertheless, given EPA's mandate to reduce exposures to the extent practicable and the other

provisions in this final rule, as the commenter on motor vehicles noted, it is important to accelerate the material substitution of PIP (3:1) for alternatives in the aerospace where it is practicable. EPA is confident that it has identified, based on extensive outreach with industry, those uses (*i.e.,* hydraulic fluids, lubricants, greases, wire harnesses, and circuit boards) that it would not be practicable to phase out. EPA is finalizing these provisions with modifications. Specifically, the prohibition phase-ins for aerospace are being finalized but with exclusions of distribution in commerce for PIP (3:1)-containing parts for aerospace vehicles and the vehicles which contains such parts. This exclusion, now in 40 CFR 751.407(b)(1)(viii), is discussed in more detail in Unit III.D.5.

d. Wire Harnesses and Circuit Boards

EPA is finalizing the new exclusion from the prohibition at 40 CFR 751.407(b)(1)(iii) for the processing and distribution in commerce of PIP (3:1) and PIP (3:1)-containing products for use in wire harnesses and circuit boards, and wire harnesses and circuit boards containing PIP (3:1). This final exclusion is based on industry comments provided in response to the March 2021 notification opening a comment period. Commenters have stated that these components are required to meet certain mandatory regulatory and voluntary industry safety standards (Refs. 44 and 45). According to commenters, alternatives to PIP (3:1) for use as a flame retardant and/or plasticizer in wire harnesses and circuit boards have not been identified (Ref. 11).

Based on information from commenters and engagement with stakeholders, EPA is not aware of a replacement for PIP (3:1) for use in wire harnesses and circuit boards that combines its properties as a plasticizer, a fire retardant, and an anti-wear additive. Hence, EPA agrees with commenters that the replacement for PIP (3:1) in these uses would likely not be a direct substitute but might require multiple chemicals. EPA acknowledges that the process of replacing PIP (3:1) with separate chemicals for each function would likely be time consuming and costly to certify new end-use products and articles (Refs. 45 and 46). EPA is not aware of a technically and economically feasible alternative for PIP (3:1) that would meet the performance requirements and voluntary and regulatory safety standards for these articles. EPA and commenters are not aware of industry efforts to identify or qualify an alternative. For these reasons, EPA is finalizing its proposal that it is impracticable to prohibit the processing and distribution in commerce of PIP (3:1) for use in wire harnesses and circuit boards and PIP (3:1)-containing products for use in wire harnesses and circuit boards, and for wire harnesses and circuit boards containing PIP (3:1).

Several commenters supported the exclusion for wire harnesses and circuit boards. Many commenters also asked EPA to clarify certain aspects of the exclusion. Two commenters (EPA–HQ–OPPT–2023–0376–0284, EPA–HQ–OPPT–2023–0376–0297) noted that in the explanations of the reasons why the exclusion for new and replacement parts for motor vehicles and aerospace vehicles is being repealed and replaced with a prohibition EPA states that the proposed prohibition would not apply to PIP (3:1)-containing parts, in particular for wire harnesses and circuit boards, that would be subject to a new exclusion, if adopted as proposed. One of the commenters asked EPA to clarify that this exclusion takes precedence in the situation where other exemptions or phase-out periods are more limited in nature. The commenter recommended that this statement be included in the written text. EPA accepts this comment and is adding the following statement, ''except for the activities described in paragraph (b) of this section or where another phase-in prohibitions with longer term deadlines exists as described in this section'' to 40 CFR 751.407(a)(2).

One commenter (EPA–HQ–OPPT–2023–0376–0297) requested that 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. EPA is not providing a definition of wire harnesses or circuit boards. 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 scientific 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 explaining EPA's understanding of the use of PIP (3:1) in circuit boards, EPA distinguishes between those elements that come into direct contact with parts conducting or storing electricity and those that do not. The items the commenter (EPA–HQ–OPPT–2023–0376–0297) referred to as necessary ''to secure, cover, or insulate an electronic component that gets attached to a circuit board'' do not come into direct contact with parts that conduct or store electricity and therefore do not necessitate the flame-retardant properties of PIP (3:1) in those components. Hence EPA is not expanding the scope of the circuit board exclusion to include these items and these articles may be subject to the October 2024 deadline for processing and the October 2026 deadline for distribution of PIP (3:1)-containing articles unless excluded under 40 CFR 751.407 (b) or where another phase-in prohibitions with longer term deadlines exists under 40 CFR 751.407(a)(2).

e. Marine Antifouling Coating Product

EPA is finalizing, at 40 CFR 751.407(a)(2)(vii), a five-year compliance deadline for the prohibition of processing and distribution in commerce of PIP (3:1) for use in a FIFRA-registered marine antifouling coating product for Department of Defense uses only. The January 2021 prohibition on processing and distribution of PIP (3:1) has resulted in the inability of the U.S. Navy to obtain a PIP (3:1)-containing, FIFRA-registered marine antifouling coating product. This compliance date extension will allow the U.S. Navy to continue to procure PIP (3:1)-containing coating while it identifies an alternative PIP (3:1)-free formulation.

PIP (3:1) is used as a plasticizer in the formulation of the marine antifouling coating product and is an inert ingredient under FIFRA. In discussion with the U.S. Navy, it indicated that this antifouling coating falls under the ''mission critical'' category because hull corrosion on ships can have significant impacts on ship performance. The U.S. Navy also indicated that it would need five years to develop a suitable alternative formulation and undergo U.S. Navy qualification and testing and the FIFRA approval process. Because no technically feasible alternative is currently available for the U.S. Navy's aluminum-hulled ships due to the U.S.

Navy's specific performance requirements, EPA considers it impracticable to continue prohibiting the processing and distribution of PIP (3:1) for use in this marine antifouling coating product while an alternative is being developed. EPA understands there are suitable alternatives for commercial users and so is limiting this exclusion to this U.S. Department of Defense application. EPA is finalizing this new, 5-year compliance deadline under TSCA section 6(h). One commenter (EPA–HQ–OPPT–2023–0376–0309) supports finalizing the proposed restrictions regarding PIP (3:1) related to FIFRA-registered marine coatings. EPA did not receive comments opposing this provision.

f. Manufacturing Equipment and Semiconductor Manufacturing Industry

In response to comments, EPA is amending the proposed compliance deadline extension of 10 years at 40 CFR 751.407(a)(2)(ix) for processing and distribution in commerce of PIP (3:1), and manufacturing, processing, and distribution in commerce of PIP (3:1)-containing products and articles for use in manufacturing equipment and in the semiconductor industry. EPA received several comments on the proposal regarding articles used in manufacturing equipment and the semiconductor industry. Two commenters supported the 10-year compliance extension for such articles. Several commenters sought to include a particular type of equipment in the articles covered by the proposed extension or to lengthen the compliance time period for a particular type of equipment. For example, one commenter asked EPA to clarify that the semiconductor manufacturing exemption 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. Commenters claiming that 10 years was not sufficient cited complex supply chains and performance requirements. Nine commenters noted that these articles have long service lives and need repair parts during their service lives. Taking these comments together, EPA is finalizing an approach to articles used in manufacturing equipment and in the semiconductor industry 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 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. EPA is also expanding the categories of equipment covered by this approach so that the new compliance deadlines will include electronic equipment, heating, ventilation, air-conditioning, and refrigeration equipment, water-heating equipment, and power generating equipment, including outdoor power equipment. EPA is amending the existing compliance deadline to provide an additional 10 years for new parts for these additional categories, except for consumer electronic equipment, which is still subject to the October 31, 2024 deadline. These phase-in prohibitions to do not apply to articles subject to exclusions, in particular wire harnesses and circuit boards.

As mentioned, the categories are (1) manufacturing equipment, including equipment used in the semiconductor manufacturing industry, (2) electronic equipment (3) heating, ventilation, air-conditioning (HVAC), refrigeration, and water-heating equipment, and (4) power generating equipment. Manufacturing equipment generally refers to industrial machinery, such as automated manufacturing equipment, including robotics, and machine tools, that are an integral part of manufacturing or processing a product or article used in the manufacturing sector, including in semiconductor manufacturing and its ancillary support industries. EPA also includes in the manufacturing category non-road mobile machines, large scale fixed installations, and large scale stationary industrial tools. The electronic equipment category includes three subcategories: consumer electronic equipment, such as cell phones, computers and laptops, and game consoles; commercial equipment, including commercial printers and other business-to-business supplied electronics, as well as such as analysis, measurement, test, monitoring, and control instruments; and laboratory and research equipment, such as electron microscopes and laboratory appliances. The heating, ventilation, air-conditioning, refrigeration, and water-heating equipment category includes residential and commercial HVAC equipment as well as commercial refrigeration equipment. The power generating equipment category includes alternative power generation equipment such as batteries and battery charging equipment as well as outdoor power equipment, such as generators, lawnmowers, chain saws, snow throwers, tillers, and other related products. All these categories are subject to the new provisions EPA is finalizing for parts installed in new equipment, with the exception of consumer electronic equipment.

In the preamble to the proposal, EPA explained that the Agency is not further extending the existing October 31, 2024, compliance deadline for most other articles (see Unit III.D.1.vi. in the proposed rule). EPA also noted the Agency expects that in several industries, such as the textile industries, including consumer electronic equipment, the existing compliance time frame for processing and distribution in commerce of PIP (3:1) for use in articles and PIP (3:1)-containing articles ending October 31, 2024, is sufficient (Ref. 46). EPA also asked for comments on these proposed compliance time frames. Based on comments received, EPA continues to believe that the October 31, 2024, compliance deadline is practicable for the textile and consumer product industries, including consumer electronics. For other categories equipment, including commercial and research equipment, EPA continues to be convinced, as several commenters note, that there are difficulties in identifying PIP (3:1) in supply chains. In addition, commenters noted long development cycles for these types of equipment, and argued that additional time is needed to identify, test, certify, and adopt alternative parts, components, and finished products, as well as time to modify the manufacturing processes to accommodate an alternative substance.

For these reasons, EPA believes a time frame shorter than 10 years would not be practicable for the other categories of equipment identified. The 10-year phase-out for manufacturing and processing of PIP (3:1)-containing parts for use in new equipment being finalized applies to manufacturing equipment, commercial and laboratory electronic equipment, HVAC, refrigeration, and water heating equipment, and power generating equipment. It prohibits, after 10 years, all processing, and distribution in commerce of PIP (3:1) for use in parts for new equipment, and the manufacturing, processing and distribution in commerce of PIP (3:1)-containing products for use in parts for new equipment, and the manufacturing and processing of parts to which PIP (3:1) has been added for such equipment.

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 previously and between categories. Several commenters (EPA–HQ–OPPT–2023–0376–0288, EPA–HQ–OPPT–2023–0376–0297, EPA–HQ–OPPT–2023–0376–0284)) point out that the equipment produced may be designed to operate for a decade or longer and that replacement parts are critical to keep the equipment running. Commenters also note that redesigned parts for existing finished equipment cannot assure the same or similar performance, safety, and reliability as originally designed parts. For manufacturing equipment, 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 and processing of PIP (3:1)-containing replacement parts for 15 years after the manufacturing ban on new PIP (3:1)-containing parts, for a total of 25 years. As discussed previously for new parts, the Agency separated the electronic equipment category into three sub-categories: consumer, 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 new PIP (3:1)-containing parts, 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). Lastly, after the end of the equipment phase-out time periods, all persons are prohibited from all importing and processing of replacement parts for manufacturing equipment, heavy machinery, commercial and laboratory electronic equipment, HVAC, refrigeration, and water heating equipment, and power generating equipment that contain PIP (3:1) in any part. EPA is finalizing an exclusion to allow for the distribution in commerce of PIP (3:1)-containing parts for equipment and equipment containing such parts. This is discussed in more detail in Unit E.

2. Precedence of Phase-In Prohibitions

Several commenters (EPA–HQ–OPPT–2023–0376–0297, EPA–HQ–OPPT–2023–0376–0284, EPA–HQ–OPPT–2023–0376–0295, EPA–HQ–OPPT–2023–0376–0306, EPA–HQ–OPPT–2023–0376–0288, EPA–HQ–OPPT–2023–0376–0310, EPA–HQ–OPPT–2023–0376–0291) asked EPA to clarify exclusion and phase-out precedence. Most commenters requested that EPA make clear that time-limited exemptions did not apply where they were in conflict with an exclusion or time-limited exemption with a longer compliance period, and conversely, that exclusions still applied when they were in conflict with a time-limited exemption.

In the former case, two commenters (EPA–HQ–OPPT–2023–0376–0284, EPA–HQ–OPPT–2023–0376–0295) noted that the current compliance deadline for PIP (3:1) for use in articles addressed by 40 CFR 751.407(a)(2)(iii) does not make clear that such deadline does not apply to articles subject to longer alternative compliance deadlines or exclusions, like articles with PIP-containing adhesives/sealants or lubricants/greases. The commenters noted that the proposed text also did not address the issue. To avoid misunderstanding, the commenters suggested that the existing alternative compliance deadline at 40 CFR 751.407(a)(2)(i) and the proposed alternative compliance deadline at 40 CFR 751.407(a)(2)(iv) should also be described as excepted from the phase-in prohibition at 40 CFR 751.407(a)(2)(iii). In response to these comments, EPA is amending 40 CFR 751.407(a)(2) to clarify that other phase-in prohibitions with longer term deadlines in 40 CFR 751.407(a)(2) or exclusions in 40 CFR 751.407(b) may allow the ongoing manufacture, processing, and/or distribution in commerce, where the terms of the longer-term phase-in or exclusion applies. However, the terms of the phase-in prohibition with a longer term for continued processing and distribution in commerce, for example, must expressly apply. For example, the amended regulatory text is clear that pursuant to 40 CFR 751.407(a)(1) any processing and distribution of PIP (3:1) or PIP (3:1)-containing products or articles is prohibited unless another provision in 40 CFR 751.407(a)(2) or (b) authorizes such processing and distribution in commerce. Neither the adhesive and sealant phase-in provision at 40 CFR 751.407(a)(2)(i) nor the lubricant and grease exclusion at40 CFR 751.407(b)(ii), both in the regulatory text adopted in 2021, allows the processing and distribution of PIP (3:1) for use in producing a PIP (3:1)-containing adhesive or lubricant product for use in any type of article. Those provisions allow a PIP (3:1)-containing lubricant, for example, to be processed and distributed in commerce for use, but not for use in an article. However, there are other provisions that do allow the processing and distribution of PIP (3:1) for use in a specific type of article; where EPA intended to allow PIP (3:1) to be processed or distributed in commerce for use in articles, EPA included reference to the article type in the regulatory provision. For example, 40 CFR 751.407(b)(1)(iii) as codified in 2021, and revisions finalized in 40 CFR 751.407(a)(2)(vi), both expressly address

the processing and distribution of PIP (3:1) for use in replacement parts. It is that express reference to the article, *i.e.,* the replacement part, that authorizes the processing and distribution of PIP (3:1) for that article type. Thus, if there is no provision authorizing processing and distribution of PIP (3:1) for use in an article type, then the prohibition at current 40 CFR 751.407(a)(2)(iii) applies. Using the adhesive and lubricant examples provided by the commenter, processing and distribution of PIP (3:1) for use in an adhesive or lubricant for use in an article type not otherwise addressed in 40 CFR 751.407(a)(2) or (b) is prohibited by 40 CFR 751.407(a)(2)(iii). This is consistent with the 2021 responses to comment on a similar issue.

Similarly, one commenter (EPA–HQ–OPPT–2023–0376–0297) asked EPA to make clear that the exclusion related to circuit boards and harnesses takes precedence in situations where other phase-in periods are more limited in nature. For example, if a PIP (3:1)-containing circuit board is used in the production or repair of a piece of manufacturing equipment that is used in semiconductor manufacturing, or is installed or in need of repair in a piece of heavy equipment used in automotive manufacturing, after the extension period has expired for the semiconductor manufacturing equipment or heavy machinery in automotive manufacturing categories, the PIP (3:1)-containing circuit board would still remain subject to the indefinite exclusion. EPA is clarifying that the final rule allows for the ongoing processing and distribution in commerce of PIP (3:1) for use in wire harnesses and circuit boards generally, and that such exclusion is not limited by the phase-outs in 40 CFR 751.407(a)(2). Thus, processing and distribution of PIP (3:1) may continue, for example, when for use in circuit boards, even after the compliance deadline has passed for the processing and distribution in commerce of PIP (3:1)-containing parts for use in motor or aerospace vehicles and other articles. Since this holds as a general rule for 40 CFR 751.407(a)(2) (the phase-in prohibitions), EPA is adding clarifying language to the regulatory text at 40 CFR 751.407(a)(2) to except the activities described in 40 CFR 751.407(b) (the exclusions from prohibitions).

3. Require Worker Protections During Manufacturing and Processing of PIP (3:1)

EPA is finalizing, with minor modification to recordkeeping requirements, its proposal to require the use of PPE by workers involved in the manufacturing and processing of PIP (3:1) and certain products and articles containing PIP (3:1). EPA proposed to require inhalation and dermal PPE during domestic manufacturing and processing of PIP (3:1) and certain PIP (3:1)-containing products and articles to address potential respiratory and dermal exposure to occupational workers during certain ongoing domestic manufacturing or processing activities involving PIP (3:1), including those for which EPA is finalizing phase-out periods. Because EPA generally presumes the potential for exposure is low during importation, the Agency did not propose worker protections for import of PIP (3:1) and PIP (3:1)-containing products and articles. The Agency also did not propose worker protection for the processing of certain PIP (3:1)-containing products and articles: PIP (3:1)-containing adhesives and sealants, new and replacement parts to which PIP (3:1) has been added for motor and aerospace vehicles, and the motor and aerospace vehicles that contain new and replacement parts to which PIP (3:1) has been added, PIP (3:1)-containing specialized engine filters for locomotive and marine applications, and the products or articles described in 40 CFR 751.405(b)(1)(vi) and (vii). EPA also proposed excluding 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 under new 40 CFR 751.407(f)(7)(iii). Finally, EPA also proposed to require that owners/operators implement a PPE program in alignment with certain elements of OSHA's General Requirements for Personal Protective Equipment at 29 CFR 1910.132 and Respiratory Protection requirements in 29 CFR 1910.134. EPA is finalizing these requirements with slight changes to the recordkeeping provision (see Unit III.D.5).

Where PPE is required, EPA is finalizing its proposal to require implementation of a PPE program in alignment with certain elements of OSHA's General Requirements for Personal Protective Equipment at 29 CFR 1910.132 and Respiratory Protection requirements in 29 CFR 1910.134. EPA is requiring that owners/operators maintain PPE in a sanitary, reliable, and undamaged condition and ensure each potentially exposed person who is required to wear PPE to use such PPE. Under this final rule, owners/operators are required to select and provide PPE that properly fits each potentially exposed person who is required to use PPE and to communicate PPE selections (*e.g.,* demonstration that each item of PPE selected provided prevents exposure during expected duration and conditions of exposure) to each potentially affected person. Where dermal PPE is required, EPA is finalizing a requirement that owners and operators provide gloves that are chemically resistant to PIP (3:1) with activity-specific training where dermal contact with PIP (3:1) is possible.

For the manufacturing and processing of PIP (3:1) and PIP (3:1)-containing products for use in new and replacement parts for motor vehicles, including heavy machinery, and aerospace vehicles, EPA is requiring respiratory protection that must be at least as protective as a NIOSH-approved N95 respirator (APF 10). For processing of PIP (3:1) and PIP (3:1)-containing products for use in the manufacturing of cyanoacrylate adhesives, EPA is finalizing respiratory protection that must be at least as protective as a NIOSH-approved APF 50 respirator, except when the PIP (3:1) or PIP (3:1)-containing product is contained in a closed system. For all other activities covered, EPA is requiring respirators that are at least as protective as a NIOSH-approved APF 10 air-purifying half mask respirator. Based on stakeholder comments (Ref. 36) and OSHA-required Safety Data Sheets, EPA understands these levels of protection are already typically used as industry best practices, although the Agency lacks reasonably available information to determine the scale of adoption. For processing of PIP (3:1) as an intermediate processing aid in the manufacturing of cyanoacrylate adhesives, EPA is requiring engineering controls such that the processing of PIP (3:1) must take place in a closed loop system with general and local exhaust ventilation provided. EPA understands that only one company is currently processing PIP (3:1) for this use, and the proposed engineering controls are the current practice of the company.

EPA is finalizing its proposal that the owner or operator must ensure that all respirators used in the workplace are NIOSH-approved as listed on the NIOSH Certified Equipment List. In choosing appropriate gloves, EPA expects that owners/operators consider the effectiveness of glove type when preventing exposures from PIP (3:1) alone and in likely combination with other chemical substances used in the work area, the degree of dexterity required to perform tasks, and the temperature, as identified in the Hand Protection section of OSHA's Personal

Protective Equipment guidance (Ref. 34). EPA is also finalizing its proposal to require each owner/operator to comply with OSHA's respiratory protection training requirements at 29 CFR 1910.134(k) and general PPE training requirements at 29 CFR 1910.132(f) when using respirators and gloves. Owners/operators must provide PPE training to all persons required to use dermal protection or respiratory protection prior to or at the time of initial assignment to a job involving exposure to PIP (3:1).

4. Manufacturing (Including Import) of PIP (3:1)

Multiple commenters (EPA–HQ–OPPT–2023–0376–0310, EPA–HQ–OPPT–2023–0376–0297, EPA–HQ–OPPT–2023–0376–0288, EPA–HQ–OPPT–2023–0376–0307, EPA–HQ–OPPT–2023–0376–0306, EPA–HQ–OPPT–2023–0376–0290) discussed the import of PIP (3:1)-containing products and articles in their comments. As previously discussed, EPA is finalizing modifications to several exclusions from prohibition finalized in the January 6, 2021, PIP (3:1) final rule. These modifications include narrowing the scope of certain exclusions, adding prohibition phase-in dates, and in some cases creating new exclusions from prohibition for certain uses. In narrowing the scope of certain exclusions, EPA proposed to prohibit the import of the PIP (3:1)-containing articles and PIP (3:1)-containing products for those uses. This is to restrict the ability for these prohibited PIP (3:1)-containing articles and PIP (3:1)-containing products for those uses to be imported where they are no longer allowed to be produced in the United States. EPA is finalizing these phase-in prohibitions on manufacturing, including import, for certain uses under 40 CFR 751.407(a)(2) and has made edits to the regulatory text to make it clear what is prohibited and excluded. EPA modified the general provision title under 40 CFR 751.407(a)(1), to now be titled ''General prohibition *on processing and distribution in commerce,*'' [emphasis added] so that it is clear this provision does not generally apply to any manufacturing of PIP (3:1) or PIP (3:1)-containing products and articles. EPA is not finalizing a general prohibition on the manufacturing of PIP (3:1), consistent with the 2021 PIP (3:1) rulemaking, due to the number of excluded activities which EPA has found it impracticable to prohibit. EPA notes that the absence of a general prohibition on manufacture of PIP (3:1) or PIP (3:1)-containing products or articles does not allow for ongoing distribution in commerce of imported products and articles, where such distribution in commerce is expressly prohibited by another provision in 40 CFR 751.407; where EPA has prohibited the distribution in commerce of a PIP (3:1) or PIP (3:1)-containing products or articles, such prohibition would be applicable to any attempted importation of such PIP (3:1) or PIP (3:1)-containing product or article.

5. Recordkeeping Requirements and Downstream Notification

In the 2021 PIP (3:1) final rule, EPA required that all persons who manufacture, process, or distribute in commerce PIP (3:1) and products and articles containing PIP (3:1) maintain ordinary business records related to compliance with the prohibitions and restrictions for three years and to make records available within 30 days upon request. EPA is increasing the recordkeeping requirement from three to five years and removing the 30-day time frame to make records available. Due to the additional requirements being finalized in this rulemaking, specifically those pertaining to worker safety, EPA considers the five-year time frame regarding recordkeeping and removal of the 30-day time frame to make records available is more appropriate. Furthermore, this five-year time frame aligns with the statute of limitations for civil penalty enforcement (28 U.S.C. 2462), and it is consistent with the time frame associated with other TSCA section 6(a) rulemakings that include worker protection requirements. EPA is confident that extending each rule's recordkeeping requirement to a consistent five-year requirement will facilitate regulated entities' compliance with minimal impact to regulatory burden. In addition, 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 presumes that regulated entities should have the records demonstrating compliance readily available.

In addition, as it relates to recordkeeping for worker protections, EPA is finalizing its proposal to require that owners/operators document respiratory protection used and PPE program implementation and retain those records for five years. One commenter (EPA–HQ–OPPT–2023–0376–0312) requested that EPA modify its worker protection recordkeeping requirements to specify that records be made available to exposed workers and their representatives and to extend the record retention period. This commenter supports EPA's decision to eliminate the 30-day compliance period, thus making records immediately available to the Agency, but emphasized the importance of making records available to workers and their representatives as well. The commenter stated that this 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 time frame. The commenter argued that the health effects due to exposure to toxic chemicals can exhibit long latency periods. This information about latency, the commenter expressed, should be available to workers throughout the period of potential consequences of an exposure.

As discussed in the proposed rule, the final five-year time frame is consistent with those associated with other TSCA section 6(a) rulemakings and 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 determined that regulated entities should have the records demonstrating compliance readily available due to previous recordkeeping requirements for 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 and to their designated representatives as well, EPA has modified the workplace protection records requirements for PIP (3:1) 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.

EPA is also amending the downstream notification statement that must accompany shipments of PIP (3:1) or PIP (3:1) containing products to conform to the terms of the prohibitions in the final rule. 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 period should allow time to clear products 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 SD 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.

5. Continued Distribution of PIP (3:1)-Containing Articles & Continued Processing & Distribution of PIP (3:1)-Containing Articles for Repair and Maintenance

EPA received multiple comments on the continued use of articles, including finished goods containing such articles, which may contain PIP (3:1). For example, some commenters stated that certain PBT-containing articles would need to be disposed of or retired from use earlier than needed due to EPA's prohibitions and restrictions which would not allow for repair or general maintenance of an existing component. Such commenters (EPA–HQ–OPPT–2023–0376–0284, EPA–HQ–OPPT–2023–0376–0305, EPA–HQ–OPPT–2023–0376–0293, EPA–HQ–OPPT–2023–0376–0310) noted that finished goods move around in distribution channels and usually stay in inventory for weeks to several months, that retailers do not have control over how quickly these goods are sold and do not necessarily operate under a first-in, first-out operation, and that retailers would have difficulty differentiating between PIP (3:1)-containing articles from non-PIP (3:1)-containing articles, and may want to return the entire stock of goods (EPA–HQ–OPPT–2023–0376–0284, EPA–HQ–OPPT–2023–0376–0293). Commenters also noted the resulting negative impact of strictly eliminating stocks based on a ''distribution in commerce'' deadline may cause enormous economic and environmental impact (EPA–HQ–OPPT–2023–0376–0284, EPA–HQ–OPPT–2023–0376–0293, EPA–HQ–OPPT–2023–0376–0301, EPA–HQ–OPPT–2023–0376–0305, EPA–HQ–OPPT–2023–0376–0310). For example, one of the commenters noted that premature obsolescence would result in substantial economic losses as affected equipment becomes stranded assets, impacting the environment and the economy. Another commenter noted that companies may carry thousands of spare parts for discontinued goods for up to and beyond 10 years so customers can extend the life of the good (EPA–HQ–OPPT–2023–0376–0293). Two commenters also asked EPA to reiterate that the provision at 40 CFR 751.401(b)(1) permits an article or product that has been purchased or acquired other than for resale to be re-distributed, leased, or re-sold (EPA–HQ–OPPT–2023–0376–0297, EPA–HQ–OPPT–2023–0376–0284). These two commenters also requested that EPA make clear that the language in 40 CFR 751.401(b)(1) permits the movement within the United States of complex manufacturing equipment and durable goods that might contain PIP (3:1)-containing components when such equipment or durable goods were manufactured prior to the date of any final prohibition in the PIP (3:1) regulation (EPA–HQ–OPPT–2023–0376–0297, EPA–HQ–OPPT–2023–0376–0284). One commenter requested that EPA make clear that all existing products and articles that were manufactured prior to the various final effective dates in the PBT regulations are exempt (EPA–HQ–OPPT–2023–0376–0297). Another commenter noted that if an article needs to be repaired but was manufactured before the effective date of the final rules, it is simply impossible to check compliance on the article since the article was not managed to comply with the rules (EPA–HQ–OPPT–2023–0376–0284).

EPA is amending the regulatory text covering PIP (3:1) in a number of different ways to address these comments. First, EPA is amending the proposed regulatory text for a number of activities addressed in 40 CFR 751.407(a)(2) and adding an additional regulatory provision in 40 CFR 751.407(b) to make clear that the general prohibition in 40 CFR 751.407(a)(1) and the general phase-in prohibition for articles at 40 CFR 751.407(a)(2)(iii) do not apply to the distribution in commerce of certain PIP (3:1)-containing articles and the finished goods containing such articles, like 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 such parts for such complex articles, where the manufacture and process of the part complies with the phase-in prohibition in 40 CFR 751.407(a)(2). For example, 40 CFR 751.407(a)(2)(v), as proposed, would have prohibited the distribution in commerce, after 15 years from the publication date, of PIP (3:1)-containing parts for new motor vehicles and the new motor vehicles containing those parts.

EPA has amended that provision to remove the prohibition on distribution in commerce of such parts and vehicles and EPA has added a new provision, 40 CFR 751.407(b)(viii), to exclude the distribution in commerce of such parts and vehicles from the general prohibition in 40 CFR 751.407(a)(1) and general phase-in prohibition in 40 CFR 751.407(a)(2)(iii). However, to be clear, the manufacturing and processing of such parts for such vehicles after 15 years from the date of publication of this rule is prohibited [and distribution in commerce of parts that do not comply with that requirement is not permitted by 40 CFR 751.407(b)(viii). Thus, as long as the parts meet the requirements in 40 CFR 751.407(a)(2)(v) relating to the manufacture and processing of such parts, the parts and the vehicles containing such parts may be distributed in commerce, for any reason, including as new or for use or resale. Similar changes have been made to similar provisions, *i.e.,* for replacement parts for motor vehicles addressed in 40 CFR 751.407(a)(2)(vi), new and replacement parts for aerospace vehicles addressed in 40 CFR 751.407(a)(2)(vii) and (viii), respectively, and new and replacement parts for manufacturing equipment addressed in 40 CFR 751.407(a)(2)(ix) and (x), respectively. A prohibition on the distribution in commerce of these complex articles would not be practicable; to the contrary, it would be extremely burdensome, necessitating the identification of parts containing PIP (3:1).

EPA is also amending 40 CFR 751.407(a)(2)(iii) to allow for an additional two years for the distribution of PIP (3:1) containing articles subject to the October 31, 2026, compliance deadline in order for those articles to clear channels of trade.

Second, EPA is adding 40 CFR 751.407(b)(1)(viii) to allow processing and distribution in commerce for maintenance and repair of existing PIP (3:1)-containing articles. EPA has stated in the 2021 final rules that is not practicable to use its TSCA section 6(a) authorities to regulate commercial use of products and articles containing the PBT chemicals, such as televisions and computers, because it would be extremely burdensome, necessitating the identification of articles, and the disposal of countless articles that would have to be identified and replaced. For similar reasons, EPA does not believe restricting continued maintenance and repair of existing PIP (3:1)-containing articles is practicable. Commenters raised the need for repair and maintenance for certain PIP (3:1)-containing articles, like equipment and machinery, which could result in the distribution in commerce and processing that would have been prohibited after relevant phase-in prohibition dates. Thus, in response to these comments, EPA is amending the provisions in 40 CFR 751.407 to exclude

processing and distribution in commerce of an article for the purpose of repair or maintenance, where PIP (3:1) has not been newly added. This exclusion is limited to processing where the PIP (3:1) is not newly added in any part, and it is limited to repair and maintenance of a PIP (3:1)-containing article. It also differs from the existing ''end user'' provision in 40 CFR 751.401(b)(1), which allows the distribution in commerce of the chemical substance, or products and articles that contain the chemical substance, that have previously been sold or supplied to an end user. The ''end user'' provision does not include processing as a part of the exclusion, and it only applies to an individual or entity that purchased or acquired the finished good for purposes other than resale.

Several commenters also supported a ''manufactured-by'' approach to allow for the sell-through of existing articles and spare parts and further processing and distribution of articles after compliance deadlines. Commenters state that manufacturers can only control the date of manufacture, not the date of distribution in commerce and, further, that manufacturers cannot ensure compliance after the product has left their control (EPA–HQ–OPPT–2023–0376–0284, EPA–HQ–OPPT–2023–0376–0305, EPA–HQ–OPPT–2023–0376–0293, EPA–HQ–OPPT–2023–0376–0310). Multiple commenters advocated for a manufactured-by date approach that clarifies that products that contain PIP (3:1) that have been manufactured prior to the prohibition dates may continue to be processed and distributed, and used indefinitely, allowing for continued servicing of equipment that are designed to remain in service for many years with articles containing PIP (3:1) through the lifetime of the equipment and not penalizing dealers with stranded inventory (EPA–HQ–OPPT–2023–0376–0297, EPA–HQ–OPPT–2023–0376–0284, EPA–HQ–OPPT–2023–0376–0305).

As discussed in the response to comments to the 2019 PBT proposed rule, EPA does not think, unless otherwise specified, that all products and articles containing PBT chemicals should continue to be processed and distributed without end, as it is practicable eventually to build and service most products that do not contain PBTs, as goods reach the end of their service lives and replacement parts that do not contain PBTs become available. EPA therefore is not adopting a generally applicable ''manufactured by'' provision. Instead, EPA has finalized specific phase-in prohibitions or exclusions for certain PBT-containing articles and finalized an exclusion solely for the purpose of repair and maintenance of an existing article.

E. Regulatory Threshold Level for DecaBDE and PIP (3:1)

In the 2021 PBT final rules, EPA declined to establish a general exclusion for PBTs 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). When extending the compliance deadline for PIP (3:1) in March 2022, EPA received comments on establishing a *de minimis* level for PIP (3:1) (Ref. 47). At that time, EPA indicated that the Agency would consider these comments in the context of the broader rulemaking EPA planned to undertake for PIP (3:1) and other PBT chemicals, *i.e.,* in this rulemaking. In the proposal to this rule, EPA noted that a commenter (Ref. 48) proposed that EPA adopt a threshold limit of no less than 0.001% for the presence of PIP (3:1) and 0.1% for the presence of decaBDE in articles. EPA asked for comments on this proposal, specifically, and on a *de minimis* level in general.

During the comment period for this rule, several commenters requested that EPA establish a de minimis exemption for decaBDE and PIP (3:1) (EPA–HQ–OPPT–2023–0376–0288, EPA–HQ–OPPT–2023–0376–0292, EPA–HQ–OPPT–2023–0376–0297). As noted previously, one commenter proposed that EPA adopt a threshold limit of no less than 0.001% for the presence of PIP (3:1) and 0.1% for the presence of decaBDE in articles. Another commenter stated that a *de minimis* threshold is consistent with TSCA's requirement to reduce exposures ''to the extent practicable'' (EPA–HQ–OPPT–2023–0376–0292). Further, without a threshold, this commenter and another stated that regulated entities would not know whether they are in compliance, as detection levels are constantly being reduced and that certainty regarding the lack or presence of the substance is unachievable (EPA–HQ–OPPT–2023–0376–0288, EPA–HQ–OPPT–2023–0376–0292). One of these commenters 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 (EPA–HQ–OPPT–2023–0376–0292). The Agency received no comments adverse to a regulatory threshold for either decaBDE or PIP (3:1).

Commenting on PIP (3:1), one commenter noted that ''the lack of a de minimis threshold ensures that manufacturers will need to account for, and remove, trace amounts of PIP (3:1) in their products, which will require expensive lab testing to confirm (assuming PIP (3:1) can be found above the limit of detection)'' (EPA–HQ–OPPT–2023–0376–0308). One commenter pointed out the potential for cross contamination since components subject to a prohibition may be manufactured in the same facilities as components containing PIP (3:1) (EPA–HQ–OPPT–2023–0376–0305). At least one commenter requested EPA distinguish between intentionally added PIP (3:1) and unintentional impurities (EPA–HQ–OPPT–2023–0376–0001). A number of commenters also noted that in a complex supply chain it may not always be possible to secure contract specifications or assurances from suppliers regarding the presence of PIP (3:1) and that it would be resource intensive to demonstrate the complete absence of a chemical if there is no threshold to make that determination (EPA–HQ–OPPT–2023–0376–0310, EPA–HQ–OPPT–2023–0376–0306, EPA–HQ–OPPT–2023–0376–0308, EPA–HQ–OPPT–2023–0376–0288).

For decaBDE, three commenters argued that a threshold is also needed, and two commenters recommended that EPA set it at 0.1% to align with other major regulatory regimes, such as the Restriction of Hazardous Substances (RoHS) (EPA–HQ–OPPT–2023–0376–0288, EPA–HQ–OPPT–2023–0376–0292, EPA–HQ–OPPT–2023–0376–0297). Several commenters on this issue recommended EPA adopt a 0.1% concentration level for PIP (3:1) as well. (EPA–HQ–OPPT–2023–0376–0297, EPA–HQ–OPPT–2023–0376–0310, EPA–HQ–OPPT–2023–0376–0306, EPA–HQ–OPPT–2023–0376–0308). One of the commenters recommended that, as a practical matter, EPA establish in all TSCA section 6(h) regulations for PBTs a de minimis standard of 0.1% by weight of the finished product or article. One commenter (EPA–HQ–OPPT–2023–0376–0310) argued that a 0.1% concentration level is consistent with EPA's export notification requirement for known or suspected carcinogens (EPA–HQ–OPPT–2023–0376–0306, EPA–HQ–OPPT–2023–0376–0310, EPA–HQ–OPPT–2023–0376–0308), and that, while PIP (3:1) is not covered under Europe's RoHS, a 0.1% concentration level is at least consistent with the level set for most chemicals under RoHS.

EPA agrees with these comments and believes that setting a regulatory

threshold level for unintentional decaBDE and PIP (3:1) present in products and articles at less than 0.1% by weight is a practicable solution, particularly for situations involving complex supply chains. This regulatory threshold level will also aid the regulated community in complying with the prohibitions. Commenters noted that they have limited visibility into their supply chains and cannot always obtain assurances from suppliers regarding the presence of decaBDE in their products (EPA–HQ–OPPT–2023–0376–0288, EPA–HQ–OPPT–2023–0376–0292, EPA–HQ–OPPT–2023–0376–0297). Commenters also noted that test methods cannot demonstrate zero content of any substance. EPA agrees that testing to zero would not be practicable due to costs and challenges with testing for PBTs. The 0.1% regulatory threshold level for unintentional levels of decaBDE and PIP (3:1) provides certainty for entities that do not intentionally add decaBDE or PIP (3:1), but where it may be unintentionally present in their supply chains below the regulatory threshold level due to cross-contamination. Intentional use of decaBDE or PIP (3:1) in products or articles at any concentration is prohibited in non-excluded uses. EPA is not establishing a regulatory threshold level for unintentional amounts of other PBTs at this time.

The regulatory threshold level of 0.1% in this final rule applies to products and articles measured by weight, except for any amount present due to an excluded use or phased-out use that has not yet reached its compliance deadline. For complex assemblies of articles, the regulatory threshold level applies to each article individually and not to the complex assembly as a whole. EPA is not adopting the interpretation of article suggested by one commenter, namely that concentrations of a substance present in components of an assembly of articles be measured against the total weight of the assembly (EPA–HQ–OPPT–2023–0376–0306). The commenter stated the belief that EPA's interpretation was aligned with this understanding of how to account for concentrations of a substance in an article (EPA–HQ–OPPT–2023–0376–0306). EPA disagrees, and notes that the definition of an article, provided at 40 CFR 751.403 provides the clarification the comment seeks. The term ''article'' as defined in 40 CFR 751.403, paragraphs (1) and (2), is a manufactured item ''[w]hich is formed to a specific shape or design during manufacture,'' and ''[w]hich has end use function(s) dependent in whole or in part upon its shape or design during end use.'' EPA determined that the individual parts of a complex assembly of parts would meet this definition. EPA is not providing additional interpretive guidance at this time, as the Agency believes the definition of article is sufficiently clear in this regard.

In setting a regulatory threshold level, EPA considered other regulatory thresholds, such as OSHA, which included a 0.1% threshold for determining hazards from certain chemicals to absolve employers from having to evaluate and list chemicals present in mixtures in small quantities that may not result in substantial exposures, and EPA's export notification requirements and reporting requirements under the Toxics Release Inventory Reporting under the Emergency Planning and Community Right-to-know Act, both of which set a threshold of 0.1% for some chemicals. Another example is the European Union's Regulation on the registration, evaluation, authorization and restriction of chemicals (REACH), which states that decaBDE ''Shall not be used in the production of, or placed on the market in . . . an article, or any part thereof, in a concentration equal to or greater than 0.1% by weight.'' (Ref. 49). Suppliers' familiarity with these levels ought to reduce the administrative burden associated with tracking different thresholds for different uses. EPA also considered the concentration level of 0.001% for PIP (3:1) suggested by a commenter (EPA–HQ–OPPT–0376–0288). This commenter recommended this lower level when PIP (3:1) is measured against the weight of the article as a whole in complex assemblies, rather than each component article that makes up the complex assembly. It is not clear that a regulatory threshold level this low would be practicable for individual components or across industries.

EPA previously reasoned that setting a single regulatory threshold level of 0.1% for all uses is not practicable, given the concentrations of these two chemicals in the supply chain for different types of products, which would make establishing a concentration threshold for each use overly burdensome and impracticable. Given the comments from stakeholders noting that a 0.1% concentration level is consistent with EPA's export notification requirement and is at least consistent with the level set for most chemicals under RoHS, EPA now concludes that stakeholders would be able to comply with a single regulatory threshold level, despite the differing concentrations for different types of products and articles.

Since decaBDE and PIP (3:1) are additive chemicals and are not known to be present as a byproduct, EPA is not establishing a regulatory threshold level where decaBDE or PIP (3:1) is intentionally added. EPA is confident that where decaBDE is intentionally added, it is intended to be present at concentrations at least an order of magnitude higher than 0.1% and EPA has adopted regulatory controls to address such intentional activities. Commenters provided information indicating that an 0.1% concentration is generally below the levels present in the majority of intentional uses of PIP (3:1). However, EPA is aware of the manufacture and processing of certain products or articles containing PIP (3:1) at levels intentionally well below 0.1% (Ref. 50). In such cases, PIP (3:1) levels in such products or articles will be presumed to be intentional and thus the regulatory threshold level of 0.1% adopted in this rule would not apply to those products or articles. Thus, this regulatory threshold of 0.1% allows a practicable approach for managing unintentionally present decaBDE and PIP (3:1).

EPA had previously declined to set a regulatory threshold level in part because EPA asserted that setting a threshold level would require expensive testing. However, EPA is making clear that testing is not required. While that is the case, 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 0.1% regulatory threshold level.

IV. The Reasonably Ascertainable Economic Consequences of the Final Rule

A. Overview of Cost Methodology

EPA has evaluated the potential costs of the final rule. Industry costs may arise from implementing measures to protect from exposure or switching from the manufacture or use of the chemical to a substitute. These costs include: reformulation of prohibited products using alternative chemicals to manufacture the product, or the price differential of available substitute products that do not contain PIP (3:1), providing workers with the required personal protective equipment (*e.g.,* respirators and gloves), product labeling or signage to provide notice to workers that PPE is required to be worn during recycling, refurbishing, or processing of existing plastic shipping pallets rule

familiarization and recordkeeping based on burdens estimated for other similar rulemakings. Costs were annualized over a 30-year period. Other potential costs include, but are not limited to, those associated with testing, release prevention, imported articles, and some portion of potential revenue loss.

B. Estimated Costs of This Final Rule

Total quantified annualized industry costs for the final rule are estimated to be $400 million at a 3 percent discount rate and $430 million at a 7 percent discount rate annualized over 30 years. Costs at a 2 percent discount rates are estimated at $390 million (shown in appendix A of the accompanying Economic Analysis for this final rule). Of the final rule costs, those associated with decaBDE alone were approximately $86 at a 3 percent discount rate and $128 at a 7 percent discount rate. Costs associated with PIP (3:1) were $400 million and $430 million (at 3 and 7 percent discount rates, respectively.) Of this total, worker protection (PPE) costs under the final regulatory option annualized at a 3 percent discount rate is $373 million and $410 million at a 7 percent discount rate with PIP (3:1) accounting for all costs. The reason for the large disparity in the costs between decaBDE and PIP (3:1) results from the difference in the number of firms using each chemical under the final rule's regulated activities. There are only two firms known to be using decaBDE that will be impacted by this final rule. Substantially more firms (up to 26,803) could potentially be impacted by the PIP (3:1) final rule requirements based on the sectors impacted. Prohibition costs for PIP (3:1) annualized at a 3 percent discount rate were estimated at $27 million and $20 million annualized at a 7 percent discount rate. For the economic analyses for the 2021 PBT final rules, EPA estimated that it would need one full-time equivalent (FTE) employee for implementation (*e.g.,* compliance assistance and enforcement) activities under both the 2021 decaBDE and PIP (3:1) final rules (two FTE employees total). This final rule will modify those existing rules. Therefore, EPA does not expect that it will require any additional (incremental) Agency staff time to implement the rules under the final revisions (final or primary alternative options).

1. Benefits

A qualitative discussion of the potential benefits associated with the final action for decaBDE and PIP (3:1) is provided. PIP (3:1) is a neurotoxicant and aquatic toxicant with high persistence and high potential for bioaccumulation. DecaBDE has been found to have 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. Research has also indicated that decaBDE is acutely toxic to fish and aquatic invertebrates. As a result of this final rule, prohibition and PPE requirements, EPA anticipates decreased potential for occupational exposures and reduced potential for exposures to the general population, potentially exposed or susceptible subpopulations, and the environment.

2. Cost Effectiveness and Effect on National Economy, Small Business, and Technological Innovation

With respect to the cost effectiveness of the final regulatory action and the primary alternative regulatory action, EPA is unable to perform a traditional cost-effectiveness analysis of the actions and alternatives for the PBT chemicals. As discussed in the proposed rule, the cost effectiveness of a policy option would properly be calculated by dividing the annualized costs of the option by a final outcome, such as cancer cases avoided, or to intermediate outputs such as tons of emissions of a pollutant curtailed. Without the supporting analyses for a risk determination, EPA is unable to calculate either a health-based or environment-based denominator. Thus, EPA is unable to perform a quantitative cost-effectiveness analysis of the primary and alternative regulatory actions. However, by evaluating the practicability of the final and alternative regulatory actions, EPA is confident that it has considered elements related to the cost effectiveness of the actions, including the cost and the effect on exposure to the PBT chemicals of the primary and alternative regulatory actions.

EPA considered the anticipated effect of this final rule on the national economy and concluded that this rule is highly unlikely to have any measurable effect on the national economy (Ref. 17). EPA analyzed the expected impacts on small business and found that of the 24,865 small businesses potentially impacted by the rule, 860 are expected to incur cost impacts between 1 and 3 percent of their annual revenue. No entities are expected to be impacted above 3 percent of their annual revenue (Ref. 17). Finally, EPA has determined that this final rule is unlikely to have significant impacts on technological innovation, although the rule may create some incentives for chemical manufacturers to develop new chemical alternatives to PIP (3:1).

V. References

The following is a listing of the documents that are specifically referenced in this document. The docket includes these documents and other information considered by EPA, including documents that are referenced within the documents that are included in the docket, even if the referenced document is not physically located in the docket. For assistance in locating these other documents, please consult those listed under **FOR FURTHER INFORMATION CONTACT**.

1. EPA. 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); Proposed Rule. **Federal Register** (88 FR 82287, November 24, 2023) (FRL–9145–01–OCSPP).
2. EPA. TSCA Work Plan for Chemical Assessments: 2014 Update. October 2014.
3. EPA. TSCA Work Plan Chemicals: Methods Document. February 2012.
4. EPA. Decabromodiphenyl Ether (DecaBDE); Regulation of Persistent, Bioaccumulative, and Bioaccumulative, and Toxic Chemicals Under TSCA Section 6(h); Final Rule. **Federal Register** (86 FR 880, January 6, 2021) (FRL–10018–87).
5. EPA. Phenol, Isopropylated Phosphate (3:1) (PIP (3:1)); Regulation of Persistent, Bioaccumulative, and Toxic Chemicals Under TSCA Section 6(h); Final Rule. **Federal Register** (86 FR 894, January 6, 2021) (FRL–10018–88).
6. EPA. 2,4,6-tris(tert-butyl) phenol (2,4,6-TTBP); Regulation of Persistent, Bioaccumulative, and Toxic Chemicals Under TSCA Section 6(h); Final Rule. **Federal Register** (86 FR 866, January 6, 2021) (FRL–10018–90).
7. EPA. Hexachlorobutadiene (HCBD); Regulation of Persistent, Bioaccumulative, and Toxic Chemicals Under TSCA Section 6(h); Final Rule. **Federal Register** (86 FR 922, January 6, 2021) (FRL–10018–91).
8. EPA. Pentachlorothiophenol (PCTP); Regulation of Persistent, Bioaccumulative, and Toxic Chemicals Under TSCA Section 6(h); Final Rule. **Federal Register** (86 FR 911, January 6, 2021) (FRL–10018–89).
9. Executive Order 13990. Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis. **Federal Register** (86 FR 7037, January 25, 2021).
10. EPA. Regulation of Persistent, Bioaccumulative, and Toxic Chemicals Under TSCA Section 6(h); Phenol, Isopropylated Phosphate (3:1); Compliance Date Extension Final Rule. **Federal Register** (86 FR 51823, September 17, 2021) (FRL–6015.5–03–OCSPP).

11. EPA. Regulation of Persistent, Bioaccumulative, and Toxic Chemicals Under TSCA Section 6(h); Phenol, Isopropylated Phosphate (3:1); Request for Comments. **Federal Register** (86 FR 14398, March 16, 2021) (FRL–10021–08).
12. Letter to EPA from the Consumer Technology Association and the Information Technology Industry Council to EPA on March 15, 2021. Document No. EPA–HQ–OPPT–2021–0202–0015.
13. EPA. Regulation of Persistent, Bioaccumulative, and Toxic Chemicals Under TSCA Section 6(h); Phenol, Isopropylated Phosphate (3:1); Further Compliance Date Extension Proposed Rule. **Federal Register** (86 FR 59684, October 28, 2021) (FRL–6015.6–01–OCSPP).
14. EPA. Regulation of Persistent, Bioaccumulative, and Toxic Chemicals Under TSCA Section 6(h); Phenol, Isopropylated Phosphate (3:1); Further Compliance Date Extension Final Rule. **Federal Register** (87 FR 12875, March 8, 2022) (FRL–6015.6–02–OCSPP).
15. Comments submitted to EPA. Regulation of Persistent, Bioaccumulative, and Toxic Chemicals Under TSCA Section 6(h) on March 16, 2021. Docket ID: EPA–HQ–OPPT–2021–0202–0001.
16. Yurok Tribe. Public Comment Submitted to EPA RE: Comments on Regulation of Persistent, Bioaccumulative, and Toxic Chemicals Under TSCA Section 6(h) on May 17, 2021. Comment ID: EPA–HQ–OPPT–2021–0202–0077.
17. EPA. Economic Analysis for Regulation of Phenol, isopropylated phosphate (3:1) (PIP (3:1)) and Decabromodiphenyl ether (DecaBDE) Under TSCA Section 6(h). October 2024.
18. EPA. 2021 Policy on Children's Health. *https://www.epa.gov/system/files/documents/2021-10/2021-policy-on-childrens-health.pdf.*
19. EPA. Exposure and Use Assessment of Five Persistent, Bioaccumulative, and Toxic Chemicals. December 2020. (For references and supporting documentation, see EPA–HQ–OPPT–2019–0080).
20. EPA. 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): Response to Public Comments. October 2024.
21. EPA. Proposed Rule Webinar Transcript. March 21, 2024. ID: EPA–HQ–OPPT–2023–0376–0315.
22. Comment from the American Coatings Association (ACA) to EPA on May 21, 2021. Comment ID: EPA–HQ–OPPT–2021–0202–0144.
23. Centers for Disease Control and Prevention (CDC). NIOSH Hierarchy of Controls. *https://www.cdc.gov/niosh/topics/hierarchy/default.html.*
24. EPA. Environmental and Human Health Hazards of Five Persistent, Bioaccumulative and Toxic Chemicals. December 2020. (For references and supporting documentation, see also EPA–HQ–OPPT–2019–0080).
25. EPA. Preliminary Information on Manufacturing, Processing, Distribution, Use, and Disposal: Decabromodiphenyl ether. August 2017. Docket No. EPA–HQ–OPPT–2016–0724–0002.
26. Stakeholder Comment from Auto Alliance. February 2018.
27. Stakeholder Comment from iGPS. January 2018.
28. EPA. Access Chemical Data Reporting: 2020 CDR Data. Last updated on May 16, 2022.
29. EPA. Exposure and Use Assessment of Five Persistent, Bioaccumulative, and Toxic Chemicals. June 2019.
30. Norwegian Environmental Agency. Final Report. Literature Study—DecaBDE in Waste Streams. 2015.
31. Yurok Tribe. Letter to EPA RE: the Tribal Consultation on DecaBDE Risk Management Rule on January 3, 2023.
32. Centers for Disease Control and Prevention (CDC). NIOSH Certified Equipment List. *https://www.cdc.gov/niosh/npptl/topics/respirators/cel/.*
33. Occupational Safety and Health Administration. Assigned Protection Factors for the Revised Respiratory Protection Standard. OSHA 3352–02 2009. *https://www.osha.gov/sites/default/files/publications/3352-APF-respirators.pdf.*
34. Occupational Safety and Health Administration. Personal Protective Equipment. OSHA 3151–02R 2023. *https://www.osha.gov/sites/default/files/publications/osha3151.pdf.*
35. EPA (2021c). TRI Toxics Tracker, U.S. Environmental Protection Agency. *https://edap.epa.gov/public/extensions/TRIToxicsTracker/TRIToxicsTracker.html.*
36. EPA. Regulation of Persistent, Bioaccumulative, and Toxic Chemicals Under TSCA Section 6(h) RIN 2070–AK34; Response to Public Comments. December 2020.
37. Letter from the Nuclear Regulatory Commission to the EPA on March 31, 2023. (EPA–HQ–OPPT–2023–0376–0230).
38. Letter from the Nuclear Energy Institute to the EPA on February 10, 2023. (EPA–HQ–OPPT–2023–0376–0280).
39. EPA. Enforcement Statement Regarding the Prohibition of Processing and Distribution in Commerce of Decabromodiphenyl Ether (DecaBDE)-Containing Wire and Cable Insulation in Nuclear Power Generation Facilities under 40 CFR 751.405(a)(2)(ii). May 2, 2023. *https://www.epa.gov/system/files/documents/202305/Enforcement%20Statement%20Regarding%20DecaBDE%205%202%202023.pdf.*
40. EPA. 2023 DecaBDE Settlement: In the Matter of RSCC Wire & Cable LLC. Docket No. TSCA–HQ–2023–5006. May 1, 2023. *https://yosemite.epa.gov/oa/EAB_Web_Docket.nsf/Unpublished~Final~Orders/8A750189B8B8E14A852589A20072ACCC/$File/RSCC%20CAFO%20final%20order%202023.05.01%201510.pdf.*
41. United Nations Environmental Program Stockholm Convention on Persistent Organic Pollutants (2015). Risk profile on decabromodiphenyl ether. Report of the Persistent Organic Pollutants Review Committee on the work of its eleventh meeting.
42. Comment submitted to EPA from the National Elevator Industry, Inc. on March 24, 2021. Comment ID: EPA–HQ–OPPT–2021–0202–0131.
43. Comment submitted to EPA from the Motor & Equipment Manufacturers Association and the Alliance for Automotive Innovation on May 20, 2021. Comment ID: EPA–HQ–OPPT–2021–0202–0110.
44. Comment to EPA from the Consumer Technology Association, IPC, and Information Technology Industry Council on May 24, 2021. Comment ID: EPA–HQ–OPPT–2021–0202–0148.
45. Comment submitted to EPA from The Boeing Company on May 20, 2021. Comment ID: EPA–HQ–OPPT–2021–0202–0102.
46. Comment submitted to EPA from the Association of Equipment Manufacturers on May 14, 2021. Comment ID: EPA–HQ–OPPT–2021–0202–0053.
47. Comment submitted to EPA from SEMI and the Semiconductor Equipment Association of Japan on May 20, 2021. Comment ID: EPA–HQ–OPPT–2021–0202–0121.
48. Letter from the Semiconductor Equipment and Materials International (SEMI) to EPA on August 4, 2023. Comment ID: EPA–HQ–OPPT–2023–0376–0317.
49. European Union's Regulation on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), Annex XVII: Restrictions on the Manufacture, Placing on the Market and Use of Certain Dangerous Substances, Mixtures and Articles. *https://reachonline.eu/reach/en/annex-xvii.html.*
50. Fujifilm FUJICHROME Velvia 100® color film. *https://www.fujifilm.com/us/en/business/professional-photography/film/velvia-100.*
51. EPA. Supporting Statement for an Information Collection Request (ICR) under the Paperwork Reduction Act (PRA); 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). Final Rule (RIN 2070–AL02). EPA ICR No. 2779.02 and OMB Control No. 2070–0230. October 2024.

VI. Statutory and Executive Order Reviews

Additional information about these statutes and Executive orders can be found at *https://www.epa.gov/laws-regulations-and-executive-orders.*

A. Executive Order 12866: Regulatory Planning and Review and Executive Order 14094: Modernizing Regulatory Review

This action is a ''significant regulatory action'' as defined under section 3(f)(1)

of Executive Order 12866 (58 FR 51735, October 4, 1993), as amended by Executive Order 14094 (88 FR 21879, April 11, 2023). Accordingly, EPA submitted this action to the Office of Management and Budget (OMB) for Executive Order 12866 review. Documentation of any changes made in response to the Executive Order 12866 review is available in the docket. EPA prepared an Economic Analysis of the potential costs and benefits associated with this action (Ref. 17). A copy of this Economic Analysis is available in the docket, is briefly summarized in Unit I.E. and discussed in Unit IV.

B. Paperwork Reduction Act (PRA)

The information collection activities in this rule have been submitted to OMB for approval under the PRA, 44 U.S.C. 3501 *et seq.* The Information Collection Request (ICR) document that EPA prepared is assigned EPA ICR No. 2779.02 and OMB Control No. 2070–0230 (Ref. 51). You can find a copy of the ICR in the docket and it is briefly summarized here. The information collection requirements are not enforceable until OMB approves them.

Respondents/affected entities: See Unit I.A.

Respondent's obligation to respond: Mandatory (TSCA section 6(h) and 40 CFR 751.407).

Frequency of response: On occasion.

Total estimated number of respondents: 26,805 (12,846 manufacturers/importers/processors and 13,957 distributors).

Total estimated burden: 42,300 hours (per year). Burden is defined at 5 CFR 1320.3(b).

Total estimated cost: $3,288,625 (per year), includes $0 annualized capital or operation and maintenance costs.

An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for EPA regulations in 40 CFR are listed in 40 CFR part 9. When OMB approves this ICR, the Agency will announce that approval in the **Federal Register** and, as appropriate, display the OMB control number on the applicable collection instruments and publish a technical amendment to 40 CFR part 9 to display the OMB control number for the approved information collection activities contained in this final rule.

C. Regulatory Flexibility Act (RFA)

I certify that this action will not have a significant economic impact on a substantial number of small entities under the RFA, 5 U.S.C. 601, *et seq.* The small entities subject to the requirements of this action are small businesses that manufacture/import, process, or distribute the chemicals subject to this final rule. The Agency has determined that this final rule will impact approximately 24,865 small businesses of which 860 (3.46%) are expected to incur cost impacts between 1 and 3 percent of their annual revenue, all of which are for PIP (3:1) and none for decaBDE. The cost per small entity impacted ranged from −$42–$1,146,853 at a 3% discount rate and −$128–$1,272,107 at a 7% discount rate. No entities for either chemical are expected to be impacted above 3 percent of their annual revenue. Details of this analysis are presented in the Economic Analysis (Ref. 17), which is in the docket for this action.

D. Unfunded Mandates Reform Act (UMRA)

This action contains a Federal mandate that may result in expenditures of $183 million in 2023 dollars ($100 million in 1995 dollars adjusted for inflation using the GDP implicit price deflator) or more as described in UMRA, 2 U.S.C. 1531–1538, for the private sector in any one year. Total quantified annualized social costs for this final rule are approximately $400 million at a 3 percent discount rate, and $430 million at a 7 percent discount rate. Costs at a 2 percent discount rate are estimated at $390 million. These private sector costs are presented in the Economic Analysis (Ref. 17), a copy of which is available in the docket, and are briefly summarized in Unit I.E. and discussed in Unit IV.

This action is not subject to the requirements of sections 202 and 203 of UMRA because this action imposes no enforceable duty on any State, local or Tribal governments and does not significantly or uniquely affect small governments. This action only impacts only imposes enforceable duties on private sector entities that manufacture (including import), process, distribute in commerce, use, or dispose of decaBDE and PIP (3:1), and government entities are not engaged in these activities.

E. Executive Order 13132: Federalism

This action does not have federalism implications as specified in Executive Order 13132 (64 FR 43255, August 10, 1999), because it will not have substantial direct effects on the States, on the relationship between the National Government and the States, or on the distribution of power and responsibilities among the various levels of government. As stated in Unit VI.D., State and local government entities are not engaged in the activities covered by this action. See also the discussion in Unit I.E.6.

F. Executive Order 13175: Consultation and Coordination With Indian Tribal Governments

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 stated in Unit VI.D., Tribal government entities are not engaged in the activities covered by this action. See also the discussion in Unit I.E.6.

G. Executive Order 13045: Protection of Children From Environmental Health and Safety Risks

Executive Order 13045 (62 FR 19885, April 23, 1997) directs Federal agencies to include an evaluation of the health and safety effects of the planned regulation on children in Federal health and safety standards and explain why the regulation is preferable to potentially effective and reasonably feasible alternatives. This action is subject to Executive Order 13045 because it is a significant regulatory action under section 3(f)(1) of Executive Order 12866, and the EPA believes that the environmental health or safety risk addressed by this action may have a disproportionate effect on children. While EPA understands that this action addresses the health and environmental risks presented by the PBT chemicals subject to this action that may have a disproportionate effect on children, EPA did not perform a risk assessment or risk evaluation of these PBT chemicals. However, the final requirements will reduce potential exposure to these PBT chemicals for the general population and for susceptible subpopulations such as workers and children. EPA's evaluation of the exposure potential of these PBT chemicals (Ref. 19) and summary of the health and environmental hazards that may be presented by these chemical substances (Ref. 24) are summarized in Unit II.E., with referenced documents available in the docket. In addition, the regulatory options analyzed are discussed in Unit III.

Furthermore, EPA's *Policy on Children's Health* also applies to this action. Information on how the Policy was applied is discussed in Unit I.E.5. See also the other discussions about the risks presented by the PBT chemicals

subject to this action that are provided throughout this preamble.

H. Executive Order 13211: Actions Concerning Regulations That Significantly Affect Energy

This action is not a ''significant energy action'' as defined in Executive Order 13211 (66 FR 28355, May 22, 2001), because it is not likely to have a significant adverse effect on the supply, distribution or use of energy.

I. National Technology Transfer and Advancement Act (NTTAA)

This action does not involve technical standards under the NTTAA section 12(d), 15 U.S.C. 272.

J. Executive Orders 12898: Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations and 14096: Revitalizing Our Nation's Commitment to Environmental Justice for All

EPA believes that it is not practicable to assess whether the human health or environmental conditions that exist prior to this action result in disproportionate and adverse effects on communities with EJ concerns consistent with Executive Order 14096 (88 FR 25251, April 26, 2023) building on and supplementing Executive Order 12898 (59 FR 7629, February 16, 1994). EPA's related evaluation is summarized in Units I.E.4. and VI., and discussed in the Economic Analysis (Ref. 17) that is in the docket.

Since a risk evaluation was not conducted, EPA's understanding of the extent to which reductions in exposure might reduce risks for communities with environmental justice concerns is limited. Data are not sufficiently comprehensive to estimate the extent to which the final rule will reduce existing disproportionate impacts on communities with EJ concerns. Data on the worker composition of affected industries, presented in sections 6.5.1 and 6.5.2 of the Economic Analysis (Ref. 17), provide a general indication of how different demographic groups in the worker population may be affected. Certain exclusions and extensions of compliance dates beyond the onset of the final rule may partially delay addressing these impacts. EPA is confident that the restrictions that will be placed on decaBDE and PIP (3:1) with adoption of this final rule will reduce the potential exposures, and therefore, reduce any potential risks, associated with the manufacture, processing and use of these chemicals. EPA cannot confirm which specific subpopulations are at a disproportionate risk from exposure nor make a quantified estimate of the change in exposure that will result from the rule. In addition, only a small subset of the specific facilities using decaBDE and PIP (3:1) have been identified, so a proximity analysis examining the characteristics of the communities surrounding the known facilities might not be representative of all exposed communities. Some workers will receive PPE with adoption of the rule, while others will no longer be exposed to decaBDE and PIP (3:1). As companies reformulate with chemical alternatives, some workers may be exposed to these alternatives. Local communities will also be less exposed to decaBDE and PIP (3:1), though exposure to chemical alternatives may increase. EPA does not know which chemical alternatives industry will ultimately use. Some alternatives are less toxic than and some are comparably toxic to decaBDE and PIP (3:1).

K. Congressional Review Act (CRA)

This action is subject to the CRA, 5 U.S.C. 801 *et seq.,* and EPA will submit a rule report to each House of the Congress and to the Comptroller General of the United States. This action meets the criteria set forth in 5 U.S.C. 804(2).

List of Subjects 40 CFR Part 751

Environmental protection, Chemicals, Export notification, Hazardous substances, Import certification, Reporting and recordkeeping.

Michael S. Regan,

Administrator.

Therefore, for the reasons set forth in the preamble, EPA is amending 40 CFR chapter I as follows:

PART 751—REGULATION OF CERTAIN CHEMICAL SUBSTANCES AND MIXTURES UNDER SECTION 6 OF THE TOXIC SUBSTANCES CONTROL ACT

■ 1. The authority citation for part 751 continues to read as follows:

Authority: 15 U.S.C. 2605, 15 U.S.C. 2625(l)(4).

■ 2. Amend § 751.401 by adding paragraph (c) to read as follows:

§ 751.401 General.

* * * * *

(c) *Owner and operator requirements.* 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.

■ 3. Amend § 751.403 by adding in alphabetical order the definitions for ''Potentially exposed person'' and ''Regulated area'' to read as follows:

§ 751.403 Definitions.

* * * * *

Potentially exposed person means any person who may be exposed to a chemical substance or mixture regulated under this subpart as a result of the use of that chemical or mixture.

* * * * *

Regulated area means an area established by the regulated entity to demarcate areas where airborne concentrations of a specific chemical substance can reasonably be expected.

* * * * *

■ 4. Amend § 751.405 by:
■ a. Revising paragraphs (a)(1) and (a)(2)(ii);
■ b. Adding paragraph (a)(2)(vi);
■ c. Revising paragraphs (b) and (c)(1)(i) and (iii); and
■ d. Adding paragraphs (d) through (g).

The revisions and additions read as follows:

§ 751.405 DecaBDE.

(a) * * *

(1) *General.* (i) Except as provided in paragraphs (a)(2) and (b) of this section, all persons are prohibited from all manufacturing and processing of decaBDE or decaBDE-containing products or articles after March 8, 2021, and all persons are prohibited from all distribution in commerce of decaBDE or decaBDE-containing products or articles after January 6, 2022.

(ii) Unless otherwise specified in this subpart, the prohibitions and restrictions of this subpart do not apply to products or articles containing decaBDE at concentrations less than 0.1% by weight, if the decaBDE was not intentionally added to the product or article.

(2) * * *

(ii) After January 6, 2023, all persons are prohibited from all processing and distribution in commerce of decaBDE for use in wire and cable insulation in nuclear power generation facilities (including test and research reactors).

* * * * *

(vi) After the end of the wire and cables' service life, all persons are prohibited from all processing and distribution in commerce of decaBDE-containing wire and cable insulation for nuclear power generation facilities (including test and research reactors).

(b) *Exclusions to the Prohibition.* Distribution in commerce and recycling of decaBDE-containing plastic from products or articles, and processing and distribution in commerce of decaBDE-containing products or articles made from such recycled plastic, where no new decaBDE is added during the recycling or production processes is not

subject to the prohibition in paragraph (a) of this section.

(c) * * *

(1) * * *

(i) These records must be maintained for a period of five years from the date the record is generated.

* * * * *

(iii) These records must be made available to EPA upon request.

* * * * *

(d) *Signage in Regulated Areas.* (1) After January 21, 2025, all persons who process, including recycle, plastic shipping pallets that contain decaBDE must place signs at every entry point into the regulated area.

(2) Each sign must show clearly, prominently, in multiple languages as appropriate, and in an easily readable font size the following text:

Decabromodiphenyl ether (decaBDE) (CASRN 1163–19–5), a chemical that has been identified as a persistent, bioaccumulative, and toxic (PBT) chemical by the U.S. Environmental Protection Agency, may be present in this regulated area. All persons in this regulated area who recycle existing plastic shipping pallets that contain decaBDE are required to wear personal protective equipment, including respiratory protection that is at least as protective as a NIOSH-approved N95 respirator with an assigned protection factor (APF) of 10 and dermal protection of gloves that are chemically resistant to decaBDE, per regulations at 40 CFR 751.405(e).

(e) Workplace protection—(1) *Applicability.* After January 21, 2025, the provisions of this paragraph (e) apply to any workplaces engaged in manufacturing and processing of decaBDE and decaBDE-containing products and articles, except for those identified in paragraph (e)(6) of this section.

(2) *Regulated areas.* Owners or operators must establish and maintain regulated areas as defined in 40 CFR 751.403.

(i) The owner or operator must limit access to regulated areas to authorized persons.

(ii) The owner or operator must demarcate regulated areas from the rest of the workplace in a manner that adequately establishes and alerts persons to the boundaries of the regulated area and minimizes the number of authorized persons exposed to decaBDE within the regulated area.

(iii) The owner or operator must ensure that each potentially exposed person is provided with a respirator according to the requirements of paragraph (e) of this section and must ensure that all potentially exposed persons within the regulated area are using the provided respirators whenever exposures to airborne concentrations of decaBDE can reasonably be expected.

(iv) The owner or operator must ensure that while persons are wearing respirators in the regulated area, they do not engage in activities that interfere with respirator seal or performance.

(v) The owner or operator must ensure that, within a regulated area, persons do not engage in non-work activities that may increase exposure to decaBDE.

(3) *Respiratory protection.* The owner or operator must provide respiratory protection to all potentially exposed persons in the regulated area as demarcated in accordance with paragraph (e)(2) of this section, and according to the provisions outlined in 29 CFR 1910.134(b), (c)(1), (3) and (4), (d)(1)(iv), (f), and (g) through (l) and, as specified in this paragraph (e)(3) for potentially exposed persons to decaBDE during expected time of use.

(i) For purposes of this paragraph (e)(3), cross-referenced provisions in 29 CFR 1910.134 applying to an ''employee'' apply equally to potentially exposed persons and cross-referenced provisions applying to an ''employer'' also apply equally to owners or operators. Other terms in cross-referenced provisions in 29 CFR 1910.134 that are defined in 29 CFR 1910.134(b) have the meaning assigned to them in 29 CFR 1910.134(b).

(ii) Owners and operators must develop and administer a written respiratory protection program consistent with the requirements of 29 CFR 1910.134(c)(1), (3) and (4).

(iii) Owners and operators must select respiratory protection that properly fits each affected person and communicate respirator selections to each affected person consistent with the requirements of 29 CFR 1910.134(f).

(iv) Owners and operators must provide, ensure use of, and maintain (in a sanitary, reliable, and undamaged condition) respiratory protection that is of safe design and construction for the applicable condition of use consistent with the requirements of 29 CFR 1910.134(g) through (j).

(v) Prior to or at the time of initial assignment to a job involving potential exposure to decaBDE, owners and operators must provide training to all persons required to use respiratory protection consistent with 29 CFR 1910.134(k).

(vi) Owners and operators must retrain all persons required to use PPE at least annually, or whenever the owner or operator has reason to believe that a previously trained person does not have the required understanding and skill to properly use PPE, or when changes in the workplace or in PPE to be used render the previous training obsolete.

(vii) The type of respiratory protection that the owners or operator must select and provide to potentially exposed persons must be at least as protective as a NIOSH-approved N95 respirator (APF 10).

(viii) Owners and operators must select and provide respirators as required in paragraph (e)(3) of this section consistent with the requirements of 29 CFR 1910.134(d)(1)(iv), and with consideration of workplace and user factors that affect respirator performance and reliability.

(ix) Owners and operators must ensure that respirators are used in compliance with the terms of the respirator's NIOSH certification.

(x) Owners and operators must conduct regular evaluations of the workplace, including consultations with potentially exposed persons using respiratory protection, consistent with the requirements of 29 CFR 1910.134(l), to ensure that the provisions of the written respiratory protection program required under paragraph (e)(3) of this section are being effectively implemented.

(xi) The respiratory protection requirements in this paragraph (e)(3) represent the minimum respiratory protection requirements, such that any respirator affording a higher degree of protection than the required respirator may be used.

(4) *Dermal protection.* (i) Owners or operators must require the donning of gloves that are chemically resistant to decaBDE with activity-specific training where dermal contact with decaBDE is reasonably expected. Owners or operators must minimize and protect potentially exposed persons from dermal exposure in accordance with 29 CFR 1910.132.

(ii) Owners or operators must supply and require the donning of dermal PPE that separates and provides a barrier to prevent direct dermal contact with decaBDE in the specific work area where it is selected for use, selected in accordance with this paragraph (e)(4) and provided in accordance with 29 CFR 1910.132(h), to each person who is reasonably likely to be dermally exposed in the work area through direct dermal contact with decaBDE. For the purposes of this paragraph (e)(4), provisions in 29 CFR 1910.132(h) applying to an ''employee'' also apply equally to potentially exposed persons, and provisions applying to an ''employer'' also apply equally to owners or operators.

(iii) Dermal PPE that is of safe design and construction for the work to be

performed must be provided, used, and maintained in a sanitary, reliable, and undamaged condition. Owners and operators must select PPE that properly fits each affected person and communicate PPE selections to each affected person.

(iv) Owners or operators must provide training in accordance with 29 CFR 1910.132(f) to all persons required to use dermal protection prior to or at the time of initial assignment to a job involving exposure to decaBDE. For the purposes of this paragraph (e)(4), provisions in 29 CFR 1910.132(f) applying to an ''employee'' also apply equally to potentially exposed persons, and provisions applying to an ''employer'' also apply equally to owners or operators.

(v) Owners and operators must retrain each person required to use dermal protection at least annually or whenever the owner or operator has reason to believe that a previously trained person does not have the required understanding and skill to properly use dermal protection, or when changes in the workplace or in dermal protection to be used render the previous training obsolete.

(5) *Workplace protection records.* (i) The owner or operator of workplaces engaged in the manufacturing and processing of decaBDE and decaBDE-containing products and articles, except for those identified in paragraph (e)(6) of this section, must retain records of:

(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 be present;

(B) The basis for the regulated area as defined in § 751.403, including monitoring data and documentation of any controls or combination of controls that have reduced exposure to where airborne concentrations of decaBDE can no longer reasonably be expected resulting in a smaller or no regulated area being established;

(C) The type of PPE selected by the owner or operator for use by each of these persons, the respiratory protection used by each potentially exposed person, and PPE program implementation, including fit-testing and training;

(D) The basis for the 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

(E) Appropriately sized PPE and training on proper application, wear, and removal of PPE, and proper care/disposal of PPE.

(ii) These records must be maintained for a period of five years from the date the record is generated.

(iii) These records must be made available to EPA upon request.

(iv) The owner or operator must provide potentially exposed persons and their designate representative an opportunity to observe records related to the basis of the PPE or another control measure selection, including potential monitoring results that are representative of the potentially exposed person's exposure.

(6) *Exclusions.* The following are not subject to the workplace protection requirements of paragraph (e) of this section:

(i) Import of decaBDE and decaBDE-containing products and articles.

(ii) Recycling of decaBDE-containing plastic from products or articles and decaBDE-containing products or articles made from such recycled plastic, where no new decaBDE is added during the recycling or production processes, except for those articles identified in paragraph (a)(2)(v) of this section.

(iii) Processing addressed in paragraph (a)(2)(vi) of this section of decaBDE-containing wire and cable insulation for use in nuclear power generation facilities.

(iv) Processing of new and replacement parts to which decaBDE has been added for motor and aerospace vehicles, and the motor and aerospace vehicles that contain new and replacement parts to which decaBDE has been added.

(f) *Export notification for decaBDE-containing products and articles.* All persons intending to export decaBDE-containing wire and cable for nuclear power generation facilities (including test and research reactors) are required to notify EPA under TSCA section 12(b) and the provisions of subpart D of 40 CFR part 707. The exemption at 40 CFR 707.60(b) does not apply to decaBDE-containing wire and cable for nuclear power generation facilities.

(g) *Prohibition on releases to water.* After January 21, 2025, all persons are prohibited from releasing decaBDE to water during manufacturing, processing, and distribution in commerce of decaBDE and decaBDE-containing products, and such persons are required to follow any applicable regulations for preventing the release of decaBDE.

■ 5. Amend § 751.407 by:

■ a. Revising paragraph (a)(1);
■ b. Adding paragraph (a)(2) introductory text;
■ c. Revising paragraph (a)(2)(iii);
■ d. Adding paragraphs (a)(2)(iv) through (xi);
■ e. Revising paragraphs (b)(1)(ii), (iii) and (vii);
■ f. Adding paragraphs (b)(1)(viii) and (b)(2);
■ g. Revising paragraphs (d)(1) and (3) and (e)(3) and (4); and
■ h. Adding paragraphs (e)(5) and (f).

The revisions and additions read as follows:

§ 751.407 PIP (3:1).

(a) * * *

(1) *General prohibition on processing and distribution in commerce.* Except as provided in paragraphs (a)(2) and (b) of this section, all persons are prohibited from all processing and distributing in commerce of PIP (3:1), including in PIP (3:1)-containing products or articles after March 8, 2021. Except as provided in paragraphs (a)(2) and (b) of this section, the prohibitions and restrictions of this subpart do not apply to products or articles containing PIP (3:1) at concentrations less than 0.1 percent by weight, if the PIP (3:1) was not intentionally added to the product or article.

(2) *Phase-in prohibitions for specific uses of PIP (3:1) and PIP (3:1)-containing products and articles.* Except for the activities described in paragraph (b) of this section or where another phase-in prohibition with longer-term deadlines exists as described in this section:

* * * * *

(iii) After October 31, 2024, all persons are prohibited from all processing and distribution of PIP (3:1) for use in articles and all processing of PIP (3:1)-containing articles. After October 31, 2026, all persons are prohibited from distribution in commerce of PIP (3:1)-containing articles.

(iv) After November 21, 2039, all persons are prohibited from all 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 lubricants and greases and PIP (3:1)-containing lubricants and grease.

(v) After November 21, 2039, all persons are prohibited from all processing and distribution in commerce of PIP (3:1) for use in parts for new motor vehicles, including heavy motorized machinery, and manufacturing, processing, and distribution in commerce of PIP (3:1)-

containing products for use in parts for new motor vehicles, including heavy motorized machinery, and manufacturing and processing of PIP (3:1)-containing parts for such new vehicles.

(vi) After November 19, 2054, all persons are prohibited from all 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 motor vehicles, including heavy motorized machinery, and manufacturing and processing of PIP (3:1)-containing replacement parts for such vehicles.

(vii) After November 19, 2054, all persons are prohibited from all 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 parts for new aerospace vehicles, and manufacturing and processing of PIP (3:1)-containing parts for such vehicles.

(viii) After the end of the aerospace vehicles service lives, all persons are prohibited from all 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 aerospace vehicles and manufacturing and processing of PIP (3:1)-containing replacement parts for such vehicles.

(ix) After November 19, 2029, all persons are prohibited from 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 marine antifouling coating products that are registered under the Federal, Insecticide, Fungicide, Rodenticide Act and that meet U.S. Department of Defense specification requirements.

(x) After November 20, 2034, all persons are prohibited from 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 parts for new manufacturing equipment, including in the semiconductor industry, for new heating, ventilation, air-conditioning, refrigeration, and water-heating equipment, new power generating equipment, new laboratory equipment, new commercial electronic equipment, and the manufacturing and processing of PIP (3:1)-containing parts for those equipment.

(xi) After the end of the manufacturing and laboratory equipment service lives, all persons are prohibited from 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 and manufacturing and processing of PIP (3:1)-containing replacement parts for manufacturing equipment and laboratory equipment, respectively. After November 19, 2049 all persons are prohibited from 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 and manufacturing and processing of PIP (3:1)-containing replacement parts for heating, ventilation, air-conditioning, refrigeration, and water-heating equipment, for power generating equipment, and for commercial electronic equipment. After November 19, 2031 all persons are prohibited from 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 and manufacturing and processing of PIP (3:1)-containing replacement parts for consumer electronic equipment.

(b) * * *

(1) * * *

(ii) PIP (3:1) for use in lubricants and greases for aerospace use and turbine engines, PIP (3:1)-containing products for use in lubricants and greases for aerospace use and turbine engines, and PIP (3:1)-containing lubricants and greases for aerospace use and turbine engines;

(iii) PIP (3:1) and PIP (3:1)-containing products for use in circuit boards and wire harnesses, including but not limited to terminal and fuse covers, cable sleeves, casings, connectors, and tapes, and PIP (3:1)-containing circuit boards and wire harnesses including but not limited to terminal and fuse covers, cable sleeves, casings, connectors, and tapes.

* * * * *

(vii) Finished products or articles made of plastic recycled or reused from products or articles containing PIP (3:1), where no new PIP (3:1) was added during the production of the products or articles made of recycled plastic.

(viii) Articles that contain PIP (3:1), and where PIP (3:1) has not been newly added, for the purpose of repair or maintenance.

(2) Distribution in commerce of:

(i) PIP (3:1)-containing parts for vehicles meeting the requirements in paragraphs (a)(2)(v) through (viii) of this section, for equipment meeting requirements in paragraphs (a)(2)(x) through (xi) of this section, and the vehicles and equipment that contain such parts.

(ii) [Reserved]

* * * * *

(d) * * *

(1) After March 8, 2021, persons who manufacture, process, or distribute in commerce PIP (3:1) or PIP (3:1)-containing products or articles must maintain ordinary business records, such as invoices and bills-of-lading, related to compliance with the prohibitions, restrictions, and other provisions of this section. These records must be maintained for a period of five years from the date the record is generated.

* * * * *

(3) These records must be made available to EPA upon request.

* * * * *

(e) * * *

(3) Downstream notification must occur by inserting the text in paragraphs (e)(3)(i) and (ii) of this section in the Safety Data Sheet (SDS) by February 19, 2025, or by including on the label of any PIP (3:1) or PIP (3:1)-containing product by May 19, 2026, the label language in paragraph (e)(3)(iii) of this section:

(i) *SDS Section 1(c).*

The Environmental Protection Agency prohibits processing and distribution of this chemical/product for any use other than: (1) In hydraulic fluids either for the aviation industry or to meet military specifications for safety and performance where no alternative chemical is available that meets U.S. Department of Defense specification requirements, (2) In lubricants and greases for aerospace and turbine uses and, for all other lubricant and grease uses before November 21, 2039, (3) circuit boards and wire harnesses, including but not limited to terminal and fuse covers, cable sleeves, casings, connectors and tapes, (4) As an intermediate in the manufacture of cyanoacrylate glue, (5) In specialized engine air filters for locomotive and marine applications, (6) In adhesives and sealants before January 6, 2025, after which use in adhesives and sealants is prohibited, (7) In new parts for motor vehicles before November 21, 2039 and replacement parts for motor vehicles before November 19, 2054, (8) In new parts for aerospace vehicles before November 19, 2054 and replacement parts for aerospace vehicles after the end of the aerospace vehicles service lives, (9) In marine antifouling coating products that are registered under the Federal Insecticide, Fungicide, and Rodenticide Act and that meet U.S. Department of Defense specification requirements before November 19, 2029, (10) In new manufacturing equipment, new products or articles in the semiconductor industry, for new heating,

ventilation, air-conditioning, refrigeration, and water-heating equipment, new power generating equipment, new laboratory equipment, new commercial electronic equipment, and new consumer electronic equipment before November 20, 2034, (11) replacement parts for manufacturing and laboratory equipment after the end of the equipment's service life, (12) replacement parts for heating, ventilation, air-conditioning, refrigeration, and water-heating equipment, for power generating equipment, and for commercial electronic equipment before November 19, 2049, (13) replacement parts for consumer electronic equipment before November 19, 2031, (14) in other articles before October 31, 2024, after which use in articles other than those with later phase-in prohibition dates or exclusions is prohibited. In addition, all persons are prohibited from releasing PIP (3:1) to water during manufacturing, processing, and distribution in commerce, and must follow all existing regulations and best practices to prevent the release of PIP (3:1) to water during the commercial use of PIP (3:1).

(ii) *SDS Section 15.*

The Environmental Protection Agency prohibits processing and distribution of this chemical/product for any use other than: (1) In hydraulic fluids either for the aviation industry or to meet military specifications for safety and performance where no alternative chemical is available that meets U.S. Department of Defense specification requirements, (2) In lubricants and greases for aerospace and turbine uses and lubricants and, for all other lubricant and grease uses before November 21, 2039, (3) circuit boards and wire harnesses, including but not limited to terminal and fuse covers, cable sleeves, casings, connectors and tapes, (4) As an intermediate in the manufacture of cyanoacrylate glue, (5) In specialized engine air filters for locomotive and marine applications, (6) In adhesives and sealants before January 6, 2025, after which use in adhesives and sealants is prohibited, (7) In new parts for motor vehicles before November 21, 2039 and replacement parts for motor vehicles before November 19, 2054, (8) In new parts for aerospace vehicles before November 19, 2054 and replacement parts for aerospace vehicles after the end of the aerospace vehicles service lives, (9) In marine antifouling coating products that are registered under the Federal Insecticide, Fungicide, and Rodenticide Act and that meet U.S. Department of Defense specification requirements before November 19, 2029, (10) In new manufacturing equipment, new products or articles in the semiconductor industry, for new heating, ventilation, air-conditioning, refrigeration, and water-heating equipment, new power generating equipment, new laboratory equipment, new commercial electronic equipment, and new consumer electronic equipment before November 20, 2034, (11) replacement parts for manufacturing and laboratory equipment after the end of the equipment's service life, (12) replacement parts for heating, ventilation, air-conditioning, refrigeration, and water-heating equipment, for power generating equipment, and for commercial electronic equipment before November 19, 2049, (13) replacement parts for consumer electronic equipment before November 19, 2031, (14) in other articles before October 31, 2024, after which use in articles other than those with later phase-in prohibition dates or exclusions is prohibited. In addition, all persons are prohibited from releasing PIP (3:1) to water during manufacturing, processing, and distribution in commerce, and must follow all existing regulations and best practices to prevent the release of PIP (3:1) to water during the commercial use of PIP (3:1).

(iii) *Labeling.*

The Environmental Protection Agency prohibits processing and distribution of this chemical/product for any use other than: (1) In hydraulic fluids either for the aviation industry or to meet military specifications for safety and performance where no alternative chemical is available that meets U.S. Department of Defense specification requirements, (2) In lubricants and greases for aerospace and turbine uses and, for all other lubricant and grease uses before November 21, 2039, (3) circuit boards and wire harnesses, including but not limited to terminal and fuse covers, cable sleeves, casings, connectors and tapes, (4) As an intermediate in the manufacture of cyanoacrylate glue, (5) In specialized engine air filters for locomotive and marine applications, (6) In adhesives and sealants before January 6, 2025, after which use in adhesives and sealants is prohibited, (7) In new parts for motor vehicles before November 21, 2039 and replacement parts for motor vehicles before November 19, 2054, (8) In new parts for aerospace vehicles before November 19, 2054 and replacement parts for aerospace vehicles after the end of the aerospace vehicles service lives, (9) In marine antifouling coating products that are registered under the Federal Insecticide, Fungicide, and Rodenticide Act and that meet U.S. Department of Defense specification requirements before November 19, 2029, (10) In new manufacturing equipment, new products or articles in the semiconductor industry, for new heating, ventilation, air-conditioning, refrigeration, and water-heating equipment, new power generating equipment, new laboratory equipment, new commercial electronic equipment, and new consumer electronic equipment before November 20, 2034, (11) replacement parts for manufacturing and laboratory equipment after the end of the equipment's service life, (12) replacement parts for heating, ventilation, air-conditioning, refrigeration, and water-heating equipment, for power generating equipment, and for commercial electronic equipment before November 19, 2049, (13) replacement parts for consumer electronic equipment before November 19, 2031, (14) in other articles before October 31, 2024, after which use in articles other than those with later phase-in prohibition dates or exclusions is prohibited. In addition, all persons are prohibited from releasing PIP (3:1) to water during manufacturing, processing, and distribution in commerce, and must follow all existing regulations and best practices to prevent the release of PIP (3:1) to water during the commercial use of PIP (3:1).

(4) Any downstream notification that occurs under paragraph (e) of this section between February 19, 2025 and May 19, 2026, must include a safety data sheet with the language in paragraphs (e)(3)(i) and (ii) of this section unless distributing products with labels reflecting the language in paragraph (e)(3)(iii) of this section.

(5) The downstream notification requirements in paragraph (e) of this section do not apply to the activities described in paragraphs (b)(1)(vi) and (vii) of this section.

(f) *Workplace protection*—(1) *Applicability.* After January 21, 2025, the provisions of this paragraph (f) apply to workplaces engaged in *the manufacturing and processing of PIP (3:1) and PIP (3:1)-containing products and articles*, except for those identified in paragraph (f)(7) of this section.

(2) *Regulated areas.* Owners or operators must establish and maintain regulated areas as defined in § 751.403.

(i) The owner or operator must limit access to regulated areas to authorized persons.

(ii) The owner or operator must demarcate regulated areas from the rest of the workplace in a manner that adequately establishes and alerts persons to the boundaries of the regulated area and minimizes the number of authorized persons exposed to PIP (3:1) within the regulated area.

(iii) The owner or operator must ensure each potentially exposed person is provided with a respirator according to the requirements of paragraph (f) of this section and must ensure that all potentially exposed persons within the regulated area are using the provided respirators whenever exposures to airborne concentrations of PIP (3:1) can reasonably be expected.

(iv) The owner or operator must ensure that while persons are wearing respirators in the regulated area, they do not engage in activities that interfere with respirator seal or performance.

(v) The owner or operator must ensure that, within a regulated area, persons do not engage in non-work activities that may increase exposure to PIP (3:1).

(3) *Respiratory protection.* The owner or operator must provide respiratory protection to all potentially exposed persons in the regulated area as demarcated in accordance with paragraph (f)(2) of this section, and according to the provisions outlined in 29 CFR 1910.134(b), (c)(1), (3) and (4), (d)(1)(iv), (f), and (g) through (l) and as specified in this paragraph (f)(3) for potentially exposed persons to PIP (3:1) during expected time of use.

(i) For purposes of this paragraph (f)(3), cross-referenced provisions in 29 CFR 1910.134 applying to an ''employee'' apply equally to potentially exposed persons and cross-referenced provisions applying to an ''employer'' also apply equally to owners or operators. Other terms in cross-referenced provisions in 29 CFR 1910.134 that are defined in 29 CFR 1910.134(b) have the meaning assigned to them in 29 CFR 190.134(b).

(ii) Owners and operators must develop and administer a written respiratory protection program consistent with the requirements of 29 CFR 1910.134(c)(1), (3) and (4).

(iii) Owners and operators must select respiratory protection that properly fits each affected person and communicate respirator selections to each affected person consistent with the requirements of 29 CFR 1910.134(f).

(iv) Owners and operators must provide, ensure use of, and maintain (in a sanitary, reliable, and undamaged condition) respiratory protection that is of safe design and construction for the applicable condition of use consistent with the requirements of 29 CFR 1910.134(g) through (j).

(v) Prior to or at the time of initial assignment to a job involving potential exposure to PIP (3:1) owners and operators must provide training to all persons required to use respiratory protection consistent with 29 CFR 1910.134(k).

(vi) Owners and operators must retrain all persons required to use PPE at least annually, or whenever the owner or operator has reason to believe that a previously trained person does not have the required understanding and skill to properly use PPE, or when changes in the workplace or in PPE to be used render the previous training obsolete.

(vii) The type of respiratory protection that the owner or operator must select and provide to potentially exposed persons must be at least as protective as a NIOSH-approved APF 10 air-purifying half mask respirator except for those uses identified in paragraphs (f)(3)(viii) and (ix) of this section.

(viii) The type of respiratory protection that owners or operators must select and provide to potentially exposed persons must be at least as protective as a NIOSH-approved N95 respirator (APF 10) for the manufacturing and processing of PIP (3:1), and PIP (3:1)-containing products for use in new and replacement parts for motor vehicles, including heavy machinery, and aerospace vehicles.

(ix) The type of respiratory protection that owners or operators must select and provide to potentially exposed persons must be at least as protective as a NIOSH-approved APF 50 purifying respirator for use as an intermediate to produce cyanoacrylate adhesives when PIP (3:1) and PIP (3:1)-containing products are not contained in a closed system (*i.e.,* except as described in paragraph (f)(7)(iii) of this section).

(x) Owners and operators must select and provide respirators as required in paragraph (f)(3) of this section consistent with the requirements of 29 CFR 1910.134(d)(1)(iv), and with consideration of workplace and user factors that affect respirator performance and reliability.

(xi) Owners and operators must ensure that respirators are used in compliance with the terms of the respirator's NIOSH certification.

(xii) Owners and operators must conduct regular evaluations of the workplace, including consultations with potentially exposed persons using respiratory protection, consistent with the requirements of 29 CFR 1910.134(l), to ensure that the provisions of the written respiratory protection program required under paragraph (f)(3) of this section are being effectively implemented.

(xiii) The respiratory protection requirements in this paragraph (f)(3) represent the minimum respiratory protection requirements, such that any respirator affording a higher degree of protection than the required respirator may be used.

(4) *Dermal protection.* (i) Owners or operators must require the donning of gloves that are chemically resistant to PIP (3:1) with activity-specific training where dermal contact with PIP (3:1) is reasonably expected. Owners or operators must minimize and protect potentially exposed persons from dermal exposure in accordance with 29 CFR 1910.132.

(ii) Owners or operators must supply and require the donning of dermal PPE that separates and provides a barrier to prevent direct dermal contact with PIP (3:1) in the specific work area where it is selected for use, selected in accordance with this paragraph (f)(4) and provided in accordance with 29 CFR 1910.132(h), to each person who is reasonably likely to be dermally exposed in the work area through direct dermal contact with PIP (3:1) For the purposes of this paragraph (f)(4), provisions in 29 CFR 1910.132(h) applying to an ''employee'' also apply equally to potentially exposed persons, and provisions applying to an ''employer'' also apply equally to owners or operators.

(iii) Dermal PPE that is of safe design and construction for the work to be performed must be provided, used, and maintained in a sanitary, reliable, and undamaged condition. Owners and operators must select PPE that properly fits each affected person and communicate PPE selections to each affected person.

(iv) Owners or operators must provide training in accordance with 29 CFR 1910.132(f) to all persons required to use dermal protection prior to or at the time of initial assignment to a job involving exposure to PIP (3:1). For the purposes of this paragraph (f)(4), provisions in 29 CFR 1910.132(f) applying to an ''employee'' also apply equally to potentially exposed persons, and provisions applying to an ''employer'' also apply equally to owners or operators.

(v) Owners and operators must retrain each person required to use dermal protection at least annually or whenever the owner or operator has reason to believe that a previously trained person does not have the required understanding and skill to properly use dermal protection, or when changes in the workplace or in dermal protection to be used render the previous training obsolete.

(5) *Engineering controls.* Owners or operators manufacturing cyanoacrylate adhesives using PIP (3:1) as an intermediate processing aid must use the following engineering controls:

(i) Must take place in a closed loop system, and

(ii) General and local exhaust ventilation must be provided.

(6) *Workplace protection records.* (i) Owners or operators subject to requirements described in this section must retain records of:

(A) The name, workplace address, work shift, job classification, and work area of each person reasonably likely to directly handle PIP (3:1) or handle equipment or materials on which PIP (3:1) may be present, and the type of PPE selected to be worn by each of these persons;

(B) The basis for the regulated area as defined in § 751.403, including monitoring data and documentation of any controls or combination of controls that have reduced exposure to where airborne concentrations of PIP (3:1) can no longer reasonably be expected resulting in a smaller or no regulated area being established;

(C) The type of PPE selected by the owner or operator for use by each of these persons, the respiratory protection used by each potentially exposed person and PPE program implementation, including fit-testing and training;

(D) 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);

(E) Appropriately sized PPE and training on proper application, wear, and removal of PPE, and proper care/disposal of PPE; and

(F) For owners and operators using PIP (3:1) as an intermediate processing aid in the manufacturing of cyanoacrylate adhesives, compliance with paragraph (f)(5) of this section.

(ii) These records must be maintained for a period of five years from the date the record is generated.

(iii) These records must be made available to EPA upon request.

(iv) The owner or operator must provide potentially exposed persons and their designated representative an opportunity to observe records related to the basis of the PPE or another control measure selection, including potential monitoring results that is representative of the potentially exposed person's exposure.

(7) *Exclusions.* The following are not subject to the workplace protection requirements of paragraph (f) of this section:

(i) Import of PIP (3:1) and PIP (3:1)-containing products and articles.

(ii) Processing of PIP (3:1)-containing adhesives and sealants, specialized engine filters for locomotive and marine applications, and the products or articles described in paragraphs (b)(1)(vi) and (vii) of this section.

(iii) Processing of PIP (3:1)-containing new and replacement parts to which PIP (3:1) has been added for motor and aerospace vehicles and for manufacturing, HVAC, refrigeration and water heating equipment, electric and electronic equipment, and power generating equipment and the motor and aerospace vehicles, manufacturing, HVAC, refrigeration and water heating equipment, electric and electronic equipment, and power generating equipment that contain new and replacement parts to which PIP (3:1) has been added.

(iv) Processing of PIP (3:1) and PIP (3:1)-containing products for use as an intermediate to produce cyanoacrylate adhesives when PIP (3:1) and PIP (3:1)-containing products are contained in a closed system as described in paragraph (f)(6) of this section are not subject to the provisions of paragraphs (f)(3) and (4) of this section.

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